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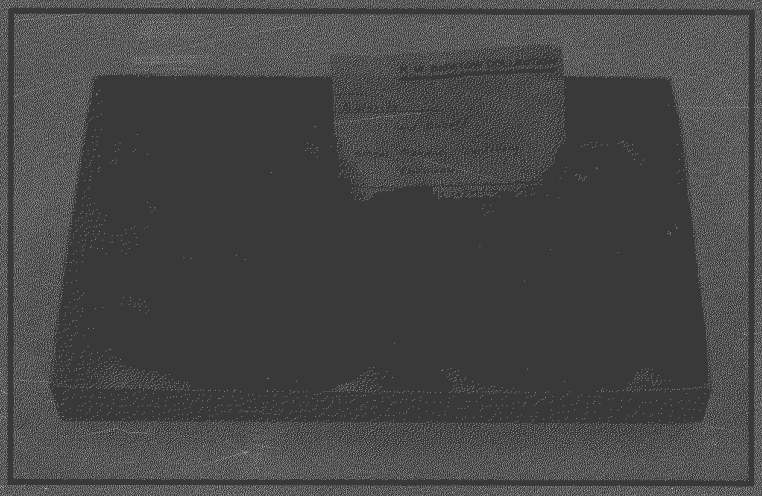

THE STATE AND STATUS OF GEOLOGICAL COLLECTIONS IN UNITED KINGDOM MUSEUMS: 2001

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THE STATE AND STATUS OF GEOLOGICAL COLLECTIONS IN UNITED KINGDOM MUSEUMS: 2001

by

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Recorder GCG

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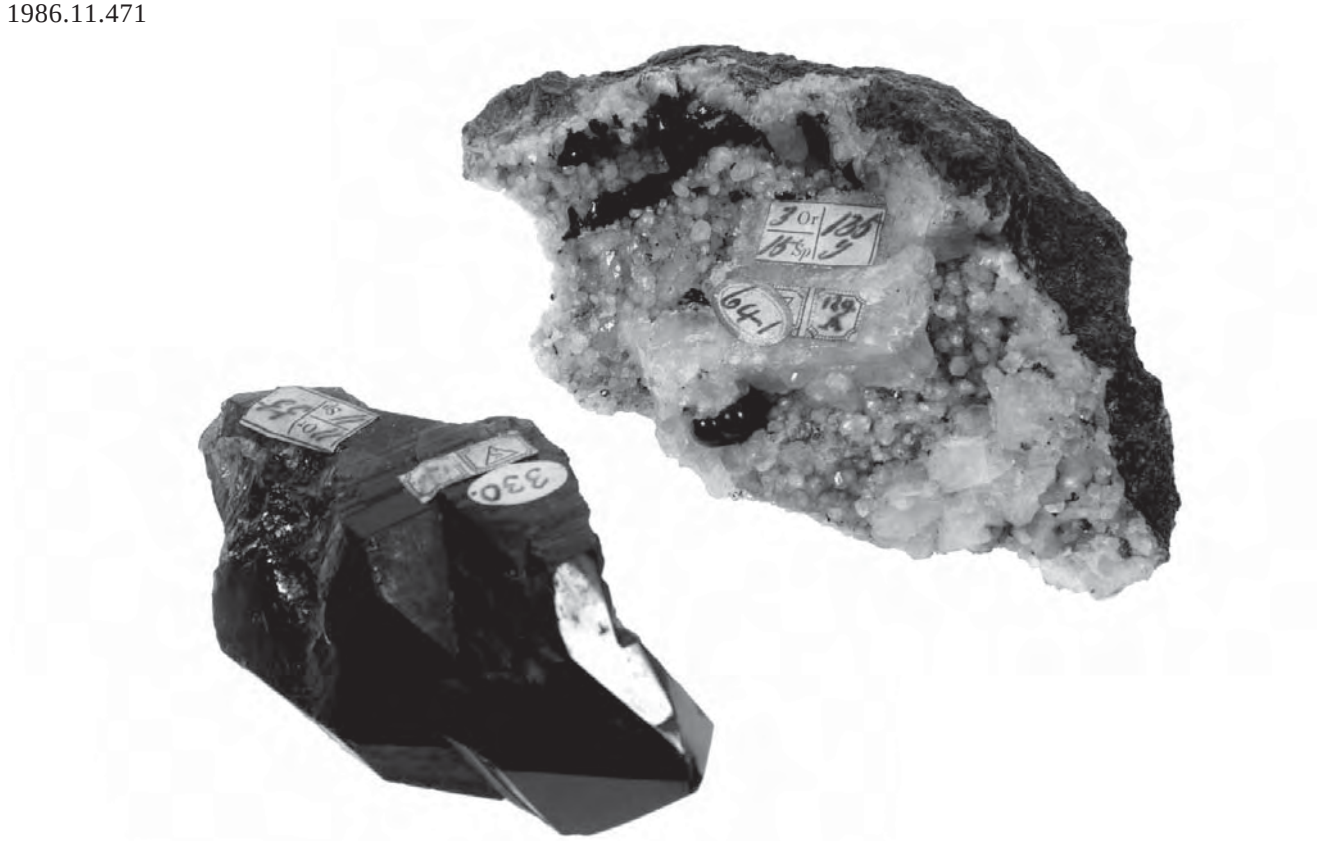
GEOLOGICAL CURATORS' GROUP - May 2005

Pyrite decay in a siderite specimen. Wheal Maudlin, Lanlivery, Cornwall. Richard Barstow Collection. PLYMG: NH 1986.11.471



Top: Calcite on limestone and bitumen from Derbyshire, England. Sir John St. Aubyn Collection purchased from William Babington, 1799. PLYMG : 1924.1.865x
Bottom: Smoky quartz from Hungary. Sir John St. Aubyn Collection purchased from William Babington, 1799. PLYMG : 1924.1.329x

THE STATE AND STATUS OF GEOLOGICAL COLLECTIONS IN UNITED KINGDOM MUSEUMS: 2001

by Helen Fothergill

Fothergill, H. 2005. 'The state and status of geological collections in United Kingdom museums: 2001' *The Geological Curator* 8(3): 53–136.

The Geological Curators' Group, established in 1974, undertook a survey in 1981 investigating the 'State and Status of Geology in United Kingdom Museums'. This survey, the first of its kind, set out to provide a snap-shot impression of how the nation's geological collections were cared for, regarded, used and housed. It allowed the Geological Curators' Group to focus its members' efforts, influencing, where possible, policy decisions regarding the future of many 'at risk' collections and assisting museums in need to specialist curatorial advice. In 2001 it was felt that more than enough time had elapsed since the original survey, and that there was a need to repeat the process, explore other areas of museum management, care and use of collections and compare, where able, the results from the two surveys 20 years apart.

With access to new funding opportunities, museums have expanded and in some cases changed beyond all recognition. More funding appears to be available to all, but with 45% of respondees listing lack of staff time or expertise as their biggest 'threat', will the 'new' curators or collection managers be able to dedicate the resources to chasing these elusive funding streams and proving that they are meeting targets and performance indicators whilst maintaining often historically and scientifically important collections?

The United Kingdom has a unique history in the field of geological curation and collections, with many museums holding collections and specimens of un-recognised scientific and historical value. Should the heritage and culture community feel confidence in their continued care? What problems do we, the curators, perceive with the current 'State and Status' of the collections we hold in trust?

The 'State and Status of Geological Collections in United Kingdom Museums: 2001' report provides another 'snap-shot' of the UK's collections and explores how the position of these collections has changed in 20 years.

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Contents

1. Introduction

General notes regarding the following report

1. In most instances names of individuals and institutions have been removed from the responses listed in the report. However there are some exceptions:

   When discussing the staffing levels compared to the collection size the 21 museums with the highest proportion of staff per specimen have been referred to by name to give a better indication of how staffing levels affect the work, impact and public perception of the institution.

2. Where the 1981 'State and Status of Geology in United Kingdom Museums' report (Doughty, 1981) is referred to in the body of the survey, in most cases it is simply referred to as ***1981***. Where sections of text are taken verbatim from the original 1981 report, they are preceded with ***1981*** and presented in italics.

The survey past and present

In 1981 a survey was sent to some 581 museums around the United Kingdom in an attempt to ascertain a 'snap-shot' of the 'State and Status of Geology in United Kingdom Museums'. 20 years later the question arose… "What has changed in the interim? Have things got better? Or have they (as many of us may fear) got worse?" In 1998 Parkes and Wyse Jackson reported on a similar survey of the collections in 31 institutions in the Republic of Ireland.

In 2001 a second survey of UK geological holdings was commissioned, sent out to institutions, (in some cases) returned and collated.

The following report draws the results of this survey together and where possible compares and contrasts the findings with the original Doughty report of 1981 (Doughty, 1981).

The original introduction from the 'State and Status of Geology in United Kingdom Museums', explains much of the history of geological collecting in the United Kingdom.

An abridged version is repeated here for your reference.

History of geology in the UK

1981

There was a considerable period in Britain during the last century when geology reined supreme in the natural sciences and anyone with aspirations towards the complete man, of necessity, was well versed in the science of the Earth and held views on its major philosophical talking-points. Influential amateur geologists sat in the Commons and uninhibitedly expounded its qualities and values to the nation, and were heeded. Its intellectual elegance and strong masculinity were attributes with powerful appeal in the social climate of the time and its exponents were models of progressive scholarship seen to have earned their positions. For example the appointment of Murchison to the Director-Generalship of the Geological Survey was greeted in the Commons with general cheers and on his death the then Prime Minister, Gladstone, accompanied the coffin to the graveside. Murchison, and a handful like him, were the men who forced themselves into the political arena to forge a link between science and politics, which they believed, and ultimately proved, to be in the best interests of the nation. They were valued in parliament, particularly at those levels where the vital decisions were made, and their influence was considerable. The heritage of such a formidable science was then publicly fostered and entirely secure.

It is a defensible proposition that geology as a science was a British creation. James Hutton, the Edinburgh natural philosopher, land owner, and non-practicing doctor, was the first to recognise the essential difference between rocks which had once been molten and those which were formed as sediments in water. His 'Theory of the Earth' published towards the end of the 18th century argued for an earth formed by processes seen to be operating now, an earth with "no vestige of a beginning, no prospect of an end". The publication of his theory dates the foundation of geology as a modern science. William Smith, although not the first to suggest that rocks could be dated relative to each other from the fossils they contain, was certainly the first to demonstrate the concept as a practical proposition on a wide scale, and his recognition of the map as the ideal medium for this expression of surface geology has remained a lasting statement of his genius.

The most important and influential geology book ever written was the work of another Briton, Charles Lyell. His 'Principles of Geology' published between 1830-33 set in fluent prose an account of earth process entirely consistent with Hutton's principles but with expanded, understandable and convincing descriptions of processes and an unambiguous statement on the vast time scale involved. He debunked George Cuvier's concept of progressive creation and periodic catastrophic extinction to explain the record of the rocks, branding it as misinformed and unscientific. Jean Lamark also fell foul of his pen, his concept of directional evolution meeting violent opposition. In both judgements against these supermen of French natural philosophy he proved correct.

Lyell's most formative experience was his tour through Europe with Roderick Impey Murchison, destined to become a major geological and political force already mentioned, who joined Adam Sedgwick and Henry de la Beche forming an elite group which established a high tradition of stratigraphy, not simply parochial to Britain, but with worldwide implications. Before the end of the 19th century British geologists had stamped themselves indelibly onto the Phanerozoic time-scale contributing the name of no fewer than seven of the eleven periods.

Charles Darwin's theory of evolution, another pinnacle of this fruitful time, was totally reliant on Hutton's principles as expanded by Lyell, to which he added the concept of natural selection and inheritance. Because this theory had implications for the origins of man himself, it became the most widely known and contentiously debated of any at that time, and has remained a pivot of philosophical thought ever since. These are the international scientific giants whose contribution is recognised wherever geology is taught.

Hutton certainly led the way into this Golden Age of Geology, but it would be mistaken to believe that these major advances were entirely the original products of that century. Much 17th and 18th century natural philosophy, though mistaken in its conclusions, was the essential foundation of this peak of achievement, and the achievement itself stimulated the mass geological movement of the 19th century to the present as reflected in the activities of hundreds of societies and private individuals.

The British legacy to geological science is not purely an abstract inheritance, it is a material one too, and because geology is a science of observation, the mass of rocks, fossils and minerals is not a by-product of developing concepts but part of the very stuff of them.

Specimens viewed as survivals of earlier intellectual quests are in the true tradition of museum curiosities, but scientific specimens fall outside this purely historicist function because, as major models of geological thought have changed, many researchers have required the massive resources of existing collections, either as tools to progress, or as a conveniently available and organised body of evidence to demonstrate their truth. The field of economic geology not only fills museum cabinets, it also draws on them in ways not always freely acknowledged. Geology will continue to need its museums into the indefinite future both as repositories for classic material and as fundamental workhouses of descriptive and conceptual science, and one might hope that their collections have been preserved and cherished with the same enthusiasm and care that characterized the full bloom of the Golden Age.

Throughout the 1960's and early 1970's geological curators, particularly those of the non-London museums, were aware to some degree of the professional disarray of their science in museums but were unable to find a suitable arena of expression for their concern. The Museums Association could not grant the status that seemed imperative for effective action, meetings were invariably accidental and consequently brief and unstructured. There was not even an informal organization in existence to bring geological curators and those interested in geological curation into contact. In the early 1970s there was a growing sense of urgency and a feeling that unless something was done quickly, it may be too late to save some collections. It was against this background that a meeting of interested curators was called in Leicestershire Museum and Art Gallery in 1974. As a consequence of that event the Geological Curators' Group came into existence.

The 1981 report concentrated on the status and contents of the collections housed in UK museums, with attention paid to the coverage, regional/national/ international importance and historical associations of the collections.

In 2001, the emphasis has shifted to concentrate on the 'state' of these collections, as much of the historical collection data gathered in the1981 should stand.

This assumption, however must contain a note of caution. A number of museums have closed in the intervening years. Some of those have transferred their collections wholesale to other organisations and therefore we would hope that associated data and importance is transferred along with the collection, this however may not always be the case. Equally, some collections have been mothballed, dispersed or have lost their specialist curator. The results of these

changes are not known, but the consequences for the 'status' and significance of these collections cannot be to their benefit.

Current political climate

Much has happened in the museum political spectrum since that first survey.

The Museums and Galleries Commission has re-branded itself and its activities twice as Re:Source and now MLA (The Museums, Libraries and Archives Council).

Regional museums services have followed suit and most have now taken on a wider remit, with strategic involvement in libraries and archives. They have also lost key 'services' in this re-alignment, with conservators and taxidermists employed by these regional bodies becoming an anachronism. These invaluable resources for smaller museums who could not directly employ such staff have been sadly missed by many.

The Museums Association's specialist committees concerning ethics, education, collections care have come and gone.

The Museums Documentation Association has re-aligned its activities. The MODES (Museum Object Data Entry System) database has left the direct control and support of the MDA and is being further developed by commercial consultants and other museums. Many other databases have come on to the market and been adopted by museums (and in some case left the market and the museum in a dreadful state). This may be good for pushing development of the products, but can only be seen as an obstacle to the once exciting, new and relatively universal ambition of the nation's collections available and on-line.

Museums have closed, their collections sometimes dispersed, sold or given to other already swamped institutions or simply closed to any but the most determined access. University departments have closed or been re-aligned away from 'traditional or pure' subjects to more industrial applications, with the resulting disposal of geological teaching and research collections.

But all change is not for the worst.

The Heritage Lottery Fund, in recent years, has enabled some museums to re-develop collections, displays, stores and in some case the entire museum itself. The English government 'Designation scheme' that recognises collections of outstanding national importance outwith the national museums has committed funding to improve the condition of, understanding of, and access to those collections lucky enough to be 'designated'. More recently, the MLA (or Re:Source at the time) commissioned a 'task force' to examine the state of museums in the English regions. (http://www.mla.gov.uk/action/regional/ren_report.asp) Following the published recommendations, three pilot regions benefited from this 'Renaissance in the Regions' funding, with the funding now being rolled out to the remaining regions. In 2005, the MLA launched a scheme to support the creation and development of 'Subject Specialist Networks'. The Geological Curators' Group submitted an application for such support to enable assistance to be offered to museums in need of 'specialist' advice, based on the findings in this report regarding the 'needs' of museums holding geological collections. Disappointingly, the group's application was declined.

The government supported free admission to national museums has created a flurry of interest from the media and visiting public alike, and many national institutions have seen a dramatic rise in visitor numbers since April 2001 in Wales and December 2001 in England.

In an article about the success of the 'free entry' scheme Maev Kennedy (2003), arts and heritage correspondent for the *Guardian* newspaper reported:

Scrapping admission charges at national museums has been a resounding success, leading to many more visitors, the government announces today. The culture secretary, Tessa Jowell, called the increase "a tribute to the energy and imagination of the museums themselves, and a clear rebuttal to those who say the people of this country are not interested in serious culture".

The great question still to be answered is whether free admission to the nationals is truly increasing museum visiting, or simply redistributing it. A survey this year for the Museums Association suggested that, overall, visiting is declining, with the impact of free admission felt most in the prosperous south-east where the major collections are concentrated, at the expense of the regions.

The big cultural attractions

Increase in visitor numbers in the year since free admission:

Natural History Museum, London from 1,657,124 to 2,993,581; 81% increase

National Museums and Galleries on Merseyside from 694,197 to 1,239,392; 79% increase

Museum of Science and Industry in Manchester from 292,952 to 476,830; 63% increase

Big publicity and renewed public interest in geology belies the current state of university teaching. Perhaps we will see something of a revival in coming years as we feel the influence of blockbuster films like Dante's Peak, Volcano, and the Jurassic Park series as the enthusiastic children grow to be the university course consumers and the still enthralled adults.

Kim Howells, Minister of State for Lifelong Learning, Further and Higher Education in the foreword for the Earth Science Education Forum for England and Wales Conference, 2004 (Unpublished conference report at time of going to print) said:

"Young people perceive sciences as difficult and irrelevant. In Earth sciences, this negative trend is of great concern because of their unique and special contribution to society and the economy. The Earth sciences are vital to every aspect of our lives, embracing all the other science disciplines.

We must create an exciting learning environment in which young people's curiosity can flourish. And provide them with the opportunities to enhance their learning and then play an active fulfilling role in the scientific community."

It is to be hoped that this need for continuing education in earth sciences is acted upon in the higher education facilities around the UK.

Television has fought over initiatives such as the Time Team vs. Dinosaur Digs; *Walking with Dinosaurs* vs. *Walking with Monsters* in the Ice Age; Aubrey Manning vs. Alan Titchmarsh. More people than ever before know what a 'palaeontologist' is thanks to the character *Ross* in the television series *Friends*!

Perhaps these have already had an effect on the direct funding for and attention paid to geology in some museums with large scale projects resulting in the whole-scale re-development of the *Geological Museum* in South Kensington, the building of the *Dinosaur Isle*, a new museum on the Isle of Wight and the creation of the science visitor centre *Dynamic Earth*, Edinburgh amongst others.

With the attainment of UNESCO World Heritage Site status for Jurassic Coast (East Devon and Dorset); and a bid recently submitted for Cornish Mining Sites; Heritage Lottery Fund support enabling the establishment of working partnerships for the Yorkshire Dinosaur Coast Project; Earth Heritage and Geo-conservation imperatives and the commitment to geological site protection of the RIGS network (Regionally Important Geological and Geomorphological Sites); the increase in interest in geo-tourism and even simple building-stone trails, it is becoming increasingly important to view geological collections in museums as *part of a whole*.

How geological curators' roles have changed

Over the past 20 years there have been significant shifts in the emphasis of natural history in museums. Even though geology and biology galleries remain the most 'popular' spaces for general museum visitors (evident in many visitor surveys carried out throughout museums and based on anecdotal evidence from front of house staff), consistent under-funding in the displays of these galleries often results in the squeezing out of these spaces that were once the backbone of many provincial museums. Nationally, as the role of the curator has itself changed, we are perhaps at a point in the history of museums, where we will note yet another shift.

For years funding has been reduced for local authority museums, and those museums with admission charges have had to compete with a growing leisure and visitor services market. Also with the increased demand for formal teaching to maintain attainment levels and links to specific key stages within the national curriculum, the museums have had to re-focus on what were once considered auxiliary services to be undertaken by the curator when the need arose!

Over recent years, with the advent of each education officer, marketing officer, exhibitions officer, registrar or conservator, curators have been heard to cheer or breathe a huge sigh of relief, as another perceived pressure has been removed from an overburdened role. However, as more auxiliary roles are created, it may be the turn of the curator to become an endangered species or seen more and more as a 'shop keeper' for the collections (and often referred to as an awkward one at that … not allowing access to every item, placing restrictions on use, filtering sensitive data, or simply not being able to find the appropriate material among the hundreds and thousands of individual specimens.)

Traditionally, geological (and other natural history) collections have been curated and stored in relation to their scientific or geographical meaning. This may mean petrology stored by basic lithological divisions such as igneous, metamorphic and sedimentary and further divided into granites, marbles, sandstones; or by geography with material sorted by quarry to maintain a full reference of rock types from that economically worked site. Palaeontology may be ordered by taxonomy or geological age for example, and minerals by their chemistry.

These classification systems have placed geology in an almost unique position, allowing collections to be stored in an organised manner and making such

collections readily accessible for the initiated. But these systems are only useful if:

1. established in the collections by a specialist curator
2. maintained as new material is acquired
3. managed by a curator with that specialist knowledge
4. accessed by such a person
5. specimens are put back in the right place!
6. continually updated to keep abreast with current research ...and perhaps significantly for smaller collections
7. there is enough material to make these systems worthwhile

For many museums, as geology has become harder and harder to fit into the national curriculum, and universities systematically cut earth science departments, it is perhaps a time to shift emphasis away from a purely scientific organisation of collections and look at a different approach.

As stated in Doughty's original introduction in 1981, Britain stands high in the history of geology and the earth sciences. More and more research is done each year (often, it has to be said by private researchers or by curators in their own time!) into the history of the collections held within our nation's storerooms. As more is re-discovered, the more important these early collections become. They have, after all, formed the backbone of our industrial world, our engineering feats, our economic wealth and our academic achievements in the world of earth science.

Background to the survey

Specific aims and objectives relating to this data gathering exercise can be found in the Geological Curators' Group's constitution.

These include:

- Provision of information and advice on all matters relating to geology in museums
- Surveillance of collections of geological specimens and information with a view to ensuring their well-being
- Preparation of a code of practice for the curation and deployment of collections
- Initiating and conducting surveys relating to the aims of the Group

Following the formation of the Geological Curators' Group in 1974 the group felt that a statement of position was needed to clearly mark a datum level against which changes in the museum geological collection culture could be measured and compared with other areas in the heritage community.

To this end, the group's recorder at the time, Phil Doughty, undertook an extensive survey to examine the holdings, condition, uses, services and scientific status of the geological collections held in UK museums.

Museums had been defined by the Museums Association in Conference in 1971 as: *"an institution where objects relating to the arts, sciences or human history are collected, adequately recorded, displayed, stored and conserved, and are made available for research and for the instruction and interest of the public or, in the case of some specialised museums, of a restricted public."*

This definition includes all national and local authority museums, society and trustee museums, display centres charging for admission, and the museums of educational institutions including colleges and universities which hold collections for reference rather than that viewed as expendable andused specifically for teaching.

It excludes all private and personal collections, which are by their nature inaccessible to the general public and not held by a self-sustaining institution.

The questionnaires for 2001 were sent out to the majority of museums referred to in this report towards the end of 2000, with a small number sent out in subsequent years as it became apparent that new museums had developed and others had been inadvertently missed out.

A number of museums that were sent the questionnaires failed to respond. A list of museums that had responded was published in the Geological Curators' Group newsletter *Coprolite* in November 2003 and the remainder were sent reminders between January and March 2004 by email where possible and by letter where no email contact was found.

The range in dates of response can be illustrated (where completed, the questionnaires were signed and dated by the person filling out the survey).

un-dated	28	**2001**	174	**2002**	11
2003	3	**2004**	42		

As is often the case, the initial response to the questionnaires was strong, resulting in a high proportion of returns in the first year, with returns tailing off in subsequent years as forms find their way to the bottom of in-trays, and a final flouish when a concerted effort to chase contributors was made.

2. Nature of collections

Current approximate population of the United Kingdom is 60,000,000; total land area is approximately 240,000 sq km or 94,000 square miles (www.encarta.org.uk); the 24 Hour Museum currently holds the details of over 3000 museums or heritage sites in the UK (considering all public museums, university museums, society museums, private institutes and independent museums may not all be represented in such a listing, 3000 is likely to be an underestimate of the total number of museums and similar organisations in the UK).

From those 3000+ museums in the UK, 246 museums stated that they held geological collections (258 museums responded to the survey, but 12 museums failed to give an indication of size of geological holdings). These figures give one museum holding geological material for every 1000 sq. km or every 250,000 people, with museum or institution holdings ranging from a few hundred to many millions of geological specimens.

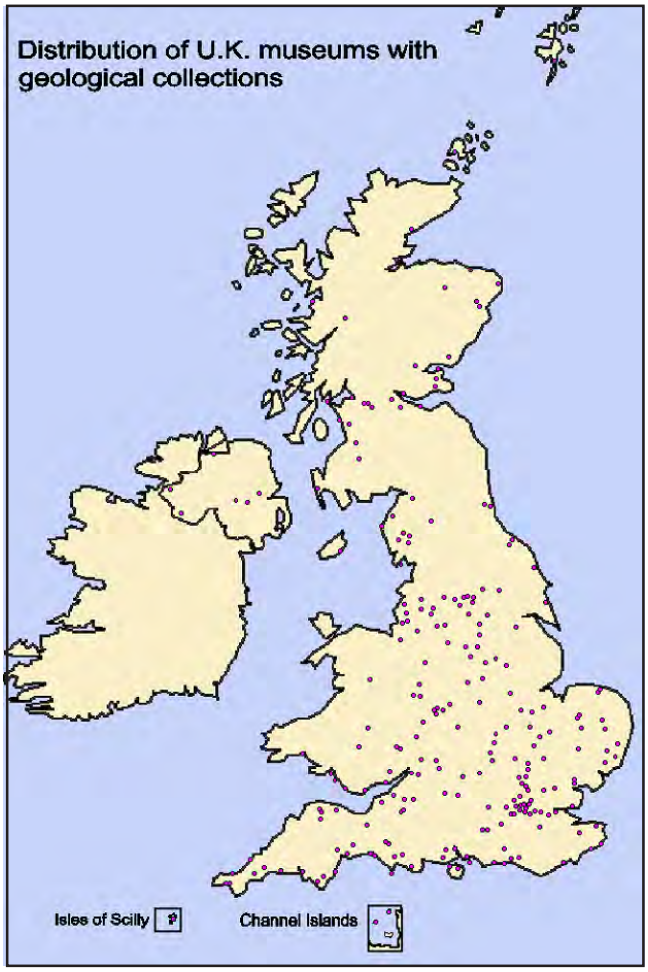

Figure 2.1: Geographical distribution of geological collections.

Geographical distribution of geological collections

The geographical distribution mirrors to some extent the concentration of national populations. The only sparse areas in England tend to be the north Pennines and Lincolnshire, with central Wales and Snowdonia having very few institutions holding anything other than small geological collections.

Scotland has a number of institutions throughout the central belt, with scattered museums along the east coast and into the Islands, and much of Central Ulster is without publicly accessible geology collections.

Though museums collections usually reflect their immediate surroundings, in the case of geology some of the 'richest' geological regions are without significant collections or indeed museums in which to house them. This has more to do with historical landscape than current tourist activity. Many of the areas devoid of collections were once relatively inaccessible to all but the hardiest of visitors, therefore the collections amassed from many of these regions are held in larger towns skirting the less accessible landscape for the edification of the surrounding populace!

National institutions, by their nature collect nationally and internationally, overriding the reliance on geography that restricts the collecting policies of the 'smaller' museums.

Cities such as Newcastle and Sunderland in the North East and Carlisle in the North West hold significant collections of Northern Pennines Minerals. Scunthorpe to the north and museums in the main towns or cities of the northern East Midlands to the west hold material from Lincolnshire.

Perhaps future collecting or display of collections should explore the opportunities represented in these areas where the tourist season is getting longer and the need for 'wet weather' activities is always pressing! Rather than view smaller museums struggling to open beyond the traditional tourist season as the poor relations of the larger ones, they should be looked on as an opportunity to reach a wider audience with collections already in existence. If these smaller museums cannot provide the environmental conditions for 'safe' display of specimens, consider assisting them to meet those requirements (that the larger museums may have only achieved themselves in the past decade or so) so that appropriate material could be displayed in the appropriate natural setting.

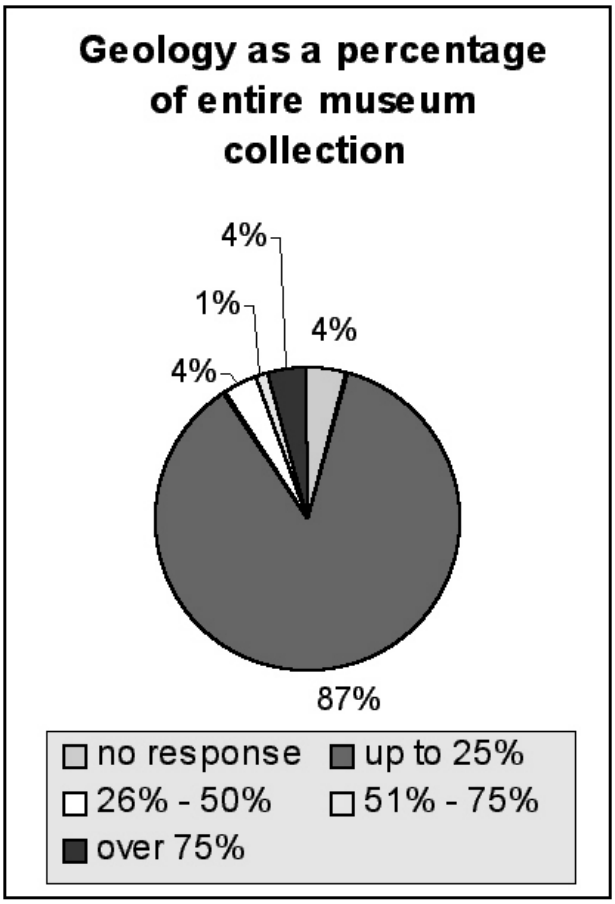

Figure 2.2

This may, in fact, be preaching to the converted as many museums are already taking this approach, but following the *Renaissance in the Regions* report (Evans, 2001) this may be flouting the spirit of the advice therein. One implication of the report was that museum resources are spread too thinly throughout the UK, with funding being chased by an ever-increasing number of smaller museums. The report goes on to suggest that it is perhaps time to review the future of those smaller museums.

It is perhaps forgotten that many of the so-called 'large local authority' museums were indeed once 'small' museums themselves, with only the enthusiastic subscriber to champion their continuance.

The Survey Questions

1. What percentage of your total museum collections are geology specimens?

up to 25% 223 museums in total:
98 museums with less than 500 specimens
24 museums with 501 to 1,000 specimens
37museums with1001 to 5,000 specimens
22 museums with 5,001 to 10,000 specimens
20 museums with 10,001 to 30,000 specimens
8 museums with 30,001 to 100,000 specimens
5 museums with 100,001 to 250,000 specimens
5 museums with over 250,000 specimens
4 museums with no indication of number of specimens

26% - 50% 10 museums in total:
1 museum with 501 to 1,000 specimens
3 museums with1001 to 5,000 specimens
3 museums with 5,001 to 10,000 specimens
1 museum with 10,001 to 30,000 specimens
2 museums with 30,001 to 100,000 specimens

51% - 75% 3 museums in total:
1 museum with less than 500 specimens
1 museum with 10,001 to 30,000 specimens
1 museum with 30,001 to 100,000 specimens

over 75% 11 museums in total:
6 museums with 30,001 to 100,000 specimens
1 museum with 100,001 to 250,000 specimens
4 museums with over 250,000 specimens

No response 11 museums in total:
1 museum with less than 500 specimens
1 museum with 30,001 to 100,000 specimens
1 museum with over 250,000 specimens
8 museums with no indication of number of specimens

The vast majority of museums hold geology as a small part of their overall collections (up to 25%) **(Figure 2.2)**. Interestingly, of those few museums holding over 250,000 geological specimens the percentage of entire museum holdings that geology represents sits at the two ends of the spectrum. In 4 such museums geology represents over 75% of the holdings, and in another 5, it represents less than 25% (one museum holding over 250,000 specimens did not indicate what percentage of the museum's holdings they represent).

2. How many specimens are in your geology collections?

The geographic distribution of collections shown in **Appendix 3** illustrates where the majority of specimens are held in the UK.

In some cases museums with large collections gave no response to the question regarding the size of their geological holdings and this slightly skews the results, and indeed in one case the response to the survey was received too late to include in the general body of this report and can be seen in **Section 10** along with an additional note referring to the Natural History Museum (Mineralogy Department), London.

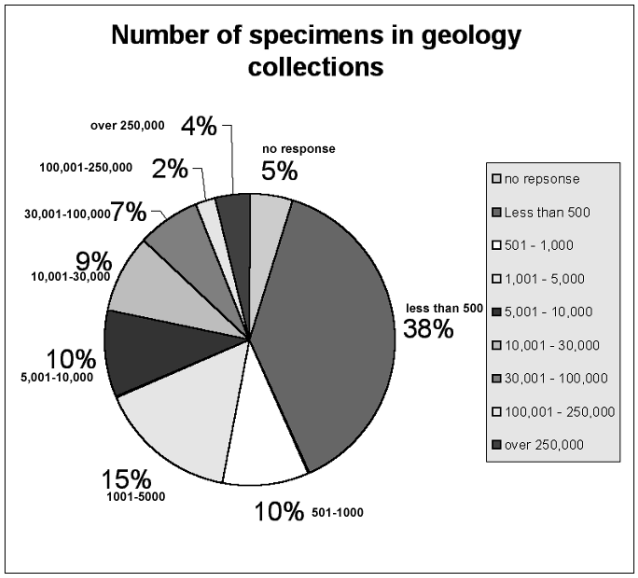

Figure 2.3: Size of collections.

National size of collections

In 1981 the *conservative* estimate for geological holdings was 3 million (excluding the Natural History Museum and the British Geological Survey collections).

Taking average figures for the size of collections from the range of responses available **(Figure 2.3)**, total figures for all those who indicated some estimate is 6,031,250. As this includes the Palaeontology department of the Natural History Museum, for comparative analysis the total estimated figure for UK (excluding London based national) museums is 5,731,250.

3. Approximately how many specimens have been added to the collection in the last ten years?

As the survey responses appeared at various times from 2001 to 2005, a 4 to 5 year period, this can only give an impression of the type of growth experienced throughout geological collections in the UK.

Taking average figures from the range of responses available 74,875 specimens were added in the last ten years: an annual increase of just over 0.1%. **(Figure 2.4)**

A note of caution: These figures do not necessarily represent true 'growth' by acquisitions new to museums. This growth may include large collections being moved from one institution to another, as certainly happens when one institution closes, or re-organises and rationalizes collections.

It would appear from the 'proportional growth of collections' **(Figure 2.5)** that the museums housing larger geological collections are also the fastest growing collections, and that the smaller collections seem to be stagnating through lack of expansion. One conclusion may be that little or no active collecting is being either undertaken or encouraged in the smaller collections.

The geographic increase in collections can be seen in **Figures 2.6 to 2.10.**

As highlighted in the 'threats and needs' in **Appendix 4**, not only is staff time a limiting factor in field collection, or indeed any form of active acquisition, lack of funding places a restriction on any development

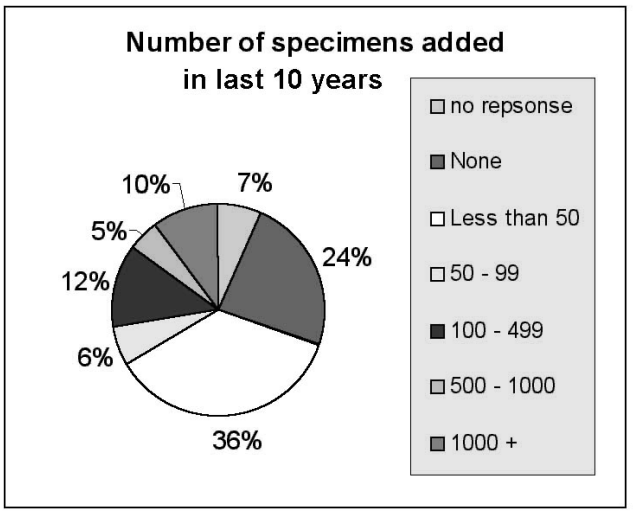

Figure 2.4: Numbers of specimens added to collections in the last decade.

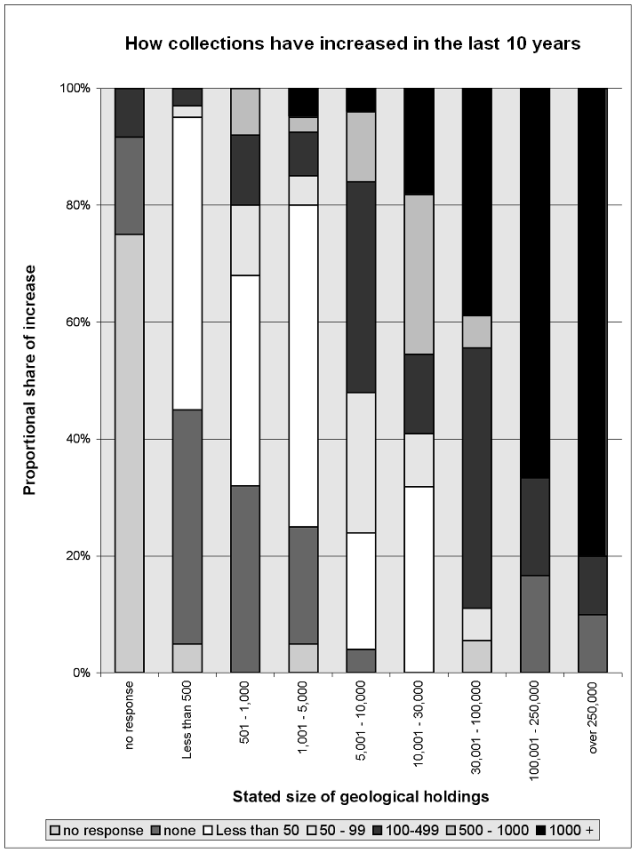

Figure 2.5: Proportional growth of museums.

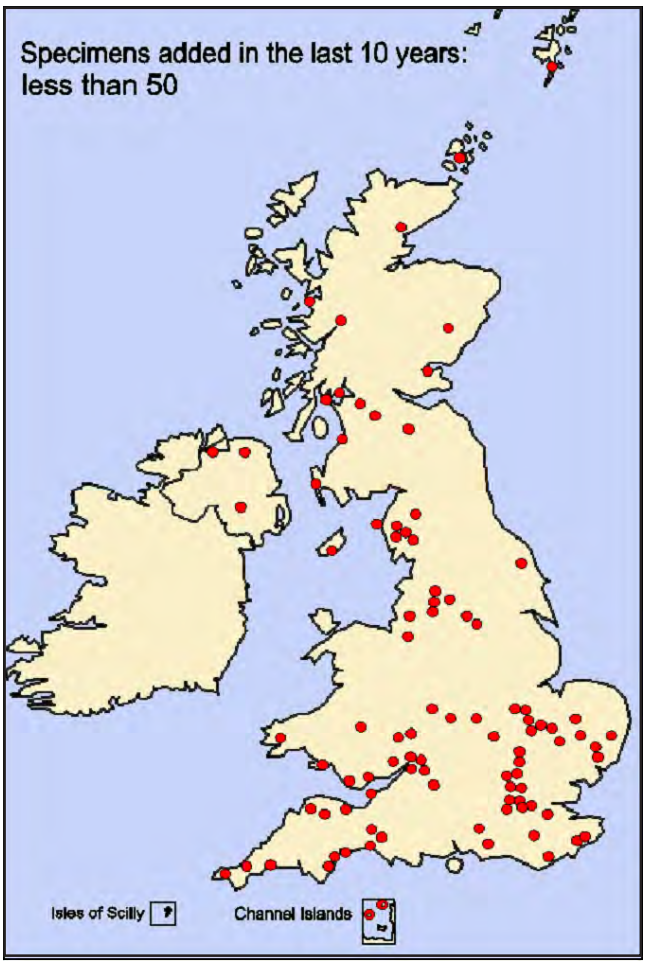

Figure 2.6

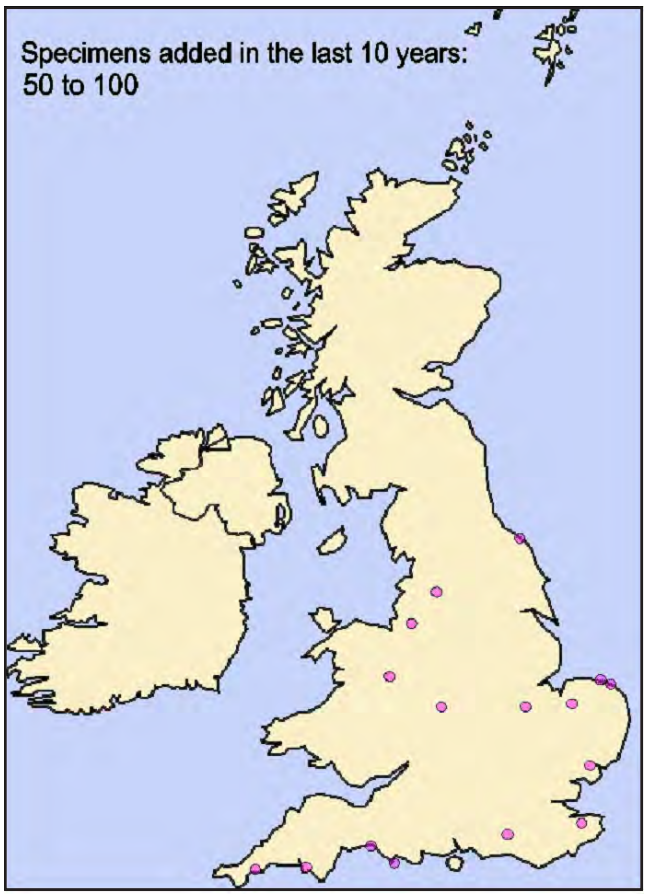

Figure 2.7

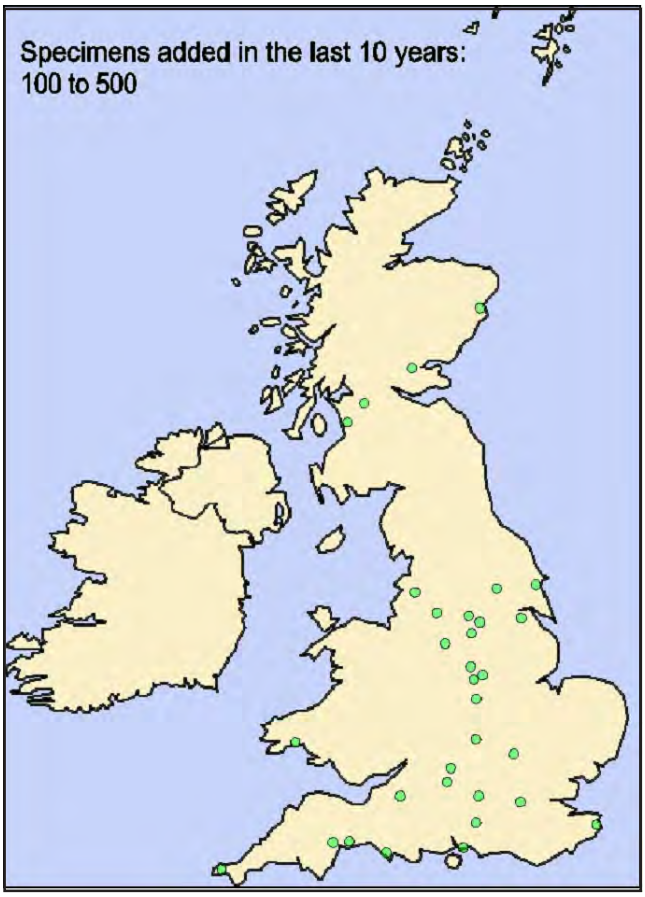

Figure 2.8

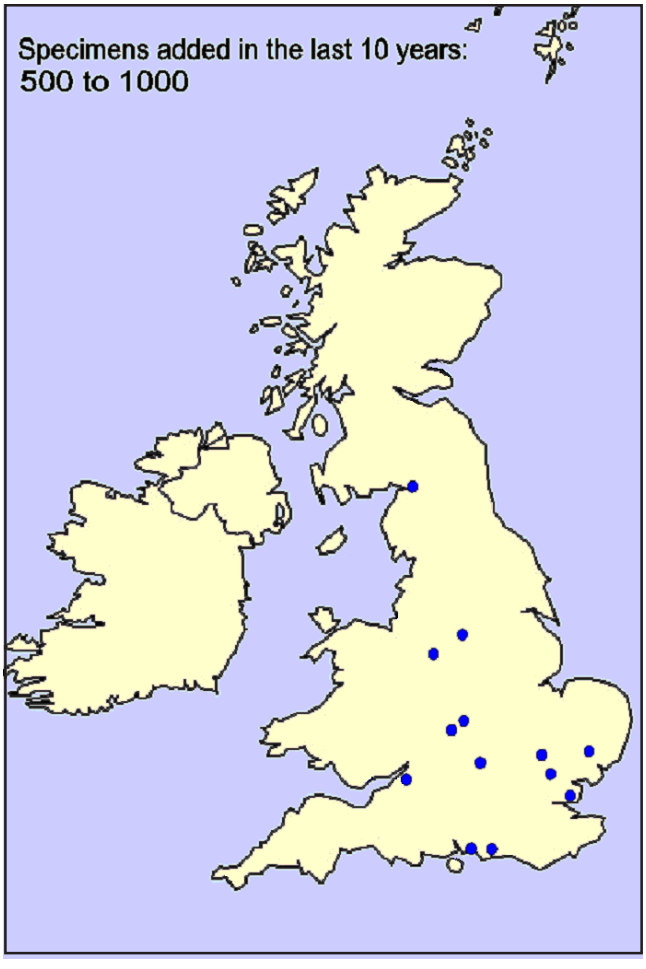

Figure 2.9

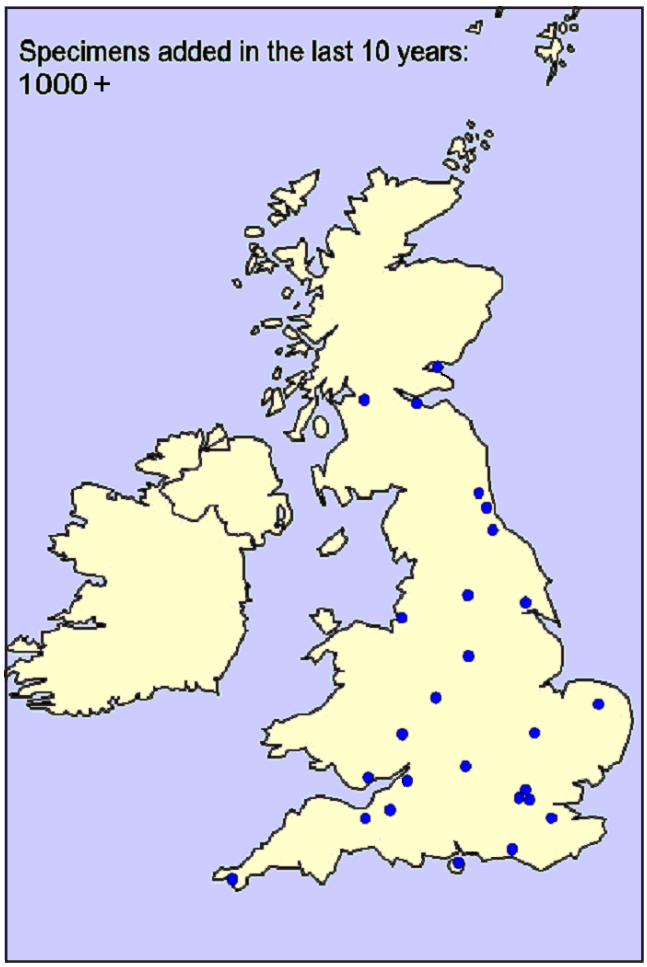

Figure 2.10

of the collection (including acquisitions). More crucially lack of space to expand will often result in museums refusing offers of donation, as the cost implications of creating storage space is a major delimiting factor. Space factors often have to be considered ahead of the time and cost implications of curation and long-term care.

4. Please describe the content of your collection indicating which category you have most of in ascending order from 1-5 (5 being the most, 1 the least and 0 being none at all).

Rocks; Fossils; Minerals; Thin sections; Borehole Cores; Other major holdings (please list and indicate size).

In the 1981 survey museums were asked:

"Does the collection contain rocks? – minerals? – fossils?"

This allowed for a general picture of museums and their contents, particularly when smaller museums would not necessarily be able to give a more detailed response

A similar question was posed in the 2001 survey (above), but asking museums to list in order of size such collections. It was also expanded to include thin sections and borehole cores.

The comparative results are detailed in **Figure 2.11**.

Further analysis is possible with the expanded question in the 2001 survey asking museums to list which of the content make up the smallest to largest proportions by assigning them a number from 0 (none) to 5 (highest).

The results, were however, confused as many museums responded by assigning the same number to a few of the types of collections such as:

Rocks **1***; Fossils* **5***; Minerals* **3***; Thin sections* **1***; Boreholes* **1**

This has made straightforward comparative analysis of how museum collections are comprised in each museum difficult. The following is an attempt to unravel some of this confused data.

Museums listed the following constituents as making up the largest proportion of their collection (the number refers to numbers of museums/institutions):

Rocks	35
Fossils	124
Minerals	34
Thin sections	6
Boreholes cores	8

This is an unsurprising result for palaeontology collections, but that thin sections and borehole cores make up the largest proportions of collections in 14 museums is perhaps of more interest.

Of those that listed **rocks** as the largest proportion the number of museums listing their second largest as:

Fossils	23
Minerals	11
Thin sections	0

	1981			2001				
Content of collection	Rocks	Fossils	Minerals	Rocks	Fossils	Minerals	Thin sections	Borehole cores
Number of museums	247	259	241	232	233	224	85	97
% of museums	87.9	92.2	85.8	89.9	90.3	86.8	32.9	37.6

Figure 2.11

Boreholes cores	1

Of those that listed **fossils** as the largest proportion the number of museums listing their second largest as:

Rocks	61
Minerals	67
Thin sections	3
Boreholes cores	5

Of those that listed **minerals** as the largest proportion the number of museums listing their second largest as:

Rocks	18
Fossils	16
Thin sections	0
Boreholes cores	5

Of those that listed **thin sections** as the largest proportion the number of museums listing their second largest as:

Rocks	0
Fossils	0
Minerals	1
Boreholes cores	5

Of those that listed **boreholes cores** as the largest proportion the number of museums listing their second largest as:

Rocks	1
Fossils	1
Minerals	0
Thin sections	6

Most museums listing thin sections as the largest proportion of their geological collections listed borehole cores as their second largest (and vice versa). Presumably this is due to the nature of the institutions' collections, concentrating on economic or mining geology, or survey material, rather than the 'traditional museum' hand specimens of rocks, minerals and fossils.

Other major holdings

Museums were asked to list other major holdings not included within the simplified types of collection (rock, fossil, mineral, thin section, borehole core).

Responses were disappointing, perhaps, in some cases, because of the scale of the material needing to be listed or in others the feeling that small portions of their collections were not to be described as 'major holdings'. The overall impression perhaps belies the rich libraries and photo-archives many museums hold, that relate specifically to their own holdings, and often to holdings in many other institutions throughout the UK (and beyond).

Other major holdings flagged-up that should perhaps be considered for inclusion in any future survey included:

- Building stones & bricks
- Cave fossils &/or archaeology
- Decorative stones & geology in applied art
- Gemstones
- Insectiferous amber
- Meteorites
- Micropalaeontology
- Models (mineral & structural)
- Photographs & glass plates
- Planetary geology
- Plaster casts
- Sediments

	1981		2001		
	number of museums holding:	% of museums holding:	number of museums holding:	% of museums holding:	% of museums who hold 'archival info':
geological correspondence			13	5.0%	10.5%
geological photographs	87	31.0%	55	21.3%	44.4%
geological maps	142	50.5%	50	19.4%	40.3%
manuscript material	56	19.9%	14	5.4%	11.3%
collectors notebooks/ catalogues			41	15.9%	33.1%
drawings, illustrations & related artwork			12	4.7%	9.7%
geological site information			10	3.9%	8.1%
mine plans			8	3.1%	6.5%
geological libraries			13	5.0%	10.5%
personalia of geologists	33	11.7%			

Figure 2.12: Archival holdings.

5. Do you have any other associated archive holdings eg maps, field notebooks, photographs? If yes: please give details.

124 of the 258 (48%) museums that responded stated that they held significant archives relating to their collections.

In 1981 the following question was asked:

"Does the collection include any of the following?
· Geological maps
· Geological manuscripts
· Personalia of geologists
· Collections of geological photographs"

In 2001 the style of questioning differed, allowing a broader interpretation of the question. Responses were rather varied and included the following, less than helpful comments:

"Too many to list"
"Various"
"Refer to website"

A number of museums attached additional sheets rather than list details. These were not referred to due to time constraints as many were extensive documents and in some cases copies of the institution's collection policy.

From the concise details of archival holdings the proportions of a variety of material can be broken down **(detailed in Figure 2.12)**.

6. To the best of your knowledge is any of the material you hold type, figured, cited material? How many type, figured or cited specimens do you hold?

1981

The type concept is complex and hedged in by internationally agreed rules but stated simply it says that any specimen or group of specimens which are discovered to be new to science, and which are named, described and published for the first time achieve type status. They assume paramount importance as name bearers and become the standards of comparison for all similar material subsequently discovered anywhere in the world.

Taking into account the response from the British Geological Survey in **Section 10** the estimated number of type, figured or cited specimens held in UK museums is just over 200,000. This is expected to be an under-estimate as it is dubious that museums without geological staff would necessarily be aware of the status of material in their care, and indeed a number of museums with such staff may have had little or no time to research or verify information that has perhaps been pushed to the backs of filing cabinets over years and changes in staff!

In 1981 specific figures regarding the number of type, figured or cited material were requested. Museums were asked if they held such material based on the categories of rock, fossil and mineral, therefore direct comparison is not possible **(Figure 2.13)**.

NOTE

112 museums have staff with geological backgrounds.
68 museums have staff educated to degree level in some aspect of geology.
64 (75.3%) of the museums holding type, figured or cited material has staff with geological background

(see ***Staffing*** section in **Section 7**)

Staff levels compared to importance of holdings

The number of museums in 1981 stating they held type specimens in their fossil collections was 62, with those holding figured and cited material around 70.

However in 1981 a comparison was made between the number of museums with type material and the numbers with 'qualified staff'. At the time it was estimated that half the museums holding type fossil material did not have 'qualified' geological curators to care for the collections.

11 museums in 1981 held figured rock specimens, and 24 held cited material compared with 'qualified staff' of 3 and 7 respectively, resulting in less than a

	1981							2001
Museums holding:	Figured rocks	Cited rocks	Type fossils	Figured fossils	Cited fossils	Figured minerals	Cited minerals	Type, figured & cited specs
Number of museums	11	24	62	69	70	15	22	85
% of museums	3.9	8.5	22.0	24.6	24.9	5.3	7.8	32.9
Museums with geol. staff	3	7	27	not recorded	not recorded	6	not recorded	112*

Figure 2.13: Status specimens.

third of museums holding figured and cited rock specimens employing geological curators.

A similar picture was seen in museums holding figured and cited mineral specimens. In 1981 15 museums housed figured mineral material, whilst 22 cared for cited specimens. 'Qualified' staffing in those museums holding figured and cited minerals was about one third, with approximately 6 museums employing geological curators.

One of the comments at the time was that as important mineral collections were few compared to important fossil collections, that the situation with qualified coverage when considering mineral collections was worst than even it first appeared.

1981

These figures tend to show again that important mineral collections in UK museums are few, and consequently each becomes more significant in terms of a national resource…….It must also be admitted that most geology graduates have insufficient mineralogy in their backgrounds to give a standard of professional service equivalent to that for rocks and fossils, so that even when a geologist is employed, the expertise may not match the importance of the collection.

At first, little may seem to have changed since 1981, however we must be aware that a number of geology degree courses and departments have closed their doors in the past 20 years, that of those still remaining active, many now turn their attention to hydrogeology, petroleum geology, soil and sediment analysis etc.. There are fewer and fewer 'geologists' available to work in museums, with more focussed industrial courses being offered. Taxonomy is rarely taught for more than one 'module', palaeontology, hard and soft rock petrology and mineralogy deal less and less with 'hand-specimens'.

This is by no means an issue that is the sole preserve of geology. Similar changes have occurred in biology, with now fewer British universities offering 'whole organism' biology, zoology or botany, preferring the 'industry' based environmental sciences, ecology, molecular biology, microbial sciences and plant & soil science.

Though these new directions perhaps pose little problem for research led organisations, whose collection curation teams are trained in-house, smaller museums have little or no time or the will for such training.

6 cont. Is there a published type catalogue? If yes, please give reference.

No response	75
No	158
Yes	25 (9.7%)

1981

Is there a printed catalogue of part or all of the collection available to the public?

Part 18 museums (6.4%)
All 3 museums (1.1%)

2001

25 museums out of 85 holding type material have a published catalogue of their collections. 16 of the 25 give a reference for their published catalogue.

Of these 16, 2 museums gave lists in extensive documents attached to the survey.

Published catalogues that were specifically referred to in the completed surveys included:

- 2 that are available only on-line
- 1 was published on microfiche
- 2 were published in the 19th century
- 3 published pre-1965
- 3 were published between 1975 and 1990
- only 5 are now less than 15 years old
- 1 was 'out of date' with no further reference given
- 1 was a 'collection survey and assessment report'

The all too obvious conclusion is that catalogues of these important holdings are few and far between. Even when they do exist they may often be out of date, unless those holding these specimens have had little or no 'significant' material added to their collections over the past century as publication dates for such catalogues range from 1890 to 2000.

Of those 61 museums with type material that do not have catalogues relating to their collections 3 were in the course of preparation at the time the survey was completed. Only one museum not holding type specimens gave reference to a published catalogue of specimens in their collection.

The enormous amount of time a curator must commit to producing an up-to-date taxonomic catalogue of type material, or important holdings is such that it will discourage all but the most active, and well supported. Coupled with the perception of a limited audience for such publications; it must make this type of publication extremely difficult to justify to museum managers with different priorities for 'performance indicators' and 'targets for audience development'.

On-line catalogues do reduce the ultimate financial burden of paper-publication, but also leave no lasting reference or snap-shot of a collection. These do however allow many different levels of information to be made available directly from museums collection

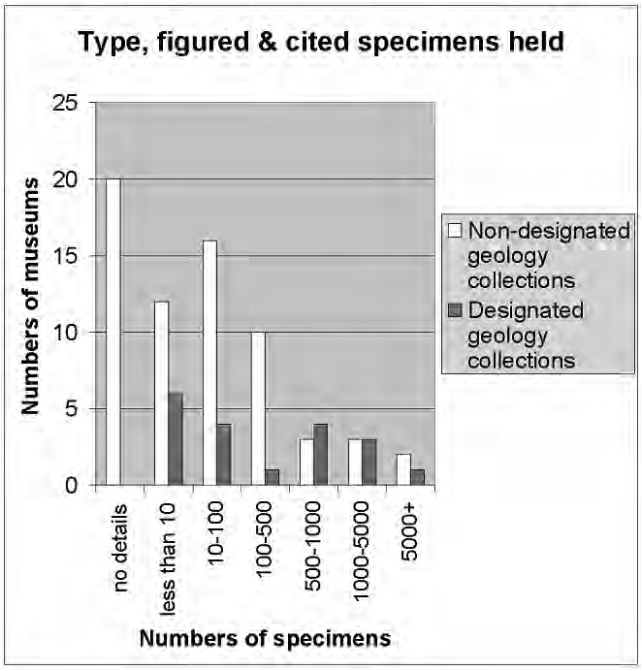

Figure 2.14

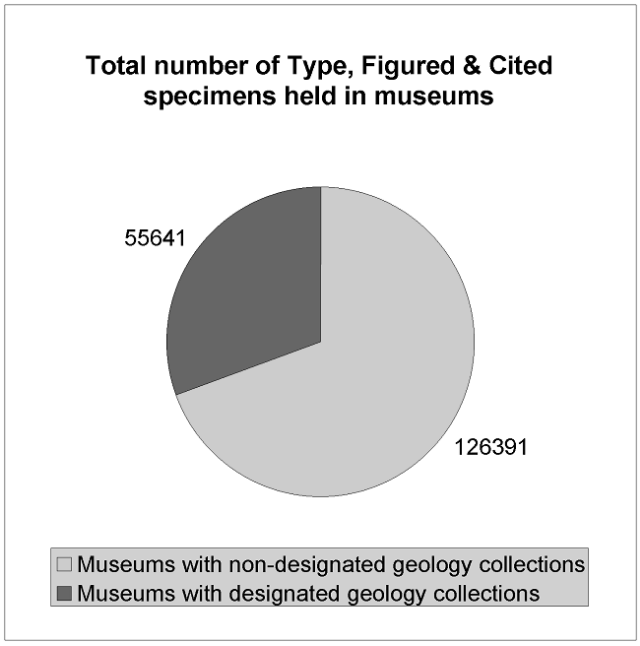

Figure 2.15

management databases to a variety of audiences. Children can just as easily access the data as academic researchers. The question, at this point, is what type or standard of information to make available.

With many museum databases in development, others based on a foundation of basic data-entry projects during the 1980s (for example Manpower Services Commission schemes), with often dubious results, and others not yet at basic inventory or collection level, the national drive for publicly accessible on-line collections is still a long way from its fruition (see **Section 3** for further discussion).

7. Do you have any publications relating to the collections?

No response	23
No	180
Yes	55 (21%)

Only 21% of museums have publications relating to their collections. This is perhaps disappointing to those interested in the nation's geological holdings. Without some form of promotion of the collections how can they be known, used, accessed and investigated?

10 of the 55 museums with publications relating to their collections do not hold type specimens.

The 203 museums with neither published catalogues nor other publications relating to the collections (or those that did not respond to the question) include:

3 holding over 250,000 specimens
2 holding between 100,001 - 250,000 specimens
7 holding between 30,001 - 100,000 specimens
4 holding between 10,001 - 30,000 specimens

It is possible that those completing the survey were unaware of publications, disinterested in completing the form, or unwilling to list the numerous publications their collections had given rise to. If this is not the case, it is extremely disturbing that these museums either have little time or little inclination to provide crucial intellectual access to their collections. As someone working in such a museum (10-30,000 specimens) I can vouch for the real wish to provide this level of access for public and professionals alike, however, as is the case in many museums, other priorities prevail. Further restrictions force a curator's attention elsewhere and any publications relating to the collections are often seen as a financial burden that cannot be borne. Online publishing will at least relieve some of that burden, but staff time will remain an issue (see **Section 7** for further discussion).

8. Is your geology collection designated?

20 museums have 'Designated' geological collections
18 of those have type, figured or cited material
2 designated museums have no type, figured or cited specimens

Figures 2.14 and 2.15 illustrate the comparisons of designated and non-designated museums and their type, figured and cited specimens held. It should be noted here that the 'Designation' scheme is only available to English non-national registered museums, and therefore does not include any collections held in Scotland, Northern Ireland, Wales, Channel Islands, Isle of Man, or indeed the Natural History Museum, London for example.

3. Documentation

Documentation of collections information refers not only to an inventory level accounting of specimens as required by *Accreditation*, but historical associations, acquisition details and transfer of legal title documents, correspondence relating to a collection or individual specimens, research relating to such, and fundamentally for geological specimens, the identification, specific field collection information and if possible the exact stratigraphy of their *in situ* origin. This documentation maybe in the form of a bound, handwritten accession register, card index, computer database or scraps of paper covered with semi-legible notes.

Good documentation forms the backbone to a collection, as much of the information associated with a specimen cannot be assumed or recovered once lost, mislaid or disassociated. Historical information may come as numerous specimen labels tracing the history of ownership of an item and illustrating how geological collections have changed hands and influenced research. There is always a danger of disposing of crucial clues to the history and provenance of an item as a curator re-organises and rationalises files, offices and stores.

One enormous advantage of a well constructed, used and maintained database is that all relevant information can at least be listed, referenced and identified in direct association with the individual specimen. In many museums this ability to keep a full history associated with specimens or collections is yet to be fully exploited.

1981: Documentation

All well regulated museums have an obligation to maintain their own register, index or some other form of record of all the specimens in their care. This may only repeat the collector's information but usually it includes far more. Many museums have more than one record and may employ classified indexes, usually based on the commonest subjects for which information searches are required. To discover something of the state of documentation of geology collections, the following question was asked:

"If there is a museum register, catalogue, card index or similar record, could you say whether it covers: the whole collection, most of the collection, less than half of the collection, no register or catalogue."

The number of museums in 1981 with the following 'levels' of documentation:

Whole collection	*43*	*15.3%*
Most of collection	*88*	*31.3%*
Less than half collection	*64*	*22.8%*
No catalogue	*41*	*14.6%*
Undeclared	*45*	*16.0%*

No data describing the general state of documentation in UK museums are yet available and so it is difficult to make comparisons, but without a comprehensive record of holdings it is impossible for a museum to publicize its holdings and to perform in its research and service roles. The most disturbing aspect of these figures is the 15% of museums with no catalogue; a figure elevated further when corrections are made for museums which made no declaration in answer to this question.

Further comparative work, in 1981, showed the relationship between level of documentation and size of museum holdings. The following is the contemporary comment:

The analysis against size of specimen holdings reveals that those museums with small collections are either completely documented or poorly documented. …. Small collections, particularly those numbering only a few hundred specimens, demand little time commitment to accession them completely and many museums find this a relatively simple undertaking, assuming adequate information linked to specimens, or having staff with expertise to provide the data. Many other small museums lack staff, quality material, or the expertise to document the collections possible explaining the large number with poor documentation.

In the largest size group, i.e. institutions with 10,000+ specimens, only 6% are completely documented, 60% are more than half covered but a third of this group, some 16 museums, are less than half documented. Since it is this type of museums which curates the great bulk of the nation's specimens this high proportion must cause some concern. The reasons here are too evident. Most of these collections are very large and have accumulated over a century or more during which time staff were numerically inadequate to cope with the influx or simply not academically competent to write the specimens records. In these cases backlogs of tens, or hundreds of thousands of specimens have accumulated. To process all the specimens in these cases would demand a major commitment of resources over many years.

Some of these collections, particularly those in universities, have no curatorial staff, or indeed any staff, with responsibilities for collections and here the problem is perpetuated.

Standards of documentation

Information regarding the standard of documentation *"must be strongly qualified by the unpublished findings of an Information and Retrieval Group of the Museums Association (IRGMA) investigation, which shows that most museum documentation is to a very low standard and the smaller museums tend to have the lowest of all. The recently introduced standards of the IRGMA scheme operating through the Museums' Documentation Association command wide respect with rapidly increasing adoption in museums, and at this level all museum documentation is in its infancy."*

These standards have subsequently been developed and adapted to form the basis of SPECTRUM, the museum *Registration* scheme and now *Accreditation* (see the MDA website for further details).

9. What proportion of the collection is documented to MDA standards (on computer or by any other method)?

See **Figure 3.1**

The Museums Documentation Association (MDA) has published national minimum standards for the documentation of collections and collections' information. These have been embodied in the SPECTRUM standard for documentation practice developed by the MDA and first published in 1994. Many of its procedures are fundamental to the Museum Accreditation Scheme (formerly Museum Registration Scheme). The new edition of SPECTRUM is available online from April 2005.

Proportion documented to MDA standards

up to 26% **56 museums in total**
31 (have computerised database)
25 (no computerised database)

26% - 50% **31 museums in total**
21 (have computerised database)
9 (no computerised database)
1 (no info about comp database)

51% - 75% **35 museums in total**
27 (have computerised database)
7 (no computerised database)
1 (no info about comp database)

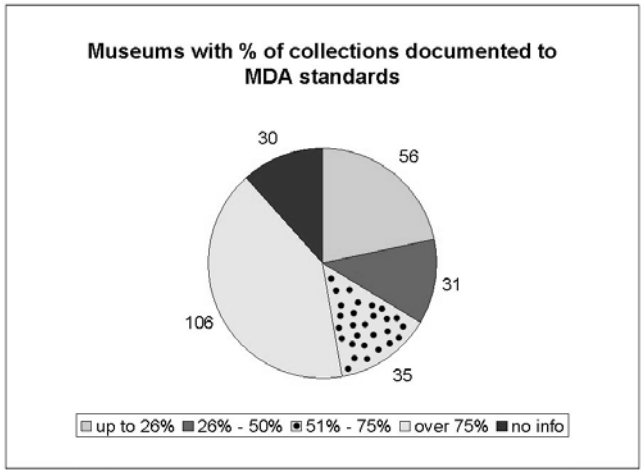

Figure 3.1

over 75% **106 museums in total**
78 (have computerised database)
27 (no computerised database)
1 (no info about comp database)

no info **30 museums in total**
5 (have computerised database)
13 (no computerised database)
12 (no info about comp database)

10a. Is the collection documented on a computerized database (such as Modes, Adlib, Access etc?)

Computerised database	162
No computerised database	81
No information	15

The proportion of museums with some part of their collections documented on computer databases is illustrated in **Figure 3.2**.

It is interesting that just fewer than 63% of museums currently use computer databases to record collection information. With more and more public access to

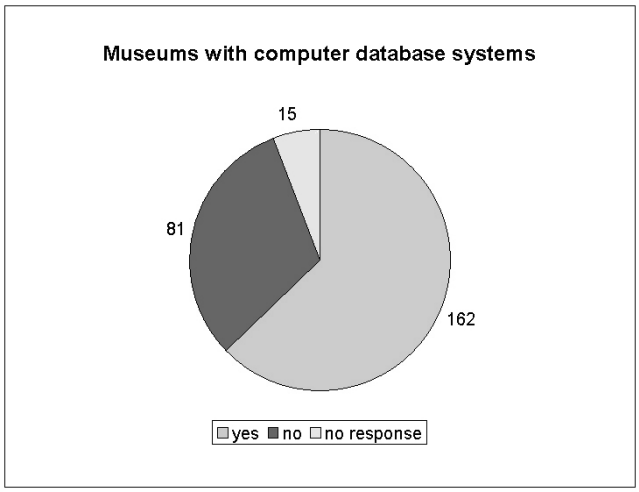

Figure 3.2

and familiarity with computer software and the internet, it is surprising that the percentage is not higher. These figures do not necessarily refer to museums with a **large** proportion of their collections documented in this way, it merely illustrates those museums **using** computer databases in some form.

10b. If so, what database do you use?

(The figure refers to the number of museums using the following database systems)

MODES plus	76
Access	26
Excel	3
Multimimsy	6
Adlib	9
A-Rev	2
Borland paradox for windows	1
CALM 2000	1
Catalist	3
Dataease	2
Collection by Vernon Systems	1
Datapoint	1
In house developed db	2
Filemaker Pro	2
Idealist	2
INCA	2
HUG	1
Lotus Approach	1
MicroMusee	4
MicroMusee: SNbase	2
"Microsoft"	3
Museum Inventory System	2
MOA catalogue for windows	1
Muscat	1
Cardbox	1
MPRO	1
?Opensight	1
Past perfect	1
Pcfile	1
Paradox	1
Quixis	1
Spectrum	1
STAR	1
Superbase	2
Texpert	1
Word Perfect	1
No information	6

It may be possible to condense a number of these systems further if more detail about the software was gathered, but some of the results appear to be misleading as 'Word Perfect' is a word processing package rather than a true database, likewise 'Excel' is a spreadsheet package and 'Microsoft' could be any of a suite of applications. Micromusee offer a

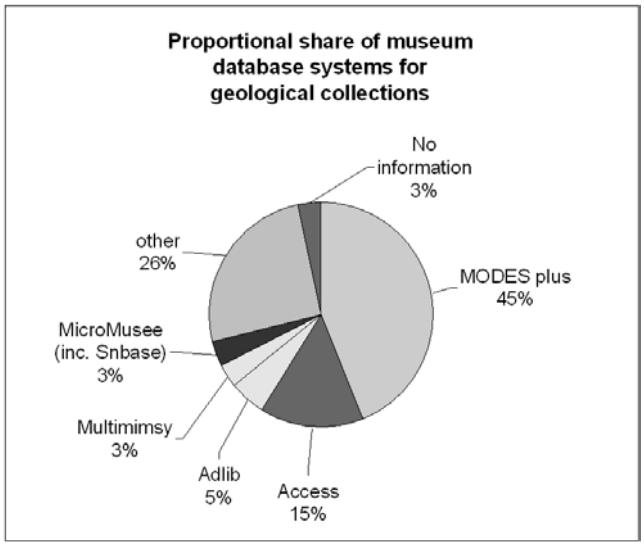

Figure 3.3

number of database packages with only SNbase specifically designed for *science naturelle*. Other database systems are unknown to the author.

By far the most popular systems are MODES+ and Microsoft Access with almost 46% of museums using computer databases using both MODES+ and a smaller but significant 15% using Access.

But it should be noted that *Access* is a software application and will take many different forms when designed by individual users. MODES and other databases designed specifically for museum object records have standard structures (often with some adaptability to cope with data not easily accommodated), and form a fundamentally consistent framework for records held.

The proportional share of database systems used in UK museums holding geological material is illustrated in Figure 3.3. Those systems with greater than 5 museums using them to document collections are individually named, the remainder are contained in the 'other' category.

Perhaps further work should be undertaken on a nation-wide level, to re-examine the future for collections databases in UK museums. With hopes for information sharing and national collections archives, the disparate nature of databases in the UK is troubling. This, it must be stressed, is only a part of the picture, as this survey only concerns itself with geological collections held in the UK. As MODES was devolved to a non-MDA-supported group many museums looked elsewhere for what seemed faster developing systems. Compatibility of databases is currently a rising concern for those working between institutions and will become more of an issue as 'regional museum hubs', 'subject specialist networks'

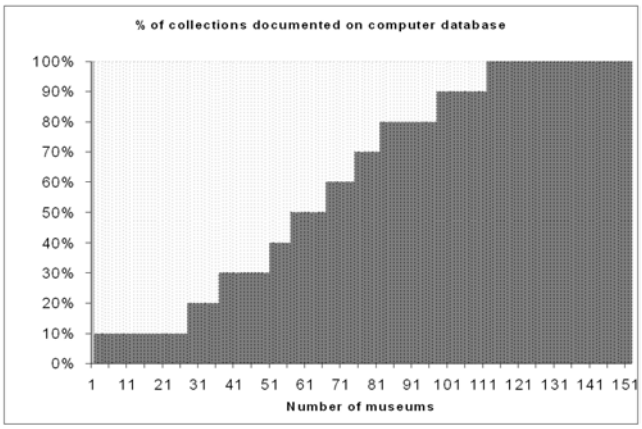

Figure 3.4: [The numbers along the x-axis refer to an individual museum and have an arbitrary allocation. The results are arranged in ascending order of levels of computerised documentation.]

and other partnership projects develop in the next few years.

10c. What proportion of your collection is on the database?

Of the 162 museums that use computerized databases to document their collections, the following figures are the proportions of the geological collections held that are documented in this way (see **Figure 3.4**):

No further details	11
Less than 10%	26
10% - 20%	9
20% - 30%	14
30% - 40%	6
40% - 50%	10
50% - 60%	8
60% - 70%	7
70% - 80%	16
80% - 90%	14
over 90%	41

One museum that does not have a computerised database claimed to have 80% - 90% of collections computerised and available for public access?!

10d. Is all or part of the database available to the public?

Of those museums (162) with computer databases for collection management 26 were available for public access.

The majority of these (18) had approximately 50% or more of their collections on the database, 3 museums had less than 20% of the collection on a publicly accessible database and 5 gave no response to the question regarding % of collection catalogued on computer database.

Most databases are primarily viewed as collection management tools. Many are extremely difficult for an un-trained user to access and interpret. In a number of cases, the historical methods of data capture that created the content of these databases are unreliable and in extreme cases inaccurate or in fact the specimens listed no longer exist!

Much work may be needed to make museum collection management databases user-friendly and reliable. Many are opting for a specific and separate 'public access database', often in the form of a selection of specimens accessed via web pages.

This may be the most workable and achievable option for the majority of museums, and would allow details of specimens to be added as and when the curator is confident that the records are correct. As most curatorial work is undertaken on a 'project' basis this type of outcome could be seen as an intellectually accessible learning product for what curators may fundamentally see as a purely 'curatorial' project.

10e. Is any of your collection digitised? If so what proportion?

Less than 10%	21
10% - 25%	5
25% - 50%	4
50% - 100%	3

One museum's response was "fossils".

It is clear that a number of museums see the digitisation of collections as a way to increase access to the information and at some level, the specimens they hold (see **Appendix 4: Threats & Needs** for further evidence). It is also a valuable collections management tool in its own right, allowing the curator to see at a glance the condition of the specimens at a particular moment in time, access the object on a visual level for easy reference, assess suitability of numerous items for display, loan, use etc. without having to root through stores and to reliably and definitively identify a specific object based on its image.

However to achieve most of these outcomes the end goals need to be kept in mind when undertaking a digitisation project. Some digitisation seems to be undertaken to provide public access without really considering any other possible uses or future needs, therefore creating images that will have a very limited use for such a major time investment.

Simple decisions, such as colour and size scales to be visible in the image, clear associated accession numbers alongside the specimens (these can be cropped later if necessary), consistent lighting and backgrounds, consistent resolutions and image sizes,

securing 'raw' images and only editing copies, ensuring copies kept on up-to-date media and in multiple sites, use of compressed vs. uncompressed image files (that may or may not be supported by software in the long term), how, where and why the images are to be used and stored, all vie for attention when undertaking a digitisation project and lack of attention to any one of these crucial considerations may result in a project that needs to be repeated in its entirety in the next 5 to 10 years.

One issue that museum curators are aware of is that technology, and therefore those museum departments dealing with that technology, changes so rapidly that technology dependant projects will be out-dated very quickly. Most curators have an awareness of the long-term legacy of any decisions they take, as this is the core of their roles. Using new and untried technology and 'jumping on bandwagons' to chase funding opportunities but still achieving the best, most useful and durable outcomes for the collections is a difficult balance to achieve.

Digitisation of specimens is time consuming, but potentially invaluable for managing large collections and allowing some level of access to the huge proportion of collections held in store.

11. What other systems of documentation do you use for the geology collections? (i.e. Card indexes, handwritten catalogues, object entry books).

A number of other documentation systems were listed by museums. These have been simplified and listed below. A number of systems may be used in one museum, and it could be assumed that some museums use these systems in some form, but as there were few prompts given in the survey, they may have failed to list **all** systems currently in use.

A permanent record of accessions is one of the requirements of the current museum registration/ accreditation scheme. Traditionally this has been in the form of a handwritten or typed accession register/ day book/bound hardcopy of database etc. It would be interesting to further investigate the methods used in those museums not listing this type of documentation system.

No information	39
None	3
Card index	142
Handwritten files/catalogues	86
Accession book	65
Entry forms	22
Donor files	7
Object history files	6
Object entry / day books	4
Gift forms	1
Microflim/microfiche	1

4. Storage

12. Is the main proportion of your collection inside the museum (or other building) or within an offsite store?

Inside museum	176
Annexe	7
Offsite store	54
University department	3
Resource centre	2
No response	16

There were some very individual and detailed answers to this question. These responses were simplified to give an indication of the usual sites for geological collections. The majority (176 or 68%) of museums store the major proportion of their geological specimens within the museum building itself, whilst what were determined as 'off-site' stores accounted for the major storage facilities in 54 (or 21% of the) museums holding geological material.

With space restrictions as one of the limiting factors to active collecting, it is perhaps unsurprising that a number of institutions expressed an expectation to develop offsite stores within the next few years. The pressure on museum buildings from increased acquisitions in all subject areas and from display space, education facilities etc., will only add to the pressure for moving collections 'off site'.

Perhaps what is significant at this date is the relatively low proportion of museums using off site stores. This is particularly relevant when looking at the institutions holding larger collections:

Museums holding 30,000 to 100,000 specimens

Stored inside the museum	11
Museum annexe	1
Offsite store	5
No response	1

Museums holding 100,000 to 250,000 specimens

Stored inside the museum	15
Museum annexe	1

Museums holding over 250,000 specimens

Stored inside the museum	5
University department	2
Offsite store	3

13. Please describe how your collection is stored. Please indicate the proportion of the material stored in each way. N.B. this can add up to more than 100%.

A conservation grade boxes

90% and over	66
50-89%	39
20-49%	14
less than 20%	17
none/no response	122

Conservation grade boxes would imply acid-free card or appropriate inert plastics, however many museums may store material in acid-free or low-acid boxes that will become acidic with time and therefore need to be re-tested and replaced as necessary.

B non-conservation grade boxes

90% and over	34
50-89%	26
20-49%	20
less than 20%	32
none/no response	146

This compares with the non-specific question in 1981:

How is the collection stored?: in cardboard boxes.

This did not differentiate between conservation grade and non-conservation grade card boxes, but gives a broad comparison.

1981

No. museums using cardboard boxes 139

2001

No. museums with over 90% of specimens stored in some form of box 100

C crates

90% and over	7
50-89%	1
20-49%	8
less than 20%	32
none/no response	210

In 1981:

How is the collection stored?: in crates & packing cases.

1981

No. museums using crates 54

2001

No. museums with over 90% of specimens stored in some form of crate 7

The huge reduction in the past 20 years with specimens stored in this way perhaps reflects the concerted effort many museums have made to steadily improve storage and ease of access to their collections. Whilst crates and packing cases are often ideal for the storage of large individual specimens, storing a number of specimens in one box can lead to either damage through abrasion, or damage through over wrapping to protect against abrasion, over handling to view specimens, and difficulty in monitoring the condition of specimens stored in such a way.

D roller racking

90% and over	27
50-89%	13
20-49%	7
less than 20%	11
none/no response	200

Roller-racking was not one of the available options listed in the 1981 survey. A number of museums do use this space saving option and it is a valuable way of increasing potential storage space. It does however restrict access to the collections within stores, (when more than one person needs to access racks that are mutually closing) can result in narrow or awkward aisles and can cause difficulties in environmental control if air circulation is a problem for dehumidification etc. It is also a substantial financial investment, when well thought through re-organisation of stores can give often-dramatic results.

E shelving

90% and over	49
50-89%	21
20-49%	18
less than 20%	44
none/no response	126

One of the options for response in 1981 was *'shelved cabinets'*. This differs from the 2001 survey and could be confused with the 'roller racking'. Comparisons, therefore, have not been drawn.

F drawered cabinets

90% and over	50
50-89%	38
20-49%	21
less than 20%	20
none/no response	129

This was listed as the most popular way to store geological collections in 1981 with 159 museums (56.6%) using drawered cabinets. In 2001, 129 (50%) museums use drawered cabinets to store all or part of their collections, but only 88 (34%) store more than 50% of their specimens in this way.

G in or under display cases

90% and over	9
50-89%	4
20-49%	3
less than 20%	8

As the style of museum galleries and displays changes, fewer collections are held in the once ubiquitous museum cabinets with glass-top cases and locked cupboards underneath. A number of museums are now removing collections from these types of display-storage, but keeping the cabinets for display to maintain the historic atmosphere of their exhibition spaces. This is particularly important where public galleries have little or no environmental control and are in some cases directly accessible from external doors, propped open on busy summer days.

Presumably the number of museums 'storing' collections on display would appear to be much higher if asked the specific question: What proportion of your collection is on display?

H other methods

Other methods of storage were variously listed as:

Glass bottles
Plastic trays
On floors
On pallets
Wall mounted
Above units

14. Are individual specimens stored in conservation grade trays? If so what proportion?

Yes	105
No	134
No response	19

Of those museums using conservation grade boxes or trays:

19 museums gave no response to the proportion stored in such packaging
21 museums had between 1 – 25% of individual specimens stored in conservation grade boxes or trays.
17 stored between 26-50% of specimens in this way
13 stored between 51-75% of specimens in this way
35 stored between 76-100% of specimens in this way

In each of these cases the majority of those (74%) storing their specimens using conservation grade trays had re-stored their collections to some extent during the last 10 years.

More significantly, perhaps, of those who do not use conservation grade trays to store individual specimens or who gave no response (153 museums), 70 had re-stored all or part of their collections in the past 10 years. The question must arise, "was this suitable packaging?" or have these museums spent often

precious budgets on poorer grade materials, either due to budgetary pressure, lack of advice/knowledge or other factors?

15. What proportion of individual specimens are packaged with plastazote or tissue?

123 museums have no individual specimens stored in plastazote or tissue.

Of the remaining 135 museums that have used either plastazote or tissue to store individual specimens:

58 museums had between 1 – 25% of individual specimens stored with plastazote or tissue
27 stored between 26-50% of specimens in this way
12 stored between 51-75% of specimens in this way
38 stored between 76-100% of specimens in this way

In each of those museums who use tissue and/or plastazote, the majority of those (70%) had re-stored their collections to some extent during the last 10 years.

Plastazote is a closed-cell inert foam of varying densities. In geological collections it is often cut to fit around specimens to form a snugly fitting cushion or a cavity to hold individual objects. It was assumed when designing the 2001 survey that *tissue* would refer to acid-free or low-acid tissue paper. This is often used to create *nests* to stop specimens suffering from contact abrasion and damage in drawers and boxes. Acid-free tissue becomes acidic over time and therefore will need to be replaced as part of a rolling program. It will also become acidic if it is in contact with acidic items such as wooden drawers, acidic boxes and even acidic specimens.

16. Has all or part of the collection been re-stored in the last 10 years? Please give details.

143 museums (60% of those who responded) stated that their geological collections had been re-stored to some extent in the last 10 years. (18 museums did not respond to this question.)

Move or new store	37
New shelf system	14
New boxes/ trays	45
Re-display	5
Using volunteers	6
Plastazote	17
Acid free tissue	12
New cabinets	13
Radio-active store	1
Continued upgrade	20
Archive store	3
Complete re-pack	33
Micro- environments	6
Lost store/ museum	2

17. Please describe if possible, what system of classification is used to arrange material in store. For example is it based on a geological system or taxonomic hierarchy or some other administrative system?

56 museums did not respond to the question, including one museum holding between 10-30,000 specimens.

44 museums stated that they used no scientific system to order their collections, including one museum holding between 10-30,000 specimens.

29 museums stated that they used basic geological classification, often listing rocks/minerals/fossils as the main defining factors but giving no further details including one museum holding between 10-30,000 specimens and one holding between 30-100,000 specimens.

2 museums store their specimens by basic geological classification or original 'collections' only.

A number of other museums (at least 20) also use original or historical collections as a part of their storage system

One museum holding over 250,000 specimens used a number of classification systems for storage including type, figured and cited material in order of publication date, and some material stored by specific environment required for preservation.

Of the remaining 126 museums a variety of classification systems are used and will obviously be dependant on the size of collection and indeed the number of specimens in each of the basic geological classes of rock, mineral and fossil.

In ***1981*** a simpler question was put:

Are the specimens stored according to some system/s?

No response	35 (12.5%)
No	95 (33.8%) (4 of which held over 10,000 specimens)
Yes	151 (53.7%)

Compared to **2001**

No response	56 (22%)
No	44 (17%) (1 holding over 10,000 specimens)
Yes	158 (61%) (2 holding over 10,000 specimens using simple rocks/ minerals/fossils system)

The most significant change in the results from 1981 to 2001 is that fewer museums responded to the question in 2001!

Noteworthy systems of classification

A few interesting, apparently sensible and/or confusing responses are highlighted below. These indicate the 'systems' used for sorting and storing geological collections of varying sizes in museums throughout the UK.

Less than 500 geological specimens
- Typographically
- By weight – heaviest at bottom, lightest at the top

1-5000 geological specimens
- Space and size! Master copy of computer printout gives locations

5-10,000 geological specimens
- Alphabetic

10-30,000 geological specimens
- Minerals arranged by Geology completely
- Space availability

100-250,000 geological specimens
- It is not arranged according to any particular system, very systematically or scientifically, but loosely based on geological system

Historical collections

Running throughout the different classification systems, many museums find it advisable to separate out particular collections amassed or collected by an individual. These 'historic' collections often relate to one publication, or one prominent local or national figure. With the capacity for computerised collections databases to search for specimens based on taxonomy, stratigraphy and composition, more emphasis is now being placed on the historical context of the entire amassed collection. Material that was once part of 'general' collections is often now being physically separated to allow a 'named collection' to be viewed in its original context.

'Historical collection' as a means to 'sort' geological specimens

over 250,000	2
100,001 - 250,000	1
30,001 - 100,000	4
10,001 - 30,000	4
5,001 - 10,000	1
1,001 - 5,000	4
501 - 1,000	2
Less than 500	2
No info	0

Total number of museums subdividing all or part of their geological collections based on their historical associations such as 'amasser' or 'field collector' is 20.

Fossil classification

Where fossils were further sub-divided the following systems were used to allow systematic classification and storage. In some cases multiple systems are in use, such as stratigraphic or period groups, further sub-divided into taxonomic orders, or local, British and non-British collections separated from the main taxonomic series.

Total number of museums using:

Stratigraphy/age systems	65
Taxonomy	69
Geography	11
Admin number	34

10 museums holding larger collections **(over 250,000)** use the following systems to 'sort' the fossil specimens:

Stratigraphy/age systems	7
Taxonomy	9
Geography	2
Admin number	0

8 museums holding larger collections **(100,000 to 250,000)** use the following systems to 'sort' the fossil specimens:

Stratigraphy/age systems	5
Taxonomy	2
Geography	1
Admin number	0

What is perhaps surprising is only 2 museums of the 8 holding between 100 to 250,000 specimens use taxonomy to classify their fossil material. It must be remembered however, that some of these museums, may have relatively small palaeontology collections when compared with mineralogy or petrology.

Of the remaining museums there is a significant increase in the number of museums using administrative number (accession, specimens, collection etc) to 'sort' the collections in those museums with less than 10,000 specimens and with very few museums differentiating specimens based on geography.

In all museums, the predominant systems for fossil classification are unsurprisingly taxonomy and stratigraphy. Any museum can sort its collection based on an understanding of taxonomy as an ammonite cannot be anything other than an ammonite and can present its detailed taxonomy to anyone who can decipher it. But, unless data is recorded with specimens in some detail between field collection and museum stores, stratigraphy cannot be defined with any great accuracy post-excavation, by someone other than an 'expert' or without advanced techniques for analysis.

Stratigraphy as a means to 'sort' fossil specimens

30,001 - 100,000	11
10,001 - 30,000	12
5,001 - 10,000	11
1,001 - 5,000	5
501 - 1,000	3
Less than 500	4
No info	1

Taxonomy as a means to 'sort' fossil specimens

30,001 - 100,000	11
10,001 - 30,000	14
5,001 - 10,000	8
1,001 - 5,000	9
501 - 1,000	4
Less than 500	4
No info	1

Geography as a means to 'sort' fossil specimens

30,001 - 100,000	1
10,001 - 30,000	1
5,001 - 10,000	1
1,001 - 5,000	0
501 - 1,000	1
Less than 500	2
No info	0

Admin number as a means to 'sort' fossil specimens

30,001 - 100,000	0
10,001 - 30,000	1
5,001 - 10,000	3
1,001 - 5,000	7
501 - 1,000	4
Less than 500	7
No info	1

Mineral classification

Where individual specimens were divided beyond 'mineral' the following systems were used to allow systematic classification and storage. In some cases multiple systems are in use, such as chemical composition and geography.

Total number of museums using:

Hey's Mineral Index	30
Chemical groups (unspecified ref.)	24
Geography	8
Admin number	26

10 museums holding larger collections **(over 250,000)** use the following systems to 'sort' the mineral specimens:

Hey's Mineral Index	5
Chemical groups (unspecified ref.)	3
Geography	1
Admin number	0

8 museums holding larger collections **(100,000 to 250,000)** use the following systems to 'sort' the mineral specimens:

Hey's Mineral Index	3
Chemical groups (unspecified ref.)	0
Geography	0
Admin number	1

Again, perhaps the surprising result (c.f. fossil classification) is that only 3 museums of the 8 holding between 100 to 250,000 specimens use some form of chemical classification systems to sort mineral material. Museums that failed to indicate a system for sorting their mineralogical specimens, presumably have very little material?

Of the remaining museums there is, again, a significant increase in the number of museums using administrative number (accession, specimens, collection etc) to 'sort' the collections in those museums with less than 10,000 specimens and with very few overall differentiating specimens based on geography.

In all museums, the predominant system for mineral classification is some form of chemical grouping. The only one consistently referred to by name was Hey's Mineral Index (Clark, A.M. 1993) now in its 3rd edition (and currently out of print, though second-hand books can be acquired).

Chemical groups **[those specifying Hey in brackets]** as a means to 'sort' mineral specimens

30,001 - 100,000	10	[5]
10,001 - 30,000	12	[10]
5,001 - 10,000	12	[4]
1,001 - 5,000	6	[2]
501 - 1,000	1	[0]
Less than 500	1	[0]
No info	1	[0]

Geography as a means to 'sort' mineral specimens

30,001 - 100,000	2
10,001 - 30,000	1
5,001 - 10,000	1

1,001 - 5,000	0
501 - 1,000	1
Less than 500	2
No info	0

Admin number as a means to 'sort' mineral specimens

30,001 - 100,000	1
10,001 - 30,000	1
5,001 - 10,000	3
1,001 - 5,000	5
501 - 1,000	6
Less than 500	9
No info	0

Rock classification

Where petrology collections were sub-divided the following systems were used to allow systematic classification and storage. In some cases multiple systems are in use, such as lithology and geography, or geography and accession number.

Total number of museums using:

Lithology	42
Stratigraphy	9
Geography	14
Admin number	27

10 museums holding larger collections **(over 250,000)** use the following systems to 'sort' the rock specimens:

Lithology	4
Stratigraphy	1
Geography	3
Admin number	2

8 museums holding larger collections **(100,000 to 250,000)** use the following systems to 'sort' the rock specimens:

Stratigraphy/age systems	2
Taxonomy	1
Geography	1
Admin number	1

'Geography' does not feature very strongly in the storage systems for petrology. Perhaps this is due to the fact that many smaller museums would only collect in a specific geographic area, as collecting policies restrict such divergence from immediate locale. Also, it would seem, that few museums collect representative lithologies from one site, often due to limitation on storage space and from an awareness of potential level of use for that material. Unless there is a particular economic imperative for geographically representative petrology collections (such as historically used decorative or building stones from specific quarry sites) few museums would ever expect to access their collections in this way.

Lithology as a means to 'sort' rock specimens

30,001 - 100,000	6
10,001 - 30,000	11
5,001 - 10,000	9
1,001 - 5,000	4
501 - 1,000	3
Less than 500	3
No info	0

Stratigraphy as a means to 'sort' rock specimens

30,001 - 100,000	2
10,001 - 30,000	0
5,001 - 10,000	4
1,001 - 5,000	0
501 - 1,000	0
Less than 500	1
No info	0

Geography as a means to 'sort' rock specimens

30,001 - 100,000	2
10,001 - 30,000	2
5,001 - 10,000	0
1,001 - 5,000	1
501 - 1,000	1
Less than 500	3
No info	1

Admin number as a means to 'sort' rock specimens

30,001 - 100,000	3
10,001 - 30,000	2
5,001 - 10,000	3
1,001 - 5,000	4
501 - 1,000	4
Less than 500	7
No info	1

5. Environmental conditions

18. Is the environment in the storage area monitored?

Yes	210
No	36
No response	12

81% of museums holding geological collections monitor the environmental conditions in their stores. However methods of environmental monitoring range from telemetric dataloggers to "subjective personal assessment on a daily basis".

19. If so, what monitoring system is used? (Thermohygrographs, telemetric dataloggers, whirling hygrometers etc?)

Of the 210 museums monitoring the storage environment, the following number of museums use:

Continual monitoring systems (and spot checks)

Self controlling building wide system	4
Dataloggers, remote or hard-wired telemetric systems	55
Dataloggers supported by whirling and/or hair hygrometers	2
Datatloggers and thermohygrographs together	16
Datatloggers, thermohygrographs & whirling hygrometers together	4
Thermohygrographs (digital and/or 'recording')	87
Thermohygrographs (digital and/or 'recording') & whirling hygrometers together	8

Spot checks only

Dial hygrometers	5
Hand-held spot-check electronic hygrometers	5
Whirling hygrometers	12
Whirling hygrometers & humidity strips	1
Humidity strips	2

Uncertain

Unknown/ no response	7
Visual monitoring	1

20. How often is the area checked?

"Continuous"	6
Daily	39
Weekly	81
Monthly	51
Every quarter	1
6 monthly	6
Yearly	10
Spot checks	1
Sporadically	1
Unknown/no response	15

However some confusion is apparent as a number of museums with no monitoring of storage environment

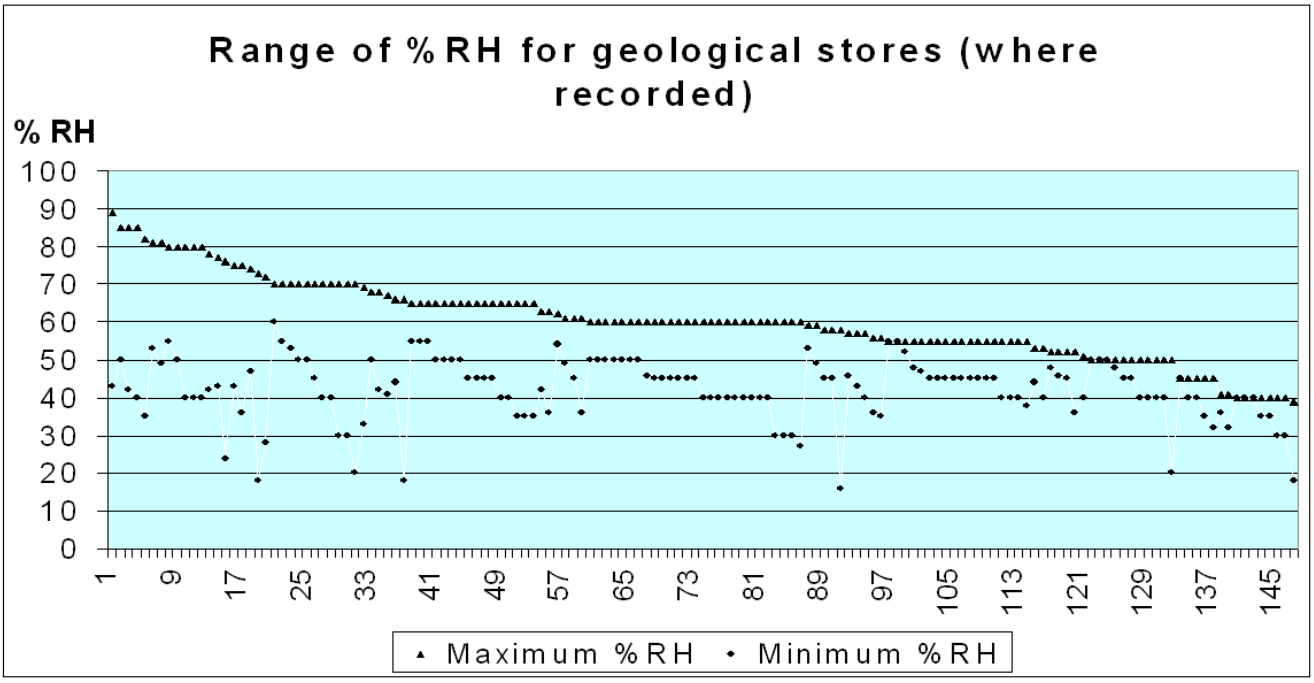

Figure 5.1: shows the range in %RH in those museums who responded to Question 21. The numbers along the x-axis refer to a specific store within a museum. In some cases individual museums listed environmental conditions in more than one store.

"checked" the storage area: daily (2 museums), weekly (11musuems), monthly (10 museums) and one museum "when museum is open".

It should also be noted that "continuous" checking may be somewhat a *misnomer* unless there is someone ready to respond to any pre-programmed alarm in the monitoring system.

21. If known, what is the maximum %RH and minimum %RH in the store over the year? If material is kept in more than one store, please give figures for each location if possible. Note: %RH refers to % of relative humidity when compared to complete saturation (100%)

Figure 5.1 illustrates the range in %RH in those museums who responded to Question 21.

It may be assumed that the majority of museum storage environments will be ideally aiming for a stable %RH of somewhere between 40 – 50%RH for the majority of their geological collections. However, some museums may be in the fortunate position of possessing dedicated stores for specific parts of their collections, such as low humidity stores for pyritised or anhydrous material, or higher humidity stores for sub-fossil specimens. There will be a number of others, conversely, where geological specimens make up a proportion of the material stored and will therefore have different pressures and needs on their storage environments, and may need to ensure the stability of other material to the detriment of geological specimens.

A more interesting picture is presented when these figures are compared to the responses to the following question:

22. Are the storage area environmental conditions stable, i.e. Fluctuations of + or – 5% over a month?

Yes	132
Unknown	42
No	54
No response	30

41 of the 132 that state that their stores have 'stable' conditions did not give any details regarding the actual %RH levels and/or fluctuations. It would have been useful to know, for the record, what %RH each of these museums are storing specimens at.

Of the remaining 89 museums with 'stable' environments the specific figures for the %RH over **one year** are illustrated in **Figure 5.2**.

Although it is understood that over one month conditions may be stable (i.e. fluctuations of less than +/- 5%), these should be reflected in the annual figures to some extent. With this in mind it is somewhat surprising that over half the museums that stated their stores maintained a stable environment had annual reading that fluctuated by more than 10%. This is regardless of the desired level of %RH stability such as 45%RH or 60%RH.

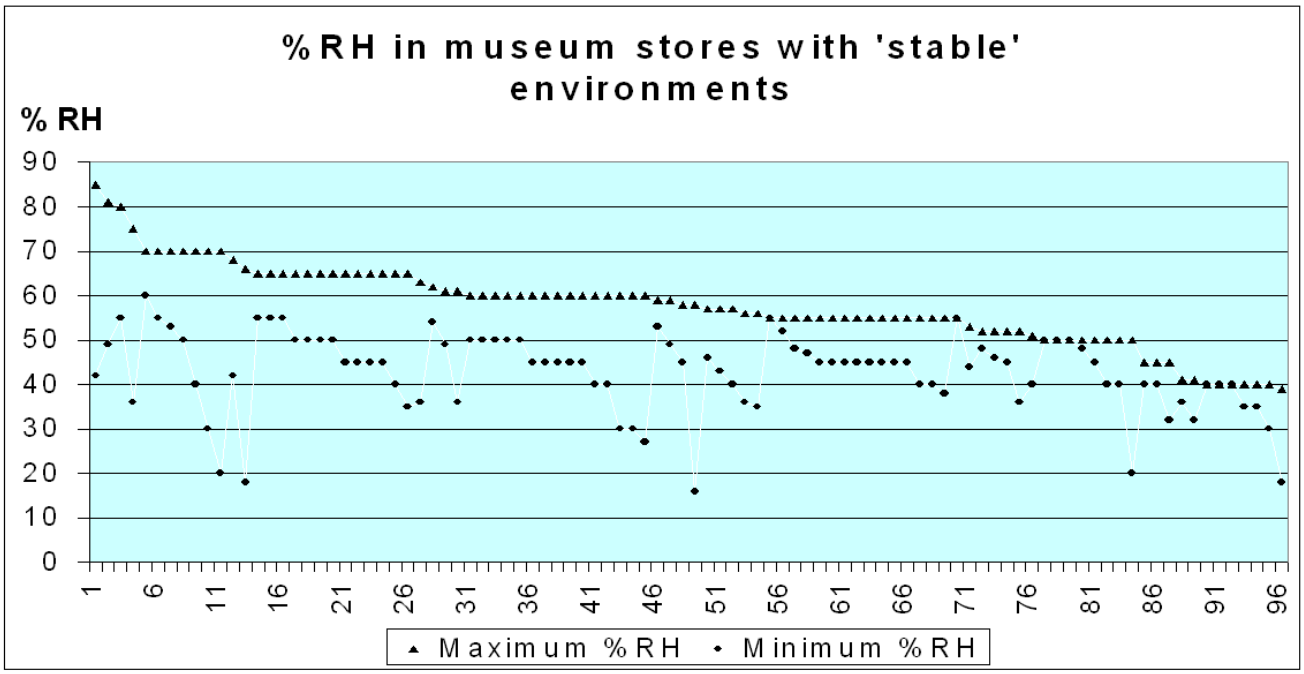

Figure 5.2: shows the specific figures for the %RH over one year of 89 museums with 'stable' environments. The numbers along the x-axis refer to a specific store within a museum. In some cases individual museums listed environmental conditions in more than one store.

46 'stable' stores in museums recorded fluctuations of +/- 5% RH
30 'stable' stores in museums recorded fluctuations of +/- 10% RH
16 'stable' stores in museums recorded fluctuations of +/- 20% RH
4 'stable' stores in museums recorded fluctuations of +/- 30% RH

Indeed 4 museum stores that maintain 'stable' relative humidity range in one year from:

58% RH to 16% RH
85% RH to 42% RH
66% RH to 18% RH
70% RH to 20% RH

It must also be remembered that though store room conditions may fluctuate by greater or lesser degrees the environmental conditions inside well-sealed cabinets and boxes may be much more stable.

Well-sealed storage provides a buffer against dramatic changes in humidity and temperatures, but it does not alleviate all fluctuations. In fact, well-sealed storage furniture can have detrimental effects on specimens if the internal conditions were 'sealed' at a time of unsuitable humidity, thus for example sealing dampness in. If conditions are not monitored even well-sealed, buffered storage will potentially be unsuitable.

23. Are environmental controls in place i.e. De-humidifiers, controlled air-conditioning?

Yes	124
No	107
No response	27

Please specify what type of control is used

Of the 124 museums with some method of environmental control in place:

Dehumidifiers/humidifiers	77
Air conditioning	17
Air conditioning & dehumidifiers	4
Controlled heating & dehumidifiers/humidifier	4
Dehumidifiers & thermal insulation	1
Central heating	5
Thermal insulation	2
Silica gel	1
Undefined	2

Overall 69% of museums using environmental control use dehumidifiers/humidifiers only or as part of their system.

17% of museums use some form of air-conditioning, whilst 7% use controlled heating to help with environmental conditions. However of the 7% using "controlled heating" more than half use ***only*** controlled heating to effect the stores environment.

3 museums use thermal insulation or second skin walls to assist environmental control. It is interesting, perhaps that this number is so low, as it can be a relatively cost effective way of ***stabilising*** established storage conditions.

Of the 107 museums that had no environmental controls in place, individual museums stated that they have:

Blinds on windows, closed doors, most radiators off to reduce daily cycling.
De-humidifiers are available if required.
Only night storage heaters.
Overall, the museum has air-conditioning, but the geology storeroom has none.
Temperatures controlled only by wall heating and thermostats.
Up to last spring there was a dehumidifier in the store, but it was ineffective so not replaced when it failed. Using central heating to keep RH down.
We are awaiting the replacement and modification of our heating, ventilation, and air-conditioning system which will greatly improve control over environment.
When monitored the store was relatively stable by comparison with any of the NH stores in the main building

One museum stated that they have no environmental control "except in low-RH store".

Of the 27 who failed to respond to the earlier question:

3 have de-humidifiers available if required,
1 museum keeps stores "at even temperature" and another uses a controlled heating system.

24. Are any of the specimens stored in microenvironments?

45 museums store some of their specimens in microenvironments, and one other lists a dedicated radioactive mineral store.

If so, what type of microenvironment?

Museums are using a variety of low and high tech methods to create microenvironments for the safe and suitable storage of 'problem' specimens.

The following is a simplified breakdown of the systems a number of museums use. In some cases one museum will use a combination of methods appropriate to the specimens, in others museums

claim to create microenvironments using 'silica gel' but with no indication of how that particular microenvironment is sealed.

Method used by number of museums:

Sealed boxes & silica gel/*artsorb*	18
Sealed boxes	12
Sealed plastic bags	3
Sealed melinex/plastic bag & silica gel/*artsorb*	2
Desiccation cabinet	3
Dehumidified cabinet	2
Anoxic / oxygen free	2
Silica gel	4
Lead-lined radioactive box	2
Toxic specimen box	1
RH controlled microenvironments	2
Unspecified	2

The overall issue with environmental monitoring and control is that stores should be monitored to understand the conditions you are placing your collections in. This monitoring should be regularly checked to understand the fluctuations over time, the cause and effect of buffering in cabinets, boxes and drawers, what happens when doors are left open, or when someone is working in the store. But all the monitoring and understanding of the environmental conditions means little unless you are prepared to respond to issues that arise. Too many museums 'monitor' conditions and then do little or nothing about them!

Environmental control equipment can now be acquired at relatively low cost, but even then other lo-tech things can be done to alleviate poor storage conditions, such as using draught excluders, taping up holes in window frames, adjusting the heating systems, lagging pipes and insulating walls etc.

As silica gel and *artsorb* operate by absorbing excess moisture in a confined space they must be re-treated at regular interval to remove the absorbed moisture and thereby maintain their effectiveness.

Attention should also be paid to other issues effecting collections (see **Section 6** for further discussion about conservation).

Some microenvironments will, unwittingly, be missed from the list. Many mineral specimens are susceptible to damage and deterioration on exposure to light (both UV and high Lux levels). These are often stored in 'microenvironments' without real awareness as most stores or boxes are dark when not in use.

6. Conservation

25. Has a conservation survey been conducted in the last 10 years?

If yes, please give details

Yes	103
No	143
Unknown	3
No response	9

Of the 103 museums, some gave examples of more than one survey undertaken in the last 10 years. Names of individuals who undertook some of the surveys were given and it becomes apparent that without the funding initiatives of Area Museum Councils (as they were) and other organisations such as supportive local authorities much of these surveys would not have been possible. As the newly re-organised Museums, Libraries and Archives Councils no longer directly support conservation projects by retaining regional conservators on the staff, and are in fact re-directing much funding towards learning initiatives, in line with central government directions, it is unclear how many museums will continue to carry out essential remedial and preventative conservation. The April 2005 edition of the *Museums Journal* reported the closure of the Scottish Museums Council's conservation service. "The last remaining in-house conservation unit of any of the UK's regional agencies closed down last month" (Heywood, F. 2005).

Details of the conservation work undertaken on geology collections in the last 10 years includes many references to 19 individual contractors, accounting for some 52 separate projects, and their funding or directing organisations, and also to unnamed conservators:

Un-named conservators

Geological conservator on staff	1
MGC Geology Conservation Intern	1
Area Museum Council: un-named person	6
University Collection Survey	2
In house conservation staff	10
Museum staff, non conservation	5
Currently being undertaken	2
Non-subject specific	6
Un-named consultant/conservator	8
No further details	26

26. Has any of the collection undergone specialist remedial conservation in the last 10 years? If yes, please give details

Yes	64
No	178
Unknown	1
No response	15

With more and more emphasis on preventative conservation and improvement of storage conditions, remedial conservation is often only associated with the need to work on items in preparation for display.

Often, a variety of remedial conservation techniques and processes are carried out by geological curators, with varying degrees of conservation training and knowledge, or conservators whose specialisms lie in non-geological areas. Geology (and the rest of natural history) has been a subject area traditionally left to the curator to 'preserve' and 'conserve'. This is beginning to change, but paucity of funding encourages such practices, often because they present the only realistic option.

27. Using the following classification, what is the current condition of the specimens?

Please indicate the proportion in each category:

A. good = sound and clean
B. indifferent = sound but dirty or exposed to risk
C. bad = specimens deteriorating physically due to pyrite disease, fragmentation, constant abrasion or other causes

No response 23

Those museums that failed to respond were made up of the following sizes of holdings:

1 museum holding over 250,000
2 museums holding 30,000 – 100,000
2 museums holding 10,000 – 30,000
1 museum holding 5,000 – 10,000
6 museums holding 1,000 – 5,000
1 museum holding 500 – 1,000
6 museums holding less than 500
4 museums undeclared collection size

Good

0%	20
1-20%	16
21-40%	18

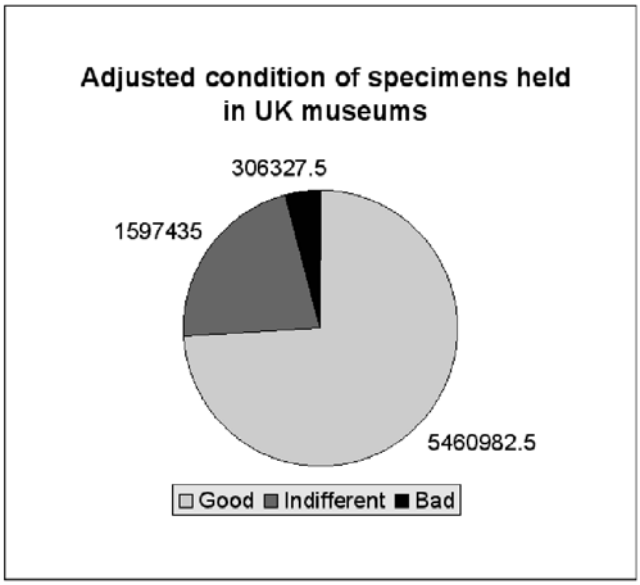

Figure 6.1

41-60%	23
61-80%	42
81-100%	116
Indifferent	
0%	70
1-20%	79
21-40%	24
41-60%	26
61-80%	14
81-100%	22
Bad	
0%	130
1-20%	98
21-40%	4
41-60%	1
61-80%	2
81-100%	0

The 2 museums stating that they have more than 60% of specimens they consider to be in a 'bad' condition, also stated that they had 50% good and 50% indifferent in one case, and 100% good and 20% indifferent in the other. Therefore we must (thankfully) treat these responses with some element of doubt.

Some responses give a good picture of the way in which museums regard their collections, but can cause some confusion.

Those museums that did not give a figure for size of collection and those that gave no response to the proportions of specimens in good, bad or indifferent state were omitted from the following approximations.

The calculations are based on average holdings (maximum & minimum sizes of collection in range and 500,000 as largest holding).

Figure 6.1 illustrates quite well the approximate conditions of specimens in UK museums. The encouraging news is that the vast majority of geological specimens are **believed** to be in good or at the very least indifferent (but relatively stable) condition. However as always, **believed** is the operative word.

Unless collections are view and measured to an accepted and repeatable benchmark results will be dependant on individuals' levels of knowledge.

Figures 6.2 to 6.9 show the relative condition of geological specimens in UK museums based on size of holdings. The numbers along the x-axes refer to the number of museums in each category and are used for convenience to differentiate between respondees.

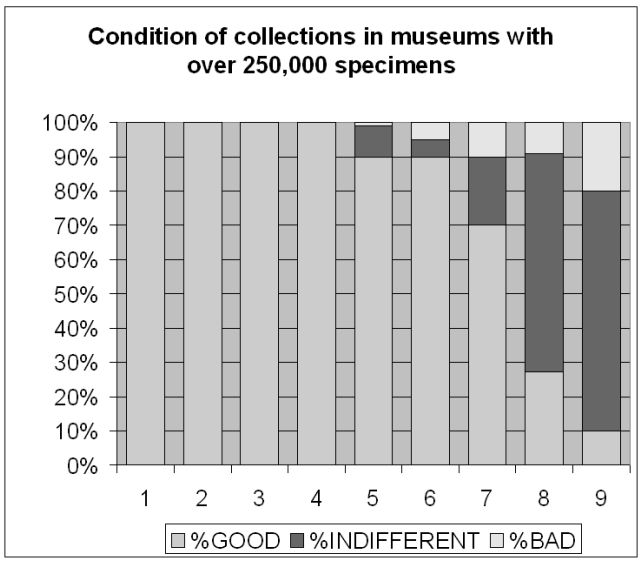

Figure 6.2

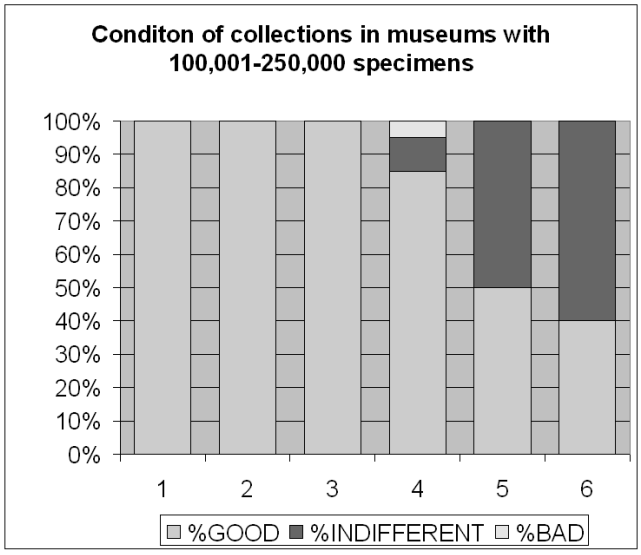

Figure 6.3

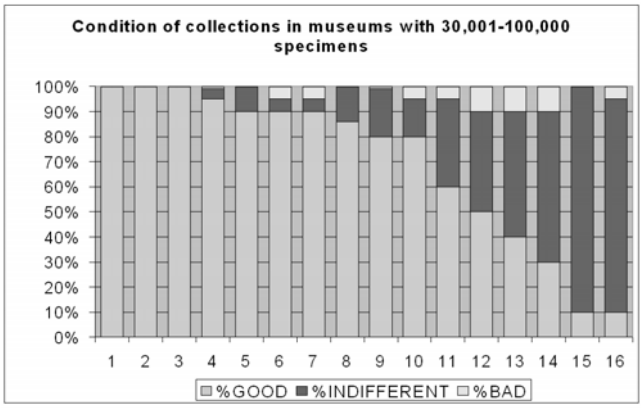

Figure 6.4

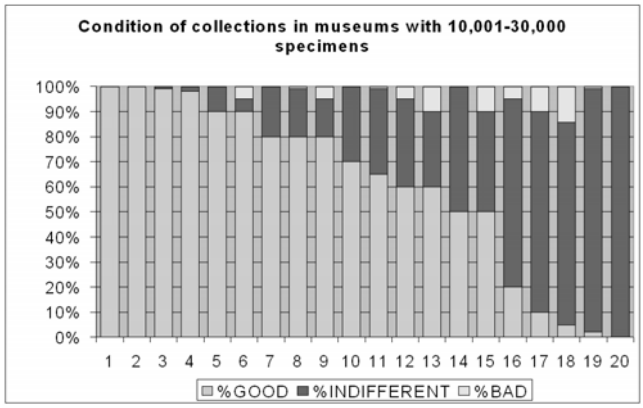

Figure 6.5

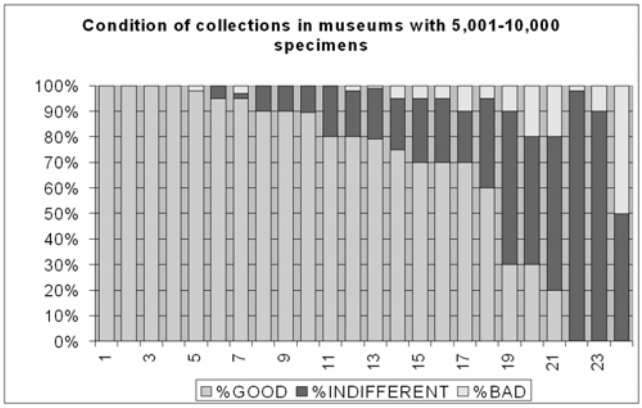

Figure 6.6

Figure 6.7

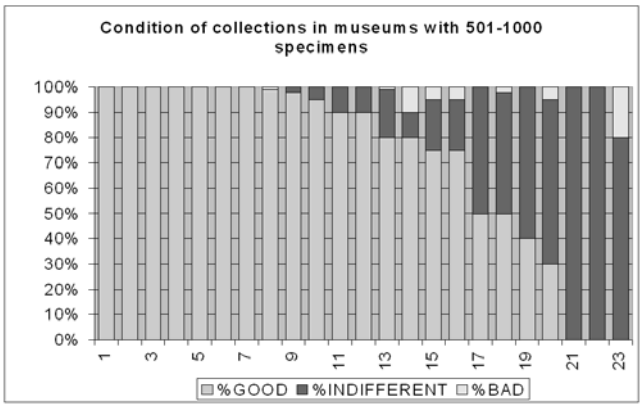

Figure 6.8

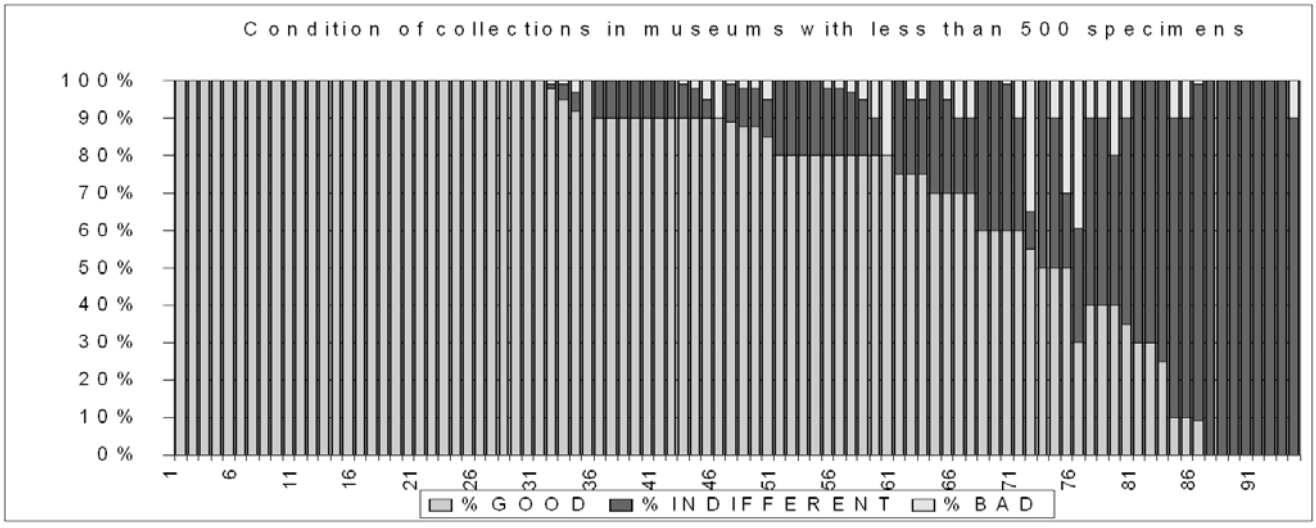

Figure 6.9

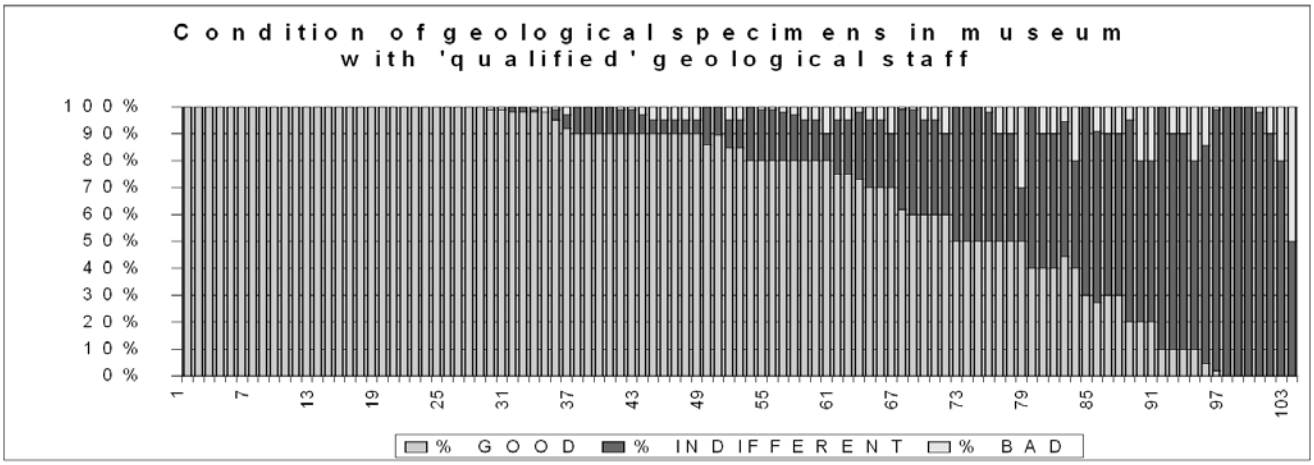

Figure 6.10

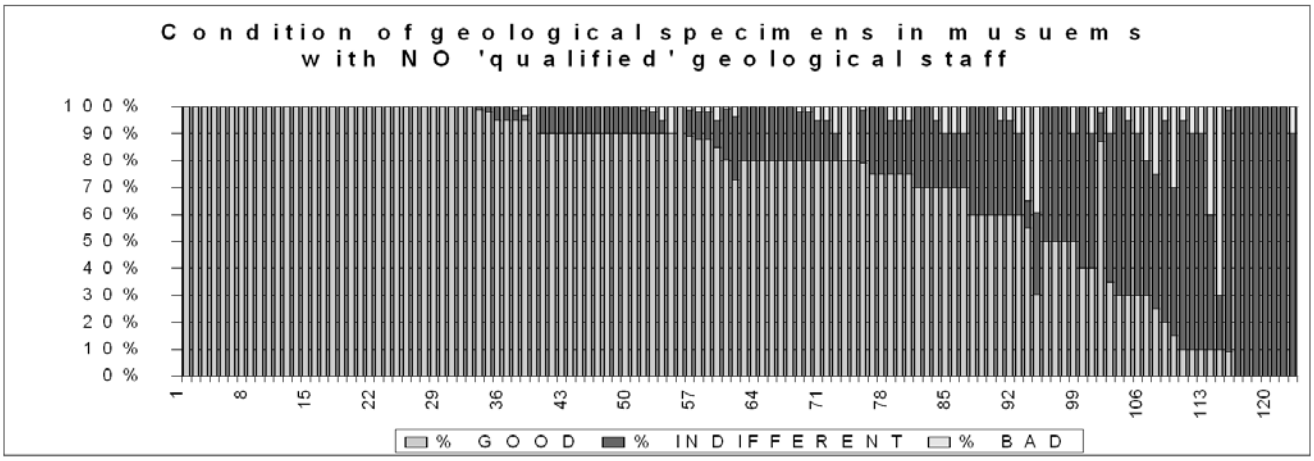

Figure 6.11

Condition compared to staffing

When comparing the condition of collections to staffing support an interesting picture appears (**Figures 6.10 and 6.11**).

In cases where museums employ staff 'qualified' to care for the geological collections the specimens on the whole appear to be in the same condition as those housed in museums where no 'qualified' member of staff exists.

33 museums state 100% of their collections are in good order, but have no qualified geological staff.

28 museums state 100% of their collections are in good order, but have no conservation staff with geological training.

Of the 112 museums that have 'qualified' geological staff,

52 (46%) have between 81-100% in good condition
15 (13%) have between 61-80% in good condition
11 (10%) have between 41-60% in good condition
9 (8%) have between 21-40% in good condition
8 (7%) have between 1-20% in good condition
17 (15%) have **no** specimens in good condition

Of the 133 museum that have no 'qualified' geological staff,

61 (46%) have between 81-100% in good condition
26 (20%) have between 61-80% in good condition
12 (9%) have between 41-60% in good condition
8 (6%) have between 21-40% in good condition
8 (6%) have between 1-20% in good condition
18 (14%) have **no** specimens in good condition

There is so little different between the percentage of museums with or without geological staff in each category that it may beg the question, why employ geological staff if they make little or no impact on the condition of the collections?

The major problem with any self-directed survey is the person filling out the form. Many geologists will be critical of the condition of their collections (perhaps overly so when tinged with frustration due to lack of resources in the face of rising awareness of environmental and storage impact). Non-specialists, perversely, will be unaware of the issues surrounding the condition of individual specimens, unfamiliar

with 'good' collections and standards in care of geological specimens, and will often grade collections in their care too highly.

The only way to ensure an accurate picture of the condition of the UK's geological collections is to instigate a wide reaching survey of collections that uses a team of people to benchmark collections against a known standard. The National Preservation Office (British Library), has been piloting a scheme based around libraries and archives, and is planning to extend this scheme to museum collections. The surveys are based on random statistical sampling methods and may be the only arbitrary and non-personal approach for a curator to take. Results of the trials are awaited with interest.

Condition of collections compared to 1981

The same question was posed in 1981 with results that were difficult to analyse well.

1981

Number of museums holding specimens in the following states:

Good	222	(79%)
Indifferent	159	(56.6%)
Bad	88	(31.3%)

2001

Number of museums holding specimens in the following states:

Good	215	(83%)
Indifferent	165	(64%)
Bad	105	(41%)

At first glance we may conclude that the collections have more specimens in bad condition now than in 1981, however things cannot be interpreted that simply. 98 of the 105 museums with specimens in a 'bad' state have between 1-20% of their specimens in this condition. It is unclear from the 1981 report how the proportion of the conditions breaks down.

What can be said though, is that as more people undergo professional museum training the **recognised** condition of individual specimens may indeed **reduce**, as more curators learn to recognise damage and deterioration, but ultimately we would hope that in real terms the true condition of the collections will increase.

1981 comment

Since these figures simply indicate the number of museums with a proportion of their collections in various conditions, they do not give an empirical appreciation of the state of whole collections, or of the general situation. However, with over half the museums acknowledging that they have specimens which are dirty, and about a third admitting that they have specimens in a deteriorating state, there are pointers to a serious lack of curatorial resources in many museums, or the recent inheritance on a wide scale of generations of curatorial neglect…… There are vast numbers of geological specimens in museums which are known to be deteriorating and many thousands of others in need of attention.

28. Do you have a professional conservator as a member of staff, or access to conservation support?

Yes	130
No	115
No response	13

29. If so, do they have any training in geological conservation?

Of the 130 museums that either have conservators on staff or have access to conservators the following have conservation staff with some level of geological conservation training:

Yes	59
Not sure	5
No	50
No response	16

In both question 28 and 29 the museums are split almost 50:50 in their responses, meaning that only a quarter of museums holding geological material have access to conservation support with some level of geological training. Geological conservation has often been the responsibility of the curator. As awareness of specific needs of collections increases and geological conservation training becomes more available it is to be hoped that the 'general' or 'object' conservator will develop a knowledge of geological conservation issues.

This does little to assist the 50% of museums who feel they have no access to a professional conservator, and it perhaps reflects the current situation with area museum services taking a more 'strategic' view and closing conservation support labs, and freelance conservators finding it difficult to publicise their services and remain on the 'radar' for smaller museums with minimal funding to spare for conservation.

7. Personnel and Management

30. Does anyone on your staff have any geological training or background? Please describe qualifications/ training as fully as possible.

112 or 43.4% of museums have staff with some type of geological background. Without any pre-defined 'classes' of background those that stated their museum had 'staff with geological backgrounds' ranged from amateur interest and G.C.S.E. level geology to those with 25 years work as 'unqualified' geologists and those who listed numerous staff on site with a full range of academic and professional qualifications (BSc, MSc, PhD, AMA, C.Geol, FGS etc.).

The term 'staff' also was interpreted in numerous ways and in many cases did not relate to those in curatorial contact with the collections. Amongst the list were: volunteers, senior managers, documentation assistants, education officer, conservators and curatorial advisors.

Out of the 112 museums with staff that have 'geological backgrounds', 68 (60.7% or 26.4% of all museums holding geological collections) appear to be supported by staff with a first degree containing a significant proportion of geology (datum level was taken as geology studied as either joint honours or for at least 3 years as part of another major degree subject).

The results in 1981 do not allow clear comparison with 2001 as the following question was asked:

1981

"Is there a post in the museum for a full time geological officer?"

Yes	44	(15.7%)
No	214	(76.2)
Undeclared	23	(8.2%)

31. How many members of staff are working full-time on the geology collection?

Unfortunately the responses to this question illustrated the variance in interpretation throughout the survey. With hindsight the question could possibly have been worded to give clearer or more consistent responses.

A number of responses have been selected to indicate those museums with the highest levels of staff support in geology (more than 1 fulltime member of staff) [size of collection in square brackets].

University of Oxford Museum of Natural History [over 250,000] 50
Natural History Museum, (Dept. of Palaeontology) [over 250,000] 20
National Museum of Wales [over 250,000] 15
National Museum of Scotland [over 250,000] 11
Sedgwick Museum of Earth Sciences [over 250,000] 4
University of Glasgow Hunterian Museum [over 250,000] 3.5
Manchester University Museum [undeclared] 3
Somerset County Museum [30,001 - 100,000] 2
UCL, Department of Geological Sciences [30,001 - 100,000] 2
University of Birmingham, Lapworth Museum of Geology [over 250,000] 2
Liverpool Museum [100,001 - 250,000] 2
Dinosaur Isle Museum [30,001 - 100,000] 2
Hancock Museum, Newcastle upon Tyne [100,001 - 250,000] 2
Bristol City Museum and Art Gallery [over 250,000] 2
Yorkshire Museum [100,001 - 250,000] 1.5

However some of the responses must be questioned when one museum state that 3 full time staff were working on the geology collections, but the institution holds less than 500 geological specimens, and a number of other museums have qualified geologists as curators, but apparently felt that they could not be classed as 'full time members of staff working on geology collections' as their roles were wider encompassing biology, education or general museum management.

32. What proportion of their time is spent on curation of the geology collection compared to other activities, e.g. exhibitions?

Again, wide interpretation of the previous question results in difficulty in analysing the responses.

Simplified responses allow us to gauge the **views** of the museum staff perhaps rather than the actual time spent working on the geology collections.

75%-90%	2
50%-75%	14
11%-45%	11
1%-10%	51
no info / 0%	180

No. of F/T staff working on geological collections	% of time spent on curation of geological collections	Hours per week (based on 37 hour week)
50	60	1110
20	60	444
15	60	333
11	45	183
4	50	74
2	70	52
2	70	52
3	42	47
2	60	44
2	60	44
2	50	37
1.5	50	28
2	30	22
2	20	15
3.5	10	13

Figure 7.1

No of specs in geology collections	Name of Museum / Institution	Hours per week	Hours per 1000 specimens
Over 250,000	University of Oxford Museum of Natural History	1110	2.22
Over 250,000	Natural History Museum (Dept. of Palaeontology)	444	0.88
Over 250,000	National Museum of Wales	333	0.67
Over 250,000	National Museum of Scotland	183	0.37
Over 250,000	Sedgwick Museum of Earth Sciences	74	0.15
30,001 to 100,000	Somerset County Museum	52	0.8
30,001 to 100,000	University College London Dept. of Geological Sciences	52	0.8
Un-declared	Manchester University Museum	47	n/a
Over 250,000	University of Birmingham Lapworth Museums of Geology	44	0.09
100,001 to 250,000	Liverpool Museum	44	0.25
30,001 to 100,000	Dinosaur Isle Museum	37	0.57
10,001 to 30,000	Hampshire county Council Museum Service	33	1.65
30,001 to 100,000	University of St Andrews Geological Collection	30	0.46
100,001 to 250,000	Yorkshire Museum	28	0.16
30,001 to 100,000	Nottingham Natural History Museum	22	0.34
100,001 to 250,000	Hancock Museum, Newcastle upon Tyne	22	0.13
10,001 to 30,000	Royal Cornwall Museum, Truro	22	1.10
10,001 to 30,000	Sunderland Museum and Winter Gardens	18	0.90
30,001 to 100,000	Lancashire County Museums Service	15	0.23
10,001 to 30,000	Potteries Museum & Art Gallery, Hanley	15	0.75
Over 250,000	University of Glasgow Hunterian Museum	13	0.03

Figure 7.2

We can see, when the proportions of staff time working on collections is ranged against those museums with more than one full time member of staff working on geology collections, that the results, rather unsurprisingly, show that those with the most staff are usually the ones spending the most amount of time curating the collections (**Figure 7.1**).

This compares favourably with the museums spending the highest proportion of staff time working on geology collections, when compared to the size of holdings (**Figure 7.2**).

33. Do you have any volunteers who work on the geological holdings? If so, how are they supervised?

All museum staff are volunteers	8
Yes	71
Occasional (but not at present)	6
No	154
No response	19

Methods for volunteer supervision

With a relatively high number of museums using volunteers on a regular basis, one of the questions posed was how those volunteers were supervised.

This could be viewed as an impertinent question, especially to those museums that rely solely on volunteer support to open their doors. Historically, many museums may have 'suffered' loss of specimens through open access policies to keen amateur collectors, who often volunteer to assist with collection care. It cannot be assumed however that volunteers are either universally excellent and trustworthy and therefore should be allowed unsupervised access, or indeed that each and every volunteer must be watched like a hawk in case they

add museum specimens to their own collections (We might equally say the same for curators themselves!).

Very often volunteers are far more knowledgeable than the supervising member of museum staff, or they may be relying fully on expert guidance. In all cases the role of the 'curator' or carer for the collection must be to ensure anything done to the collection can be followed and accounted for, is of value to the collection and fits with that museum's common code of practice.

The following is a simplified breakdown of responses, showing the number of museums employing the method of supervision:

All staff are volunteers	8
By curator	34
By curatorial assistants/assistant keepers	7
Curator & lead volunteer supervise vol. team	2
Curator & conservator	1
Documentation officer	1
Named supervisors	2
Peripatetic curator	1
By museum manager	4
Visitor Service Manager	1
Museum staff	7
Patchy/limited supervision	4
No supervision	3
No details	10

Volunteers may be university undergraduates, post-graduates, older 'work experience' students from local schools, retired professional and amateur geologists, museum 'Friends' or even family and friends helping a busy curator.

They may be involved in cataloguing, documentation, identifications, conservation, re-storage, historical research, education and display work and more depending on their background.

They can stay with a museum for decades, be around for a week's work placement, arrive and work as regular as clockwork, or drop-in whenever other commitments allow.

It is perhaps unnecessary, but important to remind employed museum workers that many current curators, collections managers and directors began their museum careers as volunteers. When museums employ people who have not begun their careers in this way, it often leads to friction when they are asked to accommodate or work alongside unpaid assistants. The management of and responsibility to volunteers is often *ad hoc* and dependant on both the supervisor and the volunteer, but it is often a delicate balance between the need of the museum, the need of the volunteer and the commitment (regular or sporadic) each can give to support the other.

34. Do you have an acquisition policy? Does it refer to geological materials?

Do you have an acquisition policy?

Yes	243
No	7
No response	8

Of the 7 that **do no**t have an acquisition policy; 2 museums hold geological collections of over 250,000 specimens; the remainder have less than 500 geological specimens in their collections.

A current acquisition policy is a requirement of museum *Registration* and now, *Accreditation.*

Is geology specifically referred to in the acquisition policy?

Of those with an acquisition policy:

Yes	201
No	33
No response	8
Yes, but only to exclude them	1

Of those whose do not refer specifically to geology in their acquisition policy, 25 museums hold less than 500 specimens.

However:

4 museums hold between 500-1000 geological specimens;
1 museum holds 1000-5000;
1 holds 5000-10,000
and finally
1 museum holds over 100,000 geological specimens.

But all of these larger geological collections form less than 25% of each museum's specific holdings.

The growth patterns of these larger collections with no reference within their institutions acquisition policy is of note. The museums holding ***more than 100,000*** and ***1,001 to 5,000*** specimens added **no** specimens in the last 10 years; three museums holding between ***501 to 1000*** specimens each added between zero and 50 specimens in the last 10 years; but two museums holding between ***5,001 to 10,000*** and ***501 to 1000*** added between 100 to 499 specimens to their collection in the last 10 years, without a specific policy on what material to collect.

Of those with no response to this question, 9 museums stated that they did have acquisition policies, and 2 of

those hold geological collections of over 30,000 specimens.

In light of the universal restrictions on resources such as space and staff time, acquisition policies must play a prominent role in reducing the possibility of impulse acquisitions that have little or no relevance to the holding institution. To have no acquisition policy is problematic when museums often have to justify their existence and funding, but to have an acquisition policy and not refer to a part of the collection you are expanding will potentially cause longer-term issues for the entire collection.

35. Do you have an active policy of collecting?

97 museums state that they are actively collecting geological material. But of those, 7 state that geological material is not referred to in their acquisition policy and 2 make no response.

144 museums are ***NOT actively*** collecting, but include:
2 holding over 250,000 geological specimens
1 holding between 100,000 - 250,000 geological specimens
5 holding between 30,000 - 100,000 geological specimens
11 holding between 10,000 - 30,000 geological specimens

Of the 13 who did not respond, 1 museum holds between 30,000 - 100,000 geological specimens.

Of those museums ***actively*** collecting,

10 added **no** specimens in the past 10 years.
28 museums added **under 50** specimens
7 museums added **between 50 - 100** specimens
19 museums added **between 100 - 500** specimens
8 museums added **between 500 - 1000** specimens
22 museums added **more than 1000** specimens to their collection in the last 10 years

Of those museums ***NOT actively*** collecting,

47 added **no** specimens in the past 10 years.
60 museums added **under 50** specimens
8 museums added **between 50 - 100** specimens
13 museums added **between 100 - 500** specimens
5 museums added **between 500 - 1000** specimens
3 museums added **more than 1000** specimens to their collection in the last 10 years

For further details see **Size and growth of collections** in **Section 2**.

36. Are the geological collections referred to in the museums overall strategic plan?

105 museums stated that geology was part of their museum's strategic plan
123 museums stated that geology was NOT part of a strategic plan
30 museums did not respond to the question, presumably because they either have no strategic plan or are unaware of its contents.

Of the 153 that either did not respond or stated that geology was not referred to within their strategic plan the majority hold less than 5000 geological specimens (121 or 79%). However the remaining 32 or 21% includes 5 museums holding over 100,000 geological specimens.

37. Have you been successful in obtaining grants for the geology collections in the last 10 years? If so please give details.

A number of museums stated that general UK funding bodies were not accessible to them and therefore restricted their collection's development: i.e. Channel Islands, Isle of Man

One museum stated "Museum budget adequate so far for projects to date".

Others (in small numbers) that although they had applied for grants, they had not been successful and a number that they had not applied for grants to support their collections work in geology.

Geographical distribution of grants received

Illustrated in **Figure 7.3**.

Source of grants

During the last 10 years, museums have benefited from grants from the following sources (numbers refer to number of museums listing the source of funding when that information was given):

National and/or Governmental Funds [Total: 27]

Heritage Lottery Fund	10
Designation Challenge Fund	4
DCMS/Wolfson Fund (or similar)	2
RIGS (Regionally Important Geol. Sites) via Countryside Commission	1
Scottish Natural Heritage	1
National Fund for Acquisitions (Scotland)	1
Aggregates Levy Sustainability Fund	1
Local Heritage Initiative (Countryside Agency)	1
Preservation of Industrial & Scientific Material (PRISM Fund)	6

International Funds [Total: 3]

European Regional Development Fund	2
Geologists AIJOCC (L'Associació Internacional de Joves de Casals Catalans)	1

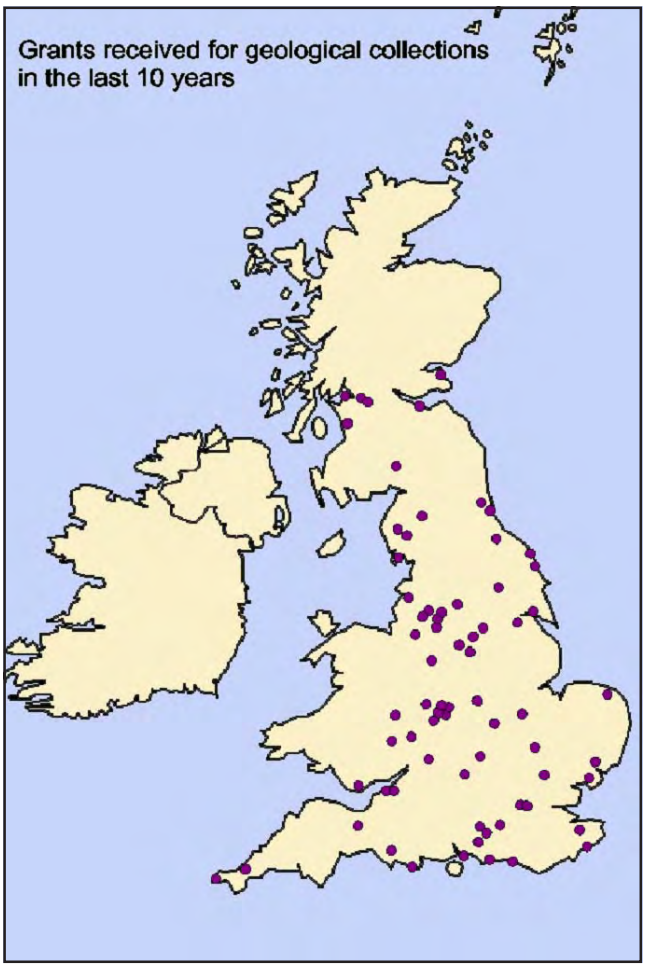

Figure 7.3: Geographical distribution of grants received.

Local Authority / Regional Councils [Total: 10]

Local authorities/ regional council	4
City of Leicester Museum Trust	1
Surrey Museums Consultative Committee	4
Regional Development Council	1

Area Museum Councils [Total: 32]

Unspecified	5
East (England)	2
East Midlands (England)	2
North East (England)	2
North West (England)	5
South East (England)	5
Scotland	3
South West (England)	4
West Midlands (England)	3
Yorkshire & Humberside (England)	1

Higher Education/Research Funds [Total: 7]

Research grants	1
University funds	2
Higher Education Funding Council for England	1
Arts & Humanities Research Board	1
Natural Environment Research Council	1
Robus-Geikie Research	1

Corporate Funds or Sponsorship [Total: 3]

Television (including BBC, BBC Worldwide, CBBC & HTV)	1
Corporate sponsorship	1
RANSCO (Environmental control equipment)	1

Charitable Trusts [Total: 10]

Unspecified	1
Geologists' Association/Curry Fund	7
Normandy Trust	1
William Reed Bequest for the Yorkshire Philosophical Society	1

Other or unclear source [Total: 5]

Anonymous donations	1
Earth Science Review	1
EPS (Leeds)	1
FSA	1
Lawful Tax Credit Scheme	1

Purpose or outcome of grant

Where given the purpose of the grant has been simplified and grouped in broad categories (numbers refer to number of museums using grant monies for specific purposes over last 10 years):

Curation, documentation & research

·geological curatorial support or peripatetic geological curator	10
·cataloguing / documentation	11
·computer database system	1
·computer equipment	1
·research	1
·acquisition of specs. via research	2
·fieldwork	1
·purchase of specimens	8

Collections surveys & conservation

·collection / conservation survey	7
·conservation / preparation	19

Environmental control

·HVAC (heating, ventilating & air-conditioning) project	1
·Environmental control equipment	3

Storage

·storage furniture	1
·storage supplies / re-storage	26
·visible storage	1

Promotion/education

·display	6
·display furniture	1
·geological walks leaflets	1
·education resources	1
·digitisation project	3

General or wide scale development

·museum redevelopment	2
·fire alarm system	1
·purchase of equipment	1
·security	1

8. Services

38. Do you identify geological material for the public?

Yes	156
No	93
No response	9

39. If no, do you have alternative arrangements such as sending material to other museums for identification?

Museums that do NOT answer geological enquiries

Yes	44
Yes (no details)	23
No	9
No response	17

Museums that do NOT answer geological enquiries BUT DO list alternative arrangements

Refer to other museums with geological staff	35
Refer to university	2
Seek help from academic staff	1
Send specimens to other museum	1
Seek help from other geologist (professional or amateur)	7
Unspecified	2

It does seem that many museums with no resident geologists will often try to answer enquiries, particularly if common finds are brought in or refer them to other museums with specialist staff.

Two museums refer geological enquiries to museums with no resident specialist currently on the staff (and who themselves refer to other museums). Hopefully, being passed from one museum to another would not be off-putting for a keen enquirer.

Another museum used to refer geological enquiries to a nearby museum, that has recently changed staff, losing their geologist from a 'general curatorial' position.

An up-to-date and maintained directory of geologists in museums and/or other institutions willing to respond to public enquiries would help smaller museums contact the relevant person.

Museums that DO answer geological enquiries

Some museums that do answer geological enquiries stated that they will and do refer some enquiries on to other museums, university departments or alternative sources of help.

Refer to other museums with geological staff	17
Refer to county archaeologists	1
Refer to university	4
Send specimens to other museum	2
Seek help from other geologist (professional or amateur)	7
Seek help from local geological society	2

40. Do you allow access to geological collections to

a) the public?

Yes	170
Yes, but never used	1
Sometimes	1
Not usually	1
No	22
No response	63
TOTAL: Yes	173
TOTAL: No / no response	85

b) bona fide researchers

Yes (& **YES** to public)	164
Yes (& sometimes allow public access)	2
Yes (in theory, if asked!)	4
Yes (but **NO** to public)	16
Yes (**no response** to public access)	32
No	4
No response (& **Yes** to public access)	6
No response	30
TOTAL: Yes	218
TOTAL: No / no response	40

40 (cont.) How is access controlled?

no information	37
unclear	2
never been asked	6
no access: staff posted elsewhere	1

Controlling access to collections

by request/appointment	78
references required (in addition to appointment)	10
signing in book	4
all/most on display	11
specimens brought from store/ study room	21
loan to museum/university dept	5
public events/tours	9
researchers allowed full access	4
society members: full access	1

Supervision

by curatorial staff	42
by curator/store person	1
by museum staff/volunteers	3
by attendants/stewards	4
by countryside officer	1
by museum staff	104
by staff depending on availability	1
supervised unless 'known'	4
unsupervised	1

Often a museum or a curator may be unaware of the scientific or historical importance, the monetary value of the items they hold or become so familiar and inured to the wealth of material they see every day. This can lead to a *blasé* attitude in allowing access to the public and researchers, with the assumption that the visitor will treat items with the same care and respect the curator would. Without careful consideration of issues surrounding specimens or collections inadvertent or sometimes deliberate damage can be caused. Even the most 'trust worthy' regular researcher should have some level of supervision as it is the curator who is legally and ethically responsible for the objects in their care.

41. Is any of your geological material on display or is it all in storage? If on display is it 'permanent' or part of a temporary exhibition or display?

Both temporary & permanent displays	45
Permanent displays	125
Small permanent displays	1
Less than 5% on display	2
Temporary displays	17
Most is visible on display	1
All but 3 items in store	1
A few	1
Planned to be on display	9
Not on display	41
No response	15

174 (67.4%) museums house permanent displays of geological specimens. Temporary displays are used in 62 museums (24.0%), but of those 17 museums (6.6%) have **only** temporary geology displays. If anecdotal evidence is to be believed there will only ever be between 1% and 5% of collections on display in museums at any one time, the remainder will be found in stores. The total number of museums in this survey displaying geological collections is about 190 or 74% of those museums holding geological specimens. These are encouraging statistics when the size of some of these collections is taken into consideration. It would be interesting to discover how these geological displays are presented, what themes they explore and how large (or small) they are.

Geology also presents opportunities to be part of multidisciplinary exhibitions and displays.

42. Please note which of the following you have concerning the promotion of geology:

A a shop/sales at reception

Yes	138
No	16
No response	104

B guidebook/book/postcard/other printed material for sale
C sale of replica dinosaurs/related goods
D sale of mineral or fossil/replica specimens
E other (please specify)

Of those museums that sell promotional material at a shop or sales at reception desk:

105 sell guidebooks/books/postcards/other printed material **(B)**
88 sell replica dinosaurs/related goods **(C)**
107 sell mineral or fossil/replica specimens **(D)**

Of those museums that did not respond to the question about shop or sales at reception:

11 sell guidebooks/books/postcards/other printed material **(B)**
14 sell replica dinosaurs/related goods **(C)**
17 sell mineral or fossil/replica specimens **(D)**
74 museums sell all three types of material

Other ways that geology is promoted included **(E)**

Geological maps / column
Programme of geological events & activities
Outdoor displays at local geological sites
Geological books published by museum
Jewellery and/or ornaments
Active web pages
Travelling exhibitions
Geology in the Museum's local studies library
Free coprolite nodule for visiting children!

I think I will be visiting this last museum quite a lot!

The range of promotional activities and commercial opportunities that are available to museums should offer a useful way to supplement income.

However, caution should be exercised when sourcing 'real' fossil and mineral specimens. There are 're-

formed' fossils made up of fragments of many and potential for over collecting by less careful wholesalers, as well as garishly dyed agates, man-made polished stones, medical claims surrounding jewellery and even resin 'fossil' dragons!

A number of museums are now restricting their commercial scope to 'ethical' companies that can prove responsible collecting. Where commercial departments exist in larger museums it is often difficult to influence buying decisions, but it is perhaps the duty of a responsible curator to ensure that they and their profession are comfortable with the practices supported by their institution.

43. Have you hosted any lectures or meetings on geology related subjects? Please give details?

No response	53
No	114
Not applicable	2
Planned	1
Yes	88

Details of lectures and meetings were broadly defined by the following responses. The number refers to the number of museums hosting this type of event, where one museum may host a number of different events throughout the year.

Activities/workshops	15
Fossil hunt	2
Rock Watch group/children's geology club	6
School sessions	4
Road-shows/fossil ID day	7
Public lectures/talks	37
Open days/tours of collection	5
Field trips/guided walks	12
University classes	8
Student placements	2
WEA classes	4
Conferences	8
Specialist /local societies meetings	27
Professional training sessions	1
Teacher INSET training	1
Too many to list!	6
Yes, but no details	3

It would seem that a number of museums run events and activities, host conferences and meetings, give lectures and offer open days. However this only accounts for 87 or 34% of the museums completing the survey (many museums listed numerous types of events they hosted).

The wording of the initial question may account for some of this, as it did not prompt museums to consider events such as children's activities and behind the scenes tour *per se*.

As a number of museums, known to the author, undertake these type of events on at least an annual (if not regular) basis, but failed to list them here, we can assume that the number of museums offering a wide range of 'contact' and 'outreach' promoting geology is higher than indicated.

One title for an event listed was "*A fistful of fossils*". One to consider for those who have run out of road-show names or have used fun, fascinating and feely adjectives just too many times!

44. Does your museum have a web page?

Yes	180
Planned	3
No	58
No response	17

Details of the museums' web addresses were added to the survey, however so much time has elapsed between the completion and return of a number of surveys that in some cases websites no longer exist and new ones have been created. Where possible, websites relating to those museums that responded to the survey are listed in **Appendix 2**.

45. Would you like details of your collection to be included on the GCG web page?

Yes	156
No	83
No response	19

Links will be created to these museums with appropriate brief descriptions relating to their holdings as an outcome of this report.

9. General Questions

46. What do you see as the main threats to /needs of your collection at the present time?

No response	49
"Not applicable"	2
None	8

Which leaves 199 supplying some details of their perceived threats to the geological collections and needs for the future.

These are extensive and are listed in **Appendix 4**, grouped as to overall size of the geological holdings.

A single comment from one museum sums up the general impression from all the institutions: *"No time to work on it. No time to collect. No money to spend on it."*

A volunteer worker entered most of the data held in this report directly from the survey forms and summed-up the overall feelings of the people asked to complete the questionnaire saying: *"Most museums have too much to do, no money to take on extra help, no money to buy equipment, no money to improve stores, no space to keep things, no chance to collect more, no where to display what they want, but really want to do it all!"*

She also said *"To he that has, more shall be given!"*

Thankfully this is pretty gloomy picture and is far from accurate for many museums. However there is a kernel of truth behind the 'wailing and gnashing of teeth' heard in most museums. Museum curators very often see their work, not as a job, but as a vocation in much the same way as teachers and carers. They are constantly under pressure to take on other duties that take them away from the core of their jobs, and many resort to undertaking curation, research and fieldwork in their own time. How many geological curators nip into museums (for hours) on holidays, go fossil hunting and bring things back for the collections or handling material, write research papers at home on weekends and evenings and on and on?

The perennial difficulty with curators is that, even with all the additional demands on time that new initiatives bring; true curation sometimes still gets done and as it does still happen there is little incentive to place additional resources at the curators disposal to undertake work that often, to the untutored eye, has little discernable benefit to the museum or institution that employs them!

47. If you have any additional comments please add them here.

The following 'additional comments' have been edited to remove specifically mentioned museums. This has been done across the board to ensure that those individuals responding still feel comfortable with their responses, as much can change between completion of a questionnaire and its analysis and publication. Indeed many of the people responding to this survey for their individual institutions have moved on and therefore their comments may not fully represent their previous employers.

Not all museums completed this part of the survey. The 'additional comments' have been broken down by overall size of geological holdings.

Over 250,000

Might lose one store in next few years. Uncertainty over any replacement

100,000 to 250,000

Overall, things are looking very positive, there is a commitment to the collections and acquiring the resources, staff and facilities needed to care for them properly.

30,000 to 100,000

Without a specific post related to the collections our system of cataloguing is unlikely to improve. Research and teaching have to be my priorities

A new geology store will be constructed at P…… in 2002-2003.

Museum undergoing major redevelopment including new store and new galleries. It is hoped that a great increase in public access to collections can be generated through the process of developing a Web site database.

The 18,000 specimens of Pleistocene vertebrates [the museum holds] should be [designated]. They are acknowledged and of International importance.

Within the last five years the position of the geology collection has been enhanced and stabilised by the recently established college-wide "Centre for Collections" This group is working towards developing the collections and securing funding. Despite past problems, the

future of the Geology Collections is more favourable than in the past

Digitisation will be a future project to raise awareness to a wider audience, improve access to collections stored

10,000 to 30,000

At present, there are plans for a new museum and resource centre/store. Until these plans are finalised it is not possible to comment on future commitment.

As the ONLY person responsible for natural history collections it is more by chance than by design that I have a geology background. However this could mean that the biology side suffers. The quality of the documentation is a major concern as it is very basic, and often wrong and is always difficult to access.

All conservation posts deleted across the trust in 1998. No day-to-day specimen conservation work undertaken since. Would be useful to complete these forms maybe every decade rather than 20 years - if only to keep us focussed on curation from time to time!!

More grants necessary for ongoing projects. Independent museums like this one need endowments to help provide for caring & collections each year - not just one off grants.

Currently piloting improved storage methods/ documentation and research on petrology collection with a view to extending to rest of collection. Large collection of sub-fossil bone with special requirements.

There is a really tricky balance for small museums, keeping and trying to develop collections, between spending time behind doors curating and researching collections and actually getting out amongst the people with the specimens and promoting what you have. Unfortunately our experience in D…… suggests you MUST, put your main effort into promotion and do the collections care and development as best you can on the side or you won't survive - people who don't know about your collection & service - they don't support you when it comes to the crunch!!

Without a "voice" keeping the profile and importance of the collection visible, it is easy to see the collection considered only of use to the specialists.

The Museum has given full support to he geological rescue curation project since 1982

Site Documentation: 5700 records. Good geological library. HQ for local RIGS

5,000 to 10,000

STAFF SHORTAGE (I am only member of staff employed in natural history) & FINANCIAL RESTRAINTS mean that the geological collection is often de-prioritised. I would add though that I believe it is now in good storage and will not deteriorate further in the short term

Good association with local Rigs group. Benefit greatly from lottery grants they acquire, (last month c£2500 for 2 steel drawer units). Future likely financial support to continue digitisation

Although staff are not specialist geologists, they have a considerable knowledge and enthusiasm for geology and place the conservation, documentation and information of the collections very high as a priority.

We are in the planning stages of a project to improve access to the collections through an on-line virtual museum/data base. The long-term aim is to establish a permanent exhibition space with temporary geological/natural science exhibition in the interim.

The registrar, who dealt with the collection, has recently left, so information is sketchy

No geologist on the staff means that fieldwork, monitoring temporary exposures, etc., is not carried out as often as it should be.

1,000 to 5,000

Once a full inventory and re-storage has taken place we can begin to develop the collections. The care and security of our collection s are our main priority, and at the moment they are safe and secure

UK Grant Aid is not available to the Channel Islands. We are in effect a multi-disciplinary "national" museum service, running several museum sites with 3 curatorial, documentation and 3 technical staff.

Survey was completed by a non-geologist, so distinctions between "rocks" and "minerals" may not be accurate

Questionnaire completed in temporary absence of Assistant Curator (Natural Science)

We have plans to improve the storage of the collection by re-boxing and using either trays or plastazote within boxes. This will make it easier to examine the collection and reduce abrasion

damage to specimens now packed into overcrowded boxes. A new display is also planned.

Since 1981 the geology collections have lost their full-time geology post; 24 geology display cases have been removed from store; about half the collections moved to off-site store; Natural History technician post deleted; General Museum Conservator post created

Hoping to loan some of collection to other museum

Curator does have access to friendly geologists and colleagues in other museums always ready to respond to pleas for help.

Concern over future of museum and staff, whilst staffing review being undertaken at present.

It's important to not see collections as isolated parts. I like to use geology in multi-disciplinary exhibitions/publications to link the past to the present and to human lives. Provides intellectual access to those people with little or no knowledge of geology.

500 to 1,000

Present policy consists mainly of passive collection and acting as a public contact point for geology enquiries.

We hold a rock/fossil Fair during the season. We organise walks every Wednesday. Curator has delivered some 50+ lectures on geological subjects to local organisations

We have a very small - 331 objects - collection displayed in a social history context. It was collected un-scientifically by the poet George Crabbe.

We exhibit beach finds under the heading "Geology and the beach" - one display case. An interesting but not significant collection - mostly common beach finds of interest to visitors

A more thorough inventory will be available next year

We care for a small Parish museum and only hold approx. 50 samples of minerals, rocks and boreholes cones relating to the mining history of the area.

We believe our collection to be representative of the fossils of the Cretaceous, mainly of the Upper Greensand but the focus of our museum is our local history society

Collection is fairly static.

Advisory visit from peripatetic curator did a deal of good for the collection, we would benefit from more input like this, especially re educational potential of collection

The museum is very small and restricted to the display of about 300 miscellaneous items of local interest. We would welcome specialist advice on the few items held.

The geology the museum owns is not accessioned, and consists only of a small collection of fossils. Due to temporary storage problems access to these has been impossible for more than a year. The situation will be addressed when the new store is built this year.

We acquired our very small geological collection as par of a large general collection consisting, in addition to the geological material of coins and medals, ethnographic material and miscellaneous items. This was put together by a local collector 100years ago and bequeathed on his death to the town.

If needs were met it is likely that the collections would reveal many hidden "secrets"

We are really a social history museum, and most of the geological items here are from the collections of local interested squires who gathered them in the 19th Century

The storage facilities for the entire collection should be upgraded from Autumn 2002. As part of the development plan we hope to prioritise objects needing conservation and secure funding for this

Use macro-scope for fossils.

We are a small local museum; the remainder of the form is not really relevant to us

Less than 500

The geology of the island seems to have been of greater interest in relation to archaeology and the natural environment

The geology collections are not numerically significant within our overall collections. Who are FENSCORE?

Geology is a small part of collection but a fair amount of display space is dedicated to the subject. It would benefit however from more interesting interpretation.

Generally not collecting geological specimens. As there is no one in the team with the necessary

skills we are not looking to greatly enlarge our current collection

E... Museum is voluntary (mostly) and independent. 1 curator & 5 part time custodians. Limited funds, people, space etc.

Our Geology collection amounts to ten fossils (plant and coral) and seven other rocks, most of which are stone tools (e.g. fishing weights) so are classed as Social History; Geology is not a priority for us at the moment!

Most of our Geology collection was transferred to another museum approx. 30 years ago. It appears that they left stuff they didn't want.

The collection is very small and is used as part of the rocks and soils programme that we offer to schools. The collection was donated to us by a private collector

In June 1991 the Recreation Committee approved a report-recommending disposal of the 350 Geological specimens in accordance with the MA's Code of Practise. A few curators in the area examined them but did not want them so we still have them.

Although collection is numerically a high proportion of total collection, it is not of great geological or visual interest.

The collection is a very tiny proportion of our overall holdings. It comes a long way down the list of priories for attention. However, hey may be sampled as part of an overall survey latter this year (2001)

Museum cares for the collection of the former K…….. Museum and Art Gallery (closed 1990) all geological collections came from K…….. This museum's Acquisition Policy does not include Geology.

No information about size of collections

The original collections were made by former priests and displayed at the seminary museum. At the moment, the geological collection is not exactly relevant to any of the items on display. It definitely requires to be catalogued urgently.

Geological collection held by S……. Museum Service is not held in high regard by the managing local authority.

Too much pressure to complete form.

48. Are you or any of your staff a member of the GCG?

Yes	73
Institutional only	5
No response	17
No	163

Museums were not asked if they were institutional members, therefore these figures are not available, but 5 museums that did state they were institutional members did **not** have staff who were individual members.

49. Do you give permission for your details to be kept on a GCG database?

Yes	233
No	13
No response	12

The information held relating to these 25 museums will now be removed from the database on which this report is based.

50. Do you agree to the information in this questionnaire being shared with FENSCORE?

Yes	208
No	25
No response	25

The comment "Who are FENSCORE?" in one completed survey, does imply that others who have completed the questionnaires may, similarly, not know this organisation, or what it sets out to do.

Therefore, the following is a brief description of FENSCORE or the **Fe**deration of **N**atural **S**ciences **Co**llections **Re**search.

"The Federation for Natural Sciences Collections Research is an adhoc body set up in 1980 to co-ordinate the activities of regional groups of curators in the UK who then were beginning to survey natural science collections [Botany, Geology, Zoology] in their areas. After two decades a great deal of information has been gathered and published, and …. has been set up to provide both a searchable national database of collection information, and to provide current and archive information about collections research in the British Isles." http://fenscore.man.ac.uk/

The FENSCORE database strives to list collections and associated individual field collectors and/or amassers of material.

10. National Museums

It was the original intention to include all museums in the general findings for the 2001 survey. In 1981 the Natural History Museum (NHM) and the Geological Institute were treated as separate entities. With other large institutions such as the national museums of both Wales and Scotland, and large University museums to be considered in 2001, it was felt that it would be advantageous to compare across a broader spectrum.

Unfortunately, amalgamation of 'results' was complicated by the late receipt of the completed British Geological Survey questionnaire and the non-return of the NHM (mineralogy) questionnaire.

The results for the NHM (palaeontology) have been included in the main body of this report.

1981

The Geological Museum has a unique administrative structure among British museums in which the museum staff are not responsible for the curatorial care of collections but perform a display and public service role. The collections, perhaps 10 million or more specimens, are the working material of the Institute of Geological Sciences. They are dispersed between Edinburgh, Leeds and London, but centralisation plans may lead to their combination at Keyworth, near Nottingham. This opens some stimulating possibilities for their future use, but at the risk of leaving the Geological Museum isolated as a mere exhibition centre. The agreed collaboration with the British Museum (Natural History) offers a course that could evolve into a long term solution to this problem, but urgent efforts should be made to ensure the survival of the strong British emphasis of the Geological Museum and its highly individual style of presentation.

2001

4 years after the publication of the Doughty report the Geological Museum was closed and re-developed, resulting in the removal of the British Geological Survey collections [Institute of Geological Sciences] in 1985, with control of the museum transferred to the Natural History Museum.

As such the individual response from the BGS is shown below; with figures not limited by the original survey options.

British Geological Survey, Keyworth, Nottinghamshire and Edinburgh

NATURE OF COLLECTION

1 What percentage of your total museum collections are geology specimens? **100%**

2 How many specimens are in your geology collections? **approximately 15,000,000**

3 Approx. how many specimens have been added to the collection in last 10 years? **approximately 500,000**

4 Please describe the content of your collection indicating which category you have most of in ascending order from 1-5, 5 being the most, 1 the least and 0 being none at all.

By volume:	
Borehole Cores	**5**
Fossils	**4**
Rocks	**3**
Thin sections	**2**
Minerals	**1**

Thin sections include polished mounts, fluid inclusions etc.

Other major holdings in approximate order of decreasing size:

Offshore and seabed samples; Soil and sediment samples; Rock & mineral powders; XRF pellets; Water samples; SEM stubs; Geotechnical test samples.

5 Do you have any other associated archive holdings e.g. maps, field notebooks, photos? **Yes**

Please give details. **The National Geoscience Data Centre (one of the Natural Environment Research Council's nominated Data Centres) houses the major national collection of geological maps, field notebooks, field slips and photographs, as well as borehole logs, and site investigation reports.**

6 To the best of your knowledge is any of the material you hold type, figured, cited material? **Yes**

How many type, figured or cited specimens do you hold? ***c.* 40,000 specimens**

Is there a published type catalogue? **Yes**

If yes, please give reference. **Various publications cover individual parts of the collections**

7 Do you have any publications relating to the collections? **Yes**

8 Is your geology collection designated? **No**

DOCUMENTATION

9 Proportion of the collection documented to MDA standards? **approximately 75% documented to MDA standard appropriate to the collection**

10 Is the collection documented on a computerized database? **Yes, Oracle**

What proportion of your collection is on the database? **60 – 70% at specific level; 100% at collection level**

Is all or part of the database available to the public? **Yes**

Is any of your collection digitised? If so what proportion? **Yes, approximately 5% (in addition almost 100% of maps, field slips and borehole logs have been digitised)**

11 What other systems of documentation do you use for the geology collections? **Handwritten registers, card indexes, field collecting sheets, field slips**

STORAGE

12 Is the main proportion of your collection inside the museum (or other building) or within an offsite store? **All stored in purpose-built facilities on three of BGS's main sites**

13 Please describe how your collection is stored. Please indicate the proportion of the material stored in each way. N.B. this can add up to more than 100%

E, shelving **50%**
F, drawered cabinets **20%**
G, other (please specify) **individual trays 30%**

14 Are individual specimens stored in conservation grade trays? **Yes, when fully justified 10%**

15 What proportion of individual specimens are packaged with plastazote or tissue? **~ 5% - but not appropriate for most borehole material, thin sections etc.**

16 Has all or part of the collection been re-stored in the last 10 years? **Yes, Borehole collection re-boxed when appropriate; palaeontological material re-trayed when necessary**

17 Please describe what system of classification is used to arrange material in store.

Prime palaeontological material (macro) stored by stratigraphy and then taxonomy; Micropalaeontology split into calcareous micro & palynology – each then by serial accession; Other palaeontological material by serial accession (i.e. locality based); Borehole & petrology collections arranged by accession.

ENVIRONMENTAL CONDITIONS

18 Is the environment in the storage area monitored? **Yes**

19 If so what monitoring system is used? **Thermohygrographs & dataloggers**

20 How often is the area checked? **Weekly: dataloggers record minute by minute**

21 If known, what is the maximum %RH and minimum %RH in the store over a year? If material is kept in more than one store, please include figures for each location if possible.

Biostratigraphy museum & core store vary from 30 – 75% RH over a year. Please note however, that the store RH is essentially irrelevant: the critical figure is the humidity/ temperature within the storage trays & drawers. Dataloggers show these to be stable.

22 Are the storage area environmental conditions stable, i.e. fluctuations of + or - 5% over a month? **Yes**

23 Are environmental controls in place i.e. de-humidifiers, controlled air-conditioning? **Yes, Controlled heating to keep core store above dew-point.**

24 Are any of the specimens stored in microenvironments? **Yes, drawers & trays all act as micro-environmental buffers – so room conditions have very little effect. Some specimens kept in artsorb buffered Stewart boxes.**

CONSERVATION

25 Has a conservation survey been conducted in the last 10 years? **Yes, brief survey by Chris Collins, 2000; ongoing survey by our own conservator**

26 Has any of the collection undergone specialist remedial conservation in the last 10 years? **Yes, pyrite treatment; impregnation; repair (fracture) etc.**

27 Using the following classification, what is the current condition of the specimens? A, good = sound and clean; B, indifferent = sound but dirty or exposed to risk; C, bad = specimens deteriorating physically due to pyrite disease, fragmentation, constant abrasion or other causes.
Good 80%
Indifferent 20%
Bad 0%

28 Do you have a professional conservator as a member of staff, or access to conservation support? **Yes**

29 If so, do they have any training in geological conservation? **Yes**

PERSONNEL & MANAGEMENT

30 Does anyone on your staff have any geological training or background? Please describe qualifications/training as fully as possible.

Three qualified to PhD; several with degrees; several with GCSE or A level geology, or part way through Open University courses.

31 How many members of staff are working full-time on the geology collection? **11**

32 What proportion of their time is spent on curation of the geology collection compared to other activities, e.g. exhibitions? **100% of time spent on curation, visitors & enquiries. Very little on exhibitions.**

33 Do you have any volunteers who work on the geological holdings? **Occasional volunteers.**

If so, how are they supervised? **Supervised by the appropriate staff member.**

34 Do you have and acquisition policy? **Yes**

Does it refer to geological materials? **Yes**

35 Do you have an active policy of collecting? **Yes**

36 Are the geological collections referred to in the museums overall strategic plan? **Yes**

37 Have you been successful in obtaining grants for the geology collections in the last 10 years? If so please give details. **No**

SERVICES

38 Do you identify geological material for the public? **Yes**

39 If no do you have alternative arrangements such as sending material to other museums for identification? **N/A**

40 Do you allow access to geological collections to
a) the public **displays & guided tour only**
b) bona fide researchers **Yes**

How is access controlled? **Researchers are individually supervised**

41 Is any of your geological material on display or is it all in storage? If on display is it 'permanent' or part of a temporary exhibition or display? **Limited amount on permanent display**

42 Please note which of the following you have concerning the promotion of geology:

Yes A a shop/sales at reception
Yes B guidebook/book/postcard/other printed material for sale
Yes C sale of replica dinosaurs/related good
Yes D sale of mineral or fossil/replica specimens
Yes E other (please specify) **Geological equipment, jewellery etc.**

43 Have you hosted any lectures or meetings on geology related subjects? Please give details? **We host numerous meetings e.g. GCG Database meeting, May 2002; YGS/EMGS meetings etc.**

44 Does your museum have a web page? **Yes, www.bgs.ac.uk**

45 Would you like details of your collection to be included on the GCG web page? **Yes**

GENERAL

46 What do you see as the main threats to /needs of your collection at the present time? **We are being approached by numerous organisations, including university departments, commercial companies and societies, to 'rescue' or take over their collections. This places a heavy demand on our staff time and budgetary resources.**

47 If you have any additional comments please add them here. **N/A**

48 Are you or any of your staff a member of the GCG? **Yes**

49 Do you give permission for your details to be kept on a GCG database? **Yes**

50 Do you agree to the information in this questionnaire being shared with FENSCORE? **Yes**

11. Assessment of findings

Where appropriate findings, from the 1981 State and Status report, have been re-presented here in ***italics*** to allow some comparison to the findings of this report.

2001

From the 1981 report an understanding was gained for the first time of the state of the material heritage of the science of geology as represented in the museums of the UK.

It illustrated that the nation's geological collections were in a state of disorder, neglect, mismanagement and decay on an unsuspected scale. Fundamentally, little can be shown to have changed in the current state and status of those collections. However, with changes in the structure of museums, new funding criteria and renewed interest in the learning and leisure potential of museums and heritage, the roles and expectations of curators have changed too. Many curators have taken on much wider roles. In some museums, currently feeling the benefit of direct government funding via the Designation Challenge Fund, the Heritage Lottery Fund, Renaissance in the Regions and others, additional resources are being made available to allow work to be undertaken, including projects that have been hoped for for decades.

1981

This mass of geological material, perhaps the most important single national geological resource in the world, should be a source of pride and a spring of scientific stimulation to the whole nation. Almost all of it is in public ownership in the Institute of Geological Sciences [British Geological Survey]*, the British Museum (Natural History)*[the Natural History Museum]*, other national museums, the local authority museums and the university museums. In reality it does not exist as a national resource at all, …….. It exists as hundreds, perhaps thousands, of collections isolated geographically, professionally and organisationally, and in terms of public awareness almost all of these collections might not exist.*

2001

In recent years a number of institutions and university departments have closed their museum doors. In Cornwall alone, two out of the three pre-eminent geological collections held in this crucial mining county no longer present a publicly accessible collection. This is a disturbing state of affairs that seems to be currently without an obvious resolution.

1981

Approximately half the museum authorities in the UK, some 280 in number have geological collections, of which a third are large.

2001

252 museums from the 259 that responded clearly stated that they held geological specimens in the museum.

Of the remaining 7, two 'share' collections with other museums as part of a wider organisation and were sent questionnaires based on 1981 survey, two more display geological material, one owns geological ephemera and archives, but no specimens and one has a very small collection that have never been catalogued, one stated "Too much pressure to complete form".

1981

It is conservatively estimated that 3 million geological specimens are in the care of the provincial and non-national London museums and the real figure could be several times greater.

2001

It is difficult to re-visit this estimate as a number of museums failed to estimate the size of their collections, including a number of large institutions. However conservative estimates, excluding the Natural History Museum and the British Geological Survey stand at just under 6 million geological specimens.

1981

Against this background one particular category of fossil material is so important that it must be isolated for discussion. Type specimens are of such overriding scientific significance that any museum has, in effect, committed itself to the ultimate curatorial obligation and the highest academic standards. The type concept is complex and hedged in by internationally agreed rules but stated simply it says that any specimen or group of specimens which are discovered to be new to science, and which are named, described and published for the first time achieve type status. They assume paramount importance as name bearers and become the standards of comparison for all similar material subsequently discovered anywhere in the world.

Since the classification of all fossil and living organisms is based on the species concept, which is rooted in type specimens, it can be appreciated that deterioration, damage or loss of type material is an irreparable loss to the whole of science. It usually leads to disputes which can never be fully resolved.

…..…There are undoubtedly geological Rembrandts decaying in our museums alongside the hosts of lesser collections.

1981

Perhaps of all the museums in the report, those which might be expected to recognise their scientific responsibilities are the university museums. The reality by no means bears this out. 38 university geology departments and institutions are included in this survey.

[12 university geology departments responded to the 2001 survey]

Despite large, and usually important collections, fewer than half have curators, and most of the curators bear the titles as a secondary responsibility to a lectureship or a technical position. Most of these departments acknowledge that they have, beyond their teaching collections, material relating to higher degree theses and their related literature, and large research collections compiled by their own staff. They appear, however, to be blind to the status this material imposes, and whether they wish to employ the name "museum" or not, they cannot escape that they have curatorial duties while they retain it.

2001

It is understood that many such university departments have closed down or re-aligned their interests since 1981, and in some cases disposed of their associated collections by a variety of means, with thankfully, many collections now under the care of established and *registered* museums.

1981

It is literally true that not a single person knows the variety, quality and significance of the geological collections housed by UK museums. ...The reasons for this ignorance are two-fold. There is insufficient documentation of the collections which do have geological curators, and there is no central agency whose concern it is to maintain and update documentation of the rest and centrally collate records.

2001

As discussed in the body of this report, 20 years on this is still the case. Various bodies have made many recommendations in the intervening years. Even after many attempts to define the necessary information and standards of documentation, not enough attention has been paid to the objects and their associated histories. Government initiatives have concentrated on inventories of collections, often with no reference to earlier documentation, using non-specialists to catalogue items that are often listed as *unknown* identification, *unknown* method of acquisition and *unknown* storage location. Doughty presaged this in the following statement:

1981

…if no standardisation of record structure and technology is achieved, the resulting ambiguities will lead to new generations of problems for future curators. Professional skill is the only basis of sound work, and regardless of the mechanisms which may be adopted in the future, the only worthwhile museum record is that written by a qualified and experienced geologist with developed curatorial skills.

2001

The current task of understanding or indeed unravelling such work that has been undertaken in many museums over the past 20 years seems unending. Indeed, yet another round based of frustrating *number crunching* exercises is being promoted through *Accreditation*. These inventory projects have often been *supported* by an influx of non-specialists, with little or no experience of the subject or museum collections. Without the underlying knowledge decisions about what to record, why and where are often simply avoided with the resulting database information being incomplete, misleading or even fundamentally wrong. Even when such documentation is done well and to set museum standards, those standards are not necessarily comparable across the UK, nor are the databases used able to share information with others.

1981

… Storage space is a problem in almost all museums, and storage space meeting the atmospheric requirements of geological specimens is rarely met. Suitable geological furniture is sparse, and even drawered cabinets, the most convenient of all structures, often fail to meet geological requirements. … if drawers do not run smoothly specimens are subject to unnecessary jolting, if they are too large it is difficult to carry them when fully loaded, and if they are too lightly constructed, warping under the load of geological material is inevitable. Cardboard box and packing case storage is symptomatic of the general geological malaise and should be squarely branded as unacceptable.

2001

Museums throughout the UK use a wide variety of storage solutions, many of which will rely on recycled furniture not particularly suited to the purpose, but affordable. Others are able to develop whole specially designed purpose-built storage systems. However, using these systems relies on the longevity of funding to add such furniture and the longevity of the manufacturers to supply addition items as and when needed. The re-storage of any collection is never *complete* as items can be added, new knowledge rejects older materials, and furniture and packaging deteriorates or changes it properties over time. Debate over wooden versus metal storage is still ongoing, many plastics are untried over longer time spans and the push towards visible or accessible storage drives many decisions. As each new curator is employed, new storage solutions will be explored, often inadvertently reverting to a previously discarded system. For many museums the real need is for flexible, reliable, inert, safe, affordable storage solutions: sharing steps towards such solutions would be advantageous.

1981

… The lack of a clear national policy on the use of collections has resulted in curators losing sight of their basic obligations to the public, the ultimate owners of the objects...

1981

Failure to assert the importance of collections simply compounds management problems. Pressures from local government committees, whose political composition makes them intrinsically unstable and transient, are acceded to. Understandably, such bodies press for exhibitions, displays, demonstrations, lectures, educational involvement and similar short term activities where an injection of resources can be seen to yield "results" within a political term of office. But museums cannot perform their essential role on such a time scale, and the compiling of collections, their housing, their cataloguing and the essential scholastic work from which all else derives.

That is not to deny the service aspects of a museum's programme of activity, but good displays can only be based on good collections, and good collections can only result from curatorial discernment, expert care and sound scholarship.

1981

The time is also ripe for a vigorous challenge to the conception that education and display are the prime public functions of museums. This narrow interpretation and the stereotyped presentations which emerge from it are, if not anachronistic, at least out of place with an age of unprecedented ease of communication perhaps verging on the greatest leisure revolution ever to confront the developed nations. Mines of neglected culture of the kind represented by the geological heritage in our museums could be every bit as valuable against this future as our North Sea oil is today, and the relationship between the two is not accidental.

2001

Education, today, has taken on a much wider meaning that 20 years ago. *Lifelong Learning* denotes education, sharing knowledge, learning through interaction and much more. As such museums are seen as main players in the lifelong learning schemes based on culture, heritage and leisure. Whilst compiling the lists of museum web addresses, it was interesting to see which council directorate or department museums in local authorities fell under. These included *Lifelong Learning, Heritage & Leisure*, *Tourism,* and *Community Services*.

This should not conflict with the underlying ethos of geological collections as the storehouses of raw earth science. But, unless museums promote what they hold in some publicly accessible way, the owners of those collections (often, but not always, the public themselves) will be justified in questioning the museum's continued existence. The museum community, as we are all aware of, cannot simply assume that the people that ultimately pay our wages understand why it is important to preserve these collections.

The use of geological collections to support education in schools has itself been adversely affected in the past 17 years by the development of the National Curriculum (following the Education Reform Act, 1988) and the removal of fossils, rocks and minerals as a specific subject for investigation. This is despite the sustained interest from schools in the subject as a whole. In more recent years, as schools have become more comfortable with interpreting the spirit of the National Curriculum, many more school visits to museums are re-exploring the old favourites.

In 15 days (March 2005) over 1000 school children specifically visited a small dinosaur exhibition at an average size local authority museum, where in the same period, the previous year, just under 300 visited the museum during the showing of a contemporary art exhibition to take part in a variety of art workshops.

1981

It would be a mistake to assume that the appointment of a large number of geological curators in the

appropriate places would solve the problems of geology in museums. [Many] *of the museums in the survey said they needed help, and a significant number of them already have geological staff. Geology is now so complex, and the specialised collections in our museums so demanding, that only experts in particular groups of geological material can help.*

2001

A recommendation as a result of this survey is for the GCG to seek funding to support *all* museums, regardless of whether they employ a geological curator or not, in the identification of and expert advice for care of their geological holdings (see **Section 12** for more details).

Following the *Renaissance in the Regions* report and the scheme to support free entry to national museums both initiated in 2001, it is perhaps, evidence that 20 years after the first 'State & Status' report, central government funding has trickled down to the grass roots of the museum world. Unfortunately, much of the benefit of this re-invigorated involvement and attention is focussed on the 'learning and inclusion' outcomes (worthwhile in their own rights) but not on the collections themselves. As museums are in a unique position in the leisure and learning marketplace to support any 'learning outcomes' with real and historic objects, now is the time to re-appraise the focus of that funding and ensure that the collections will continue to be available and be developed for the future generations of academics, museums users, interested amateurs, enthralled children and disinterested teenagers alike!

12. Recommendations and further investigation

The following notes contain recommendations for the way forward and highlight areas where further investigation would be invaluable to the geological and non-specialist curators, and individual museums across the UK.

Size of holdings

It would be useful to gain a more accurate understanding of the size of the UK's geological holdings. If approached, many museums will be able to give an approximate figure for the number of specimens they hold, or at least a high and low end estimate. For example, the 1981 survey's highest estimated answer available was ***up to 100,000***. This was increased in 2001 to ***over 250,000***, though a number of museums are likely to hold many more than a quarter of a million specimens.

Acquisition of specimens

The type of material that is being added to collections and how it is being added are crucial questions to understand the way in which current geological heritage is being preserved in museums. Is every museum collecting systematically by field collection or purchase, or do most museums collect randomly and sporadically based on an individual's whim, a bequest (where there is no possibility of adding anecdotal information from the collector), or by donation?

Is the material added to the UK's collections ensuring that 'gaps' in collections coverage are being filled? There is a need to understand the coverage and extent of holdings, but as this relies heavily on good documentation with databases that will 'talk' to each other, it seems an unrealistic aim.

Restriction on increasing holdings

What restricts the growth of collections? Can anything be done to alleviate this or re-direct resources to rescuing vulnerable collections? The GCG monitor collections at risk (where known) and offer support and advice on the care of such collections, but often if a collection is to be disposed of, it is difficult to find an institution willing to take on the additional burden of curatorial care. This is increased when it is perceived as falling outside the remit of an institution's collection policy.

If size of stores is the major restricting factor, advice could be given on the best use of space (though curators are often responsible for *fitting a quart into a pint pot*!), or there may indeed be a future for regional or shared stores in these instances. Should museums collections stagnate and not expand, or should they be funded to continue to increase material that is perceived as being locked away?

Databases

The UK's museums are storing more and more information on computer databases. In an ideal world, all databases would be built on the same structure and able to transfer data between them. As this is not, nor ever likely to be the case it is important to understand what levels of information are being recorded beyond the SPECTRUM standards. As the crucial data associated with geological specimens extend into field collection information, precise locality and stratigraphy of the specimen, multiple identifications such as current scientific name, old scientific name (if taxonomy is to be tracked), common name (for those non-experts in *Spumullarian* morphology for example) and historical provenance, now would be an appropriate time to revisit the MDA geological specimen recording cards and assess the current *field names* or *descriptive headings* used in museum databases.

Insurance valuations

Many attempts have been made to find sensible ways of assigning an insurance value on natural history collections. As *Accreditation* takes effect it will again be highlighted as a requirement to estimate value of collections. There is an open market for many minerals and fossils, other items may need to be assessed based on cost to go into the field and collect again, but as most curators are aware some items are so unique, no market value can be placed on them. These include type fossil specimens, minerals from sites long closed and specimens of enormous scientific value when associated with a collector or body of work but *valueless* if removed from that context. Rather than continually attempt to guess the value or pluck a figure out of the air, or indeed invite a dealer to take a tour of your collection with a calculator, perhaps a concerted effort should be made by the natural history museum community to find a long-term solution to this perennial problem. This does not mean we should arbitrarily place insurance values on specimens that will then never be used, displayed or loaned to other organisations due to the perceived monetary risk, but present MLA with a response to the issue of insurance value for natural history collections even if that

response is that insurance valuations are unachievable for the vast majority of the UK's geological collections.

Historic collections

FENSCORE have gone someway to achieve the aim of recording the host institutions for individual collections and associated collectors material. More work is being undertaken in many museums to understand the acquisition history of collections. In partnership with FENSCORE the GCG could act as surveyors in smaller museums with non-specialist staff, to record the names associated with the material. In past editions of the Geological Curator (journal of the GCG) and in other organisation's publications, attention has been paid to label and handwriting examples of individual collectors and biographical information about such collectors. This line of research could be resurrected as part of FENSCORE or specifically by the GCG on its website, to act as a reference tool for smaller museums with little associated information, and could be added to and developed over time.

Collectors and collectors

When undertaking historic research on collections it is often difficult to distinguish between *field collector* and *collector or amasser* of a collection or specimen. From a perspective of sharing information about collections on a national and international level, it is crucial to gauge other organisations' understanding and use of such terms.

Collections on display

As anecdotal evidence suggests that between 1% and 5% of museum collections are on display at any one time, it is essential in the current political climate to establish and support with evidence how your collections are used. This is a useful self-assessment tool in its own right, but as funding streams often require evidence of *increased value and access outcomes* for any project, it is becoming essential to measure this against some benchmark.

In many cases referred to in this report, small museums display all or none of their geology collections. Understanding why this is the case will give indications as to where the GCG and larger museums can help to make a small museums' geology specimens work for them. Often the only material collected is specifically for display, and collections donated in the past may be little understood and therefore difficult for the non-specialist to interpret with any level of confidence. *Geology and the Local Museum* (Knell & Taylor, 1989) helped a number of small museums use their collections more effectively, but an update is needed.

Displays are the most reliable and effective way of promoting geological collections and the subject itself to the general public. They are the public face of a collection and are often assumed to represent that museum's total holdings.

As such the re-display and re-invigoration of geology displays is essential. How often these geological displays are re-exhibited will often give an indication of the level of funding that museum receives, the enthusiasm of the manager or the energy of the curator.

Often museums and curators would welcome an opportunity to use a part of their collection to support touring exhibitions. With temporary exhibitions being created by many museums to display their own collections it should be possible to support the development of such displays and offer them as small touring exhibitions. There is currently a dearth of small scale, affordable, natural history displays available for hire. Viewing geology in a wider context, successful themes explored in UK museums have included: rock art; geological landscapes in paintings; geology in the home; fossils and folklore; gems and jewels; industrial and mining history etc.

If collections have no public face, other ways must be sought to make them accessible in some form, to ensure the long-term future of such a collection.

Range of use of collections

By understanding how museums of varying sizes and staffing levels use the geology collections they hold, schemes can be suggested for the development of specimen based education, loans, research, display and more for those museums unsure of their holdings, and indeed those museums that have simply run out of ideas.

The number of loans or on-site research visits per year from individual UK institutions would give an immediate picture of the level of academic use a collection supports. Any such picture should include school loans, as these are a valuable and vital method of engaging with future academics, curators and even directors.

Mineral systems for sorting collections

Further work would be useful in understanding the different systems used to store mineral collections. In many museums Hey's mineral index is the primary classification method, however in museums with non-specialists, this often-seeming impenetrable system of code numbers must be extremely difficult

to approach. Supporting training in use of such systems (and further into stratigraphy, lithology and taxonomy) would enable non-specialists to make sense of their collections and ensure they were in an understandable order for anyone wishing to use them.

Further, as museum documentation on databases advances, many simple lists can be output to show the collection coverage. As a chemical system is universal, not open to much interpretation, mineral collections would be an ideal area in which to begin to produce national lists of holdings (particularly of the rarer mineral species).

National coverage of geological collections

Without an understanding of current holdings throughout the UK, the geological community cannot make concerted efforts to develop representative geological collections for the nation. Undoubtedly, an ultimate aim of any survey of museum holdings would be to compile lists of gaps in such coverage and aim to fill them. This is a long way off, and may never be achievable, but a broad understanding of UK holdings would at least to point the way. Fundamentally, it is irrelevant where these collections are housed as long as they are publicly accessible, publicly 'owned' and cared for in a professional and accountable manner.

Storage requirements

Based on the responses detailed in this report, it becomes apparent that many museums are unaware or unfamiliar with the fundamental storage requirements of geological collections. In multidisciplinary museums this may be forgiven, though less than understandable, as many geological collections care publications and indeed training courses are available. Basic training or simple fact sheets in storage requirements for geology collections, aiming to give a broad understanding of deterioration, cause and effect, possible sources of damage and the risk that may be posed to the user, would be a valuable method of promoting the continued care of geological collections in museums with non-specialist staff. Such *simple* fact sheets could be sent directly to those museums who specifically asked for assistance and advice (Appendix 4).

Condition surveys

Condition surveys have been carried out in the past, often to the great benefit of the institutions who undertook them, many have been supported by regional initiatives, but so far none are comparable across the whole gamut of UK museums. It has become apparent in Sections 5 & 6 of this report, that the condition of stores, collections and individual specimens is extremely subjective. It depends greatly on the knowledge of the assessor, but in some cases, as can be appreciated by many, it may even depend on the morale of the assessor! To be able to compare the condition of any collection to any specific level, all surveys would have to be undertaken by the same person or team of people to provide consistent results. This would allow museums to measure themselves against a set benchmark and apply for funding based on their *actual* rather than perceived condition. When this is taken into account with *importance or status* of the collection it would present a more valuable impression of the state of the nation's collections. Whilst not suggesting that this type of project be immediately undertaken on a huge national scale an example of such practices is available for scrutiny through the National Preservation Office. This method of training museum staff, supporting the surveys, random statistical sampling, strict delineated terms for the assessment of condition, and the provision of a 'number crunching' service appears to be workable. It may be something the GCG could adopt and adapt, or it may be more appropriate to have an available comparison with other areas of museum collections with which to lobby museum managers for resources.

Contacts for advice

One recommended outcome of this report is the construction and maintenance of a database of willing contacts for museums to ask for advice and assistance relating to geological collections, their care, conservation, management, use, interpretation, display, research etc. This may list those in the geological museum community, or in a wider academic, industrial or voluntary capacity that could offer practical help for free, for expenses or via grants and paid contracts.

As many current volunteers and 'trainees' desperately try to start their career in museums, this may be an opportunity for those who are trying to gain experience in museums to advertise and develop their services! These individuals will often have geological degrees, PhDs and interpretative or education experience and may be available for contract work for identification, documentation etc.

The GEO-Curator email discussion group (see GCG website) is often used to share advice, ask for assistance and advertise current available positions. This use could be expanded and promoted to the non-specialist museums.

Expert identification

A funded pool of *experts* should similarly be made available to *all* museums holding geological collections. These experts would potentially be able

to identify specimens in a museum collection that have gone un-named or un-speciated for decades. Such experts need not be museum staff, but could be recognised academic experts in a very narrow field. This service could follow basic assistance in sorting and identification by the *museum geologist* with a broad knowledge of the subject. Where their expertise fails, in say identification of secondary ore minerals, Carboniferous amphibians or Devonian coral species, it could be a matter of hours for an *expert* in the field to identify with confidence such specimens. In conjunction with this, hand lists or online databases could be complied of any such holdings in museums which would act as a future, reliable resource for any other researchers in similar fields. Though much of this work is currently undertaken, it often depends on interested academics, actively searching out specimens that are of immediate interest. However to search these specimens out, they often rely on a museum knowing exactly what they hold and this has to rely on some level of accurate identification, a potential vicious circle. This type of work was proposed as an outcome for a national geological *subject specialist network*. However MLA declined the GCG's funding application. Other ways of achieving these ends should now be explored.

It must be noted that this should be available to any museum with geological collections, as many *museum geologists* and *non-specialists* alike struggle to identify unfamiliar groups of specimens.

13. References, further information and acknowledgements

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Useful web sites

Geological Curators' Group
http://www.geocurator.org/

Society for the Preservation of Natural History
http://www.spnhc.org/

Museums, Libraries & Archives Council
http://www.mla.gov.uk/
The MLA is a non-departmental public body, sponsored by the Department for Culture, Media and Sport, with responsibility for the strategic development of museums, libraries and archives in England. Includes information and background to *Designation* scheme.

Scottish Museums Council
http://www.scottishmuseums.org.uk/
The SMC is the membership organisation for local museums and galleries in Scotland.

Museums Archives and Libraries Wales (CyMAL) http://www.cymal.wales.gov.uk/
Established in 2004 as a policy division of the Welsh Assembly Government.

Northern Ireland Museums Council
http://www.nimc.co.uk/
Established in 1993. Principally funded by the Department of Culture, Arts and Leisure for Northern Ireland.

Museums Documentation Association
http://www.mda.org.uk/
Refers to 'Accreditation' and registration of museums.

National Preservation Office
http://www.bl.uk/services/npo/npo.html
Involved in the preservation of and continuing accessibility to cultural heritage materials held in libraries, archives and museums in the United Kingdom and Ireland. The NPO hosts the United Kingdom and Ireland Blue Shield Committee.

Federation of Natural Sciences Collections Research http://fenscore.man.ac.uk/
National database of natural sciences specimens categorised in groups by their associated 'collectors' or individuals who amassed a collection. The data is based on information gathered by regional collections' research units, made up of museum curators.

The 24 Hour Museum
http://www.24hourmuseum.org.uk/
A web-based portal for information and contact details of UK museums, primarily funded by the MLA.

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APPENDIX 1a. The 1981 questionnaire

Geological Curators' Group

Geological Resources Questionnaire

The following is a re-typed version of the original 1981 survey, which allows comparison between the level and style of questions in this survey and the 2001 version.

Name:
Institution:
Inst. Address:
Position:

1 Does your museum or institution have a geology collection?

- Yes
- No

2 How many specimens are in the collection?

- Less than 500
- 500 to 1000
- 1000 to 5000
- 5000 to 10000

3 Does your collection incorporate in part or in total named collections of private collectors or institutions?

4 If such collections are incorporated could you name them here:

5 What proportion of the collection has the collectors' data relating to individual specimens?

- Up to 25%
- 25 to 50%
- 50 to 75%
- over 75%

6 What form do the data take?

- Labels with or on specimens
- A catalogue, ledger or register
- A card index

If forms vary for different parts of the collection or if there are other complications, please state them here.

7 Is a printed catalogue of part or all of the collection available to the public?

- Part
- All

8 How is the collection stored?

- In drawered cabinets
- In shelved cabinets
- In cardboard boxes
- In crates or packing cases

If the collection is stored in a variety of ways please say here what proportions are stored in each way.

9 What is the condition of the specimens?

If the condition is mixed please state rough proportions on dotted line.

- Good
- Indifferent
- Bad

Good = sound or clean

Indifferent = sound but dirty or exposed to risk

Bad = specimens deteriorating physically due to pyrite disease, fragmentation, constant abrasion or other causes

10 Are the specimens stored according to some system/s?

- Yes
- No

If yes could you give details of the system/s used?

11 If there is a museum register, catalogue or card index or similar record could you say whether it covers the

- whole collection?
- most of the collection?
- less than half the collection?
- no register or catalogue?

12 Is the collection sufficiently well organised to permit a user with basic geological knowledge to locate specimens required?

- Yes
- No

13 Does the collection contain:

- rocks?
- minerals?
- fossils?

14 If the collection contains rocks could you indicate how many specimens, or what proportion of the collection:

- whether the collection gives good general coverage Yes No
- the collection gives good local coverage Yes No
- the collection has any major strengths Yes No

If "Yes" to last, please specify

15 Does the rock collection contain any of the following categories of specimen?

- Figured specimens
- Cited specimens

16 If the collection contains fossils could you indicate how many specimens, or what proportion of the collection:

- whether the collection gives good general coverage Yes No
- the collection gives good local coverage Yes No
- the collection has any major strengths Yes No

If "Yes" to last, please specify

17 Does the fossil collection contain any of the following categories of specimens?

- Type specimens
- Figured specimens
- Cited specimens

18 If the collection contains minerals could you indicate how many specimens, or what proportion of the collection:

- whether the collection gives good general coverage Yes No
- the collection gives good local coverage Yes No
- the collection has any major strengths Yes No

If "Yes" to last, please specify

19 Does the mineral collection contain any of the following categories of specimens?

- Figured specimens
- Cited specimens

20 Is there a post in the museum for a full time geological officer?

- Yes
- No

21 If there is more than one member of staff working full time on the geology collection please state the number involved

22 If no one works full time on the geological collection does anyone have a particular proportion of his curatorial time specifically allocated for care of the collection?

- Yes
- No

23 Does the collection include any of the following?

- Geological maps
- Geological manuscripts
- Personalia of geologists
- Collections of geological photographs

The GCG is fully aware of the problems that face many of our smaller museums with geological collections, often of great importance to the science, and with little or no geological expertise on their staff. As a Group we are anxious to do all we can to help. Questions 24 to 26 are principally directed at such museums.

24 Would it be possible for a representative of the GCG to examine your geology collection?

- Yes
- No

25 If it proves possible to organise professional working parties within the GCG to help museums with little or no geological expertise would you welcome their assistance?

- Yes
- No

26 If you know of the existence of a geological collection in a small museum or other institution which you think might be overlooked, please give details here.

27 If you have any comments you think are relevant to this questionnaire and the information gathering it is attempting please add them here.

APPENDIX 1b. The 2001 questionnaire

Geological Curators' Group

State and Status Survey 2001

The following is a re-typed version of the 2001 survey, which allows comparison between the level and style of questions in this survey and the 1981 version (Appendix 1a)

GENERAL INFORMATION

Name of museum or institution:
Address:
Name of Contact:
Job Title:
Fax:
Telephone No.:
E-mail:
Is your museum registered? Yes No

NATURE OF COLLECTION

1 What percentage of your total museum collections are geology specimens?

- Up to 25%
- 26-50%
- 51-75%
- over 75%

2 How many specimens are in your geology collections?

- Less than 500
- 501-1,000
- 1,000-5,000
- 5,001-10,000
- 10,001-30,000
- 30,000-100,000
- 100,001-250,000
- over 250,000

3 Approximately how many specimens have been added to the collection in the last ten years?

- None
- less than 50
- 50-99
- 100-499
- 500-1000
- 1000+

4 Please describe the content of your collection indicating which category you have most of in ascending order from 1-5, 5 being the most, 1 the least and 0 being none at all.

- Rocks
- Fossils
- Minerals
- Thin sections
- Borehole Cores

Other major holdings (please list and indicate size):

5 Do you have any other associated archive holdings? e.g. maps, field notebooks, photographs

- Yes
- No

Please give details.

6 To the best of your knowledge is any of the material you hold type, figured, cited material?

- Yes
- No

How many type, figured or cited specimens do you hold?

Is there a published type catalogue?

- Yes
- No

If yes, please give reference.

7 Do you have any publications relating to the collections?

- Yes
- No

8 Is your geology collection designated?

- Yes
- No

DOCUMENTATION

9 What proportion of the collection is documented to MDA standards (on computer or by any other method)?

- Up to 25%
- 26-50%
- 51-75%
- over 75%

10 Is the collection documented on a computerized database (such as Modes, Adlib, Access etc?)

- Yes
- No

If so, what database do you use?

What proportion of your collection is on the database?

- <10%
- 10-20%
- 20-30%
- 30-40%
- 40-50%
- 50-60%
- 60-70%
- 70-80%
- 80-90%
- over 90%

Is all or part of the database available to the public?

- Yes
- No

Is any of your collection digitised? If so what proportion?

- Yes ___%
- No

11 What other systems of documentation do you use for the geology collections? (Card indexes, handwritten catalogues, object entry books)

STORAGE

12 Is the main proportion of your collection inside the museum (or other building) or within an offsite store?

13 Please describe how your collection is stored.

Please indicate the proportion of the material stored in each way. N.B. this can add up to more than 100%

- A, conservation grade boxes
- B, non conservation grade boxes
- C, Crates or packing cases
- D, roller racking
- E, shelving
- F, drawered cabinets
- G, other (please specify)

14 Are individual specimens stored in conservation grade trays?

- Yes
- No

If so, what proportion?

15 What proportion of individual specimens are packaged with plastazote or tissue?

16 Has all or part of the collection been re-stored in the last 10 years?

- Yes
- No

Please give details

17 Please describe if possible, what system of classification is used to arrange material in store. For example is it based on a geological system or taxonomic hierarchy or some other administrative system?

ENVIRONMENTAL CONDITIONS

18 Is the environment in the storage area monitored?

- Yes
- No

19 If so what monitoring system is used? (Thermohygrographs, telemetric dataloggers, whirl hygrometers etc.)

20 How often is the area checked?

- Daily
- Weekly
- Monthly
- Yearly
- Other (please specify)

21 If known, what is the maximum %RH and minimum %RH in the store over a year?

If material is kept in more than one store, please include figures for each location if possible.

22 Are the storage area environmental conditions stable, i.e. fluctuations of + or - 5% over a month?

- Yes
- No
- Unknown

23 Are environmental controls in place i.e. de-humidifiers, controlled air-conditioning?

- Yes
- No

Please specify what type of control is used.

24 Are any of the specimens stored in microenvironments?

- Yes
- No

If so, what type of microenvironment?

CONSERVATION

25 Has a conservation survey been conducted in the last 10 years?

- Yes
- No

If yes, please give details

26 Has any of the collection undergone specialist remedial conservation in the last 10 years?

- Yes
- No

If yes, please give details

27 Using the following classification, what is the current condition of the specimens?

Please indicate the proportion in each category:

- Good
- Indifferent
- Bad

Good = sound and clean
Indifferent = sound but dirty or exposed to risk
Bad = specimens deteriorating physically due to pyrite disease, fragmentation, constant abrasion or other causes

28 Do you have a professional conservator as a member of staff, or access to conservation support?

- Yes
- No

29 If so, do they have any training in geological conservation?

- Yes
- No

PERSONNEL & MANAGEMENT

30 Does anyone on your staff have any geological training or background?

Please describe qualifications/training as fully as possible.

31 How many members of staff are working full-time on the geology collection?

32 What proportion of their time is spent on curation of the geology collection compared to other activities, e.g. exhibitions?

33 Do you have any volunteers who work on the geological holdings?

If so, how are they supervised?

34 Do you have and acquisition policy?

- Yes
- No

Does it refer to geological materials?

- Yes
- No

35 Do you have an active policy of collecting?

- Yes
- No

36 Are the geological collections referred to in the museums overall strategic plan?

- Yes
- No

37 Have you been successful in obtaining grants for the geology collections in the last 10 years?

If so please give details.

SERVICES

38 Do you identify geological material for the public?

- Yes
- No

39 If no do you have alternative arrangements such as sending material to other museums for identification?

40 Do you allow access to geological collections to
a) the public
b) bona fide researchers

How is access controlled?

41 Is any of your geological material on display or is it all in storage?

If on display is it 'permanent' or part of a temporary exhibition or display?

42 Please note which of the following you have concerning the promotion of geology:

A a shop/sales at reception
B guidebook/book/postcard/other printed material for sale
C sale of replica dinosaurs/related good
D sale of mineral or fossil/replica specimens
E other (please specify)

43 Have you hosted any lectures or meetings on geology related subjects?

Please give details?

44 Does your museum have a web page?

- Yes
- No

Please give address

45 Would you like details of your collection to be included on the GCG web page?

- Yes
- No

GENERAL

46 What do you see as the main threats to /needs of your collection at the present time?

47 If you have any additional comments please add them here.

48 Are you or any of your staff a member of the GCG?

- Yes
- No

49 Do you give permission for your details to be kept on a GCG database?

- Yes
- No

50 Do you agree to the information in this questionnaire being shared with FENSCORE?

- Yes
- No

APPENDIX 2. Alphabetical list of responding institutions

Museums and institutions are listed in alphabetical order by town or smallest geographical area referred to in the completed surveys.

A

Aberdeen, University Geology Collections
www.abdn.ac.uk/geology/geo-collections.php

Aldeburgh Moot Hall

Alderney Society Museum
www.alderneymuseum.org/museum.html

Allerdale, Heritage and Arts
www.allerdale.gov.uk

Ambleside, Armitt Museum & Library
www.armitt.com

Angus Council Museums
www.angus.gov/uk/history/history

Anstruther, Scottish Fisheries Museum
www.scottish-fisheries-museum.org

Armagh County Museum
www.armaghcountymuseum.org.uk

Ashwell Village Museum

Ayr, Rozelle House Galleries
www.south-ayrshire.gov.uk

B

Ballymoney Museum
www.ballymoney.gov.uk

Banff Museum
www.aberdeenshire.gov.uk

Barnsley, Victoria Jubilee Museum
www.barnsley.gov.uk

Barnstaple, North Devon Museum
www.devonmuseums.net/barnstaple

Barrow-in-Furness, Dock Museum
www.borrowbc.gov.uk

Bath Literary and Scientific Institution
www.brisi.org

Batley, Oakwell Hall Country Museum
www.kirklees.gov.uk

Beccles & District Museum
www.becclesmuseum.org.uk

Bewdley Museum
www.bewdleymuseum.tripod.com

Bexley Museum
www.hallplaceandgardens.com

Birmingham Museum & Art Gallery
www.birmg.org.uk

Birmingham, Soho House Museum (part of Birmingham Museums & Art Gallery)
www.birmg.org.uk

Birmingham, University, Lapworth Museum of Geology
www.bham.ac.uk/EarthSciences/lapworth

Blackburn Museum
www.blackburnworld.com

Blairs Museum
www.blairs.net

Bolton Museum & Art Gallery
www.boltonmuseums.org.uk

Brecknock Museum and Art Gallery
http://powysmuseums.powys.gov.uk

Bridport Museum

Brighton, Booth Museum of Natural History
www.booth.virtualmuseum.info

Bristol City Museum and Art Gallery
www.bristol_city.gov.uk/museums

Bristol, University, Dept. of Earth Sciences Geology Museum
www.gly.bris.ac.uk/www/services/museum

Bromley Museum
www.bromley.gov.uk/museums

Buckingham, Old Gaol Museum

www.mkheritage.co.uk/org

Buckinghamshire County Museum

www.buckscc.gov.uk

Burnley, Towneley Hall Art Gallery and Museums

www.towneleyhall.org.uk

Bury St.Edmunds, Moyse's Hall Museum

www.stedmundsbury.gov.uk/sebc/visit/moyses-hall.cfm

Bute Museum

www.argyll-bute.gov.uk

Buxton Museum & Art Gallery

www.derbyshire.gov.uk/leisure/buxton_museum

C

Cambridge, Sedgwick Museum of Earth Sciences

www.sedgwickmuseum.org

Canterbury City Museums

www.canterbury.co.uk/museums/royal

Cardiff, National Museum of Wales

www.nmgw.ac.uk

Carlisle, Tullie House Museum and Art Gallery

www.tullie-house.co.uk

Chelmsford Museum

www.chelmsfordbc.gov.uk/museums/index.shtml

Cheltenham Art Gallery & Museum

www.cheltenhammuseum.org.uk

Chesterfield Museum & Art Gallery

www.chesterfieldbc.gov.uk

Chichester District Museum

www.chichester.gov.uk/museum

Chingford, Queen Elizabeths Hunting Lodge

www.cityoflondon.gov.uk/Corporation/leisure_heritage

Cirencester, Corinium Museum

www.cotswold.gov.uk

Clitheroe Castle Museum

www.imagined.org.uk

Colchester Museums

www.colchestermuseums.org.uk

Coniston, Brantwood

www.brantwood.org.uk

Coniston, Ruskin Museum

www.coniton.org.uk

Corfe Castle Townhall Trust

Coventry, Herbert Art Gallery & Museum

www.coventrymuseum.org.uk

Cowbridge Museum Trust

Cowper & Newton Museum

www.cowperandnewtonmuseum.org

Craighaven Museum Services

www.craighavenmuseumservices.com

Craven Museum

www.cravendc.gov.uk

Cromarty, Hugh Miller's Cottage

www.hughmiller.org

Cromer Museum

www.museums.norfolk.gov.uk

D

Dartford Borough Museum

www.dartford.gov.uk/community/museum

Dawlish Museum Society

www.devonmuseums.net/dawlish

Derby Museum & Art Gallery

www.derby.gov.uk/museums

Derry, Harbour Museum

www.derrycity.gov.uk/heritage.htm

Doncaster Museum & Art Gallery

museum@doncaster.gov.uk

Dorking & District Museum

www.web.ukonline.co.uk/members/honor.m/visitors/dorkin

Dorset County Museum (Dorset Natural History & Archaeological Society)

www.dorsetcountymuseum.co.uk

Dover Museum

www.Dovermuseum.co.uk

Dudley Museum and Art Gallery
www.dudley.gov.uk/dudleymuseum

E

Edinburgh, National Museum of Scotland
www.nms.ac.uk
Elmbridge Museum
www.elmbridge.history.museum
Ely Museum
Enfield Museum Service
www.enfield.gov.uk/museum
Exeter, Royal Albert Memorial Museum
www.exeter.gov.uk/leisure
Eyam Museum
www.cressbrook.co.uk/eyam/museum

F

Falkirk Museum
www.falkirkmuseums.org
Farnham Museum
www.waverley.gov.uk
Fermanagh County Museum
www.enniskillencastle.co.uk
Fife Council Museums (East)
www.fife.gov.uk
Fife Council Museums (West)
www.fife.gov.uk
Folkestone Museum
www.kent.gov.uk
Forest of Dean, Dean Heritage Museum Trust
www.dean-heritage.demon.co.uk

G

Glasgow, Kelvingrove Art Gallery and Museum,
www.glasgowmuseums.com/kelvingrove
Glasgow, University Hunterian Museum
www.hunterian.gla.ac.uk
www.huntsearch.gla.ac.uk
Gloucester City Museum & Art Gallery
www.livinggloucester.co.uk
Godalming Museum
www.godalming-museum.org.uk
Grantham Museum
www.lincolnshire.gov.uk
Greenock, McLean Museum and Art Gallery
www.inverclyde.gov.uk/museum/index.htm
Greenwich Borough Museum
www.greenwich.gov.uk
Guernsey Museums and Art Galleries
www.museums.gov.gg

H

Hampshire County Council Museums Service
www.hants.gov.uk/museums/gosportgeology
Hanley, Potteries Museum & Art Gallery
www.stoke.gov.uk/museums/pmag
Harlow Museum
www.harlow.gov.uk
Harrogate Museum and Arts Museum
www.harrogate.gov.uk/museums
Haslemere Education Museum
www.haslemeremuseum.co.uk
Hastings Museum and Art Gallery
www.hmag.org.uk
Haverford West, Scolton Manor Museum
www.pembrokeshire.gov.uk
Helmsdale, Timespan Heritage Centre and Art Gallery
www.timespan.org.uk
Henfield Museum
www.henfield.gov.uk/museum.htm
Hereford Museum
www.museums.herefordshire.gov.uk
Hertford Museum
www.hertford.net/museum
Hoddesdon, Borough of Broxbourne, Lowewood Museum
www.lowewood.com

Honiton, Allhallows Museum

www.honitonlace.com

Horsham Museum

www.horsham.gov.uk

Hull & East Riding Museum

www.hullcc.gov.uk/museums

Huntly, Brander Museum

www.aberdeenshire.gov.uk

I

Ilfracombe Museum

www.devonmuseums.net

Inverness Museum & Art Gallery

www.Highland.gov.uk

Inverurie, Carnegie Museum

www.aberdeenshire.gov.uk

Ipswich Museum Service

www.ipswich.gov.uk

Ironbridge Gorge Museum Trust

www.ironbridge.org.uk

Isle of Man, Manx National Heritage

www.gov.im.mnh

Isle of Wight, Dinosaur Isle Museum

www.dinosaurisle.com

Isle of Wight, Osbourne House, Cowes

Isles of Scilly Museum

www.aboutbritain.com/islesofScillyMuseum/htm

K

Keighley, Cliffe Castle Museum, Bradford Museums Service

www.bradford.gov.uk/tourism/museums

Kendal Museum

www.kendalmuseum.org.uk

Kettering, Manor House Museum

www.kettering.gov.uk

Keyworth, British Geological Survey

www.bgs.ac.uk

Kilmarnock, Dick Institute

www.east-ayrshire.gov.uk

Kingston Museum

www.kingston.gov.uk/museum

L

Lancashire County Museums Service

www.imagined.org.uk

Langton Matravers Museum

http://homepage.ntlworld.com/philip.h.wyatt/langton_matravers_museum.html

Laxfield & District Museum

Leeds City Museum

www.leedss.gov.uk/tourism

Leicester City Museum Service

www.leicestermuseums.ac.uk

Lewes, Barbican House Museum

www.sussexpast.co.uk

Lincoln City & County Museum

www.lincolnshire.gov.uk/ccm

Linlithgow Story

www.linlithgowstory.org.uk

Littlehampton Museum

Liverpool Museum

www.liverpoolmuseums.org.uk

Loftus, Tom Leonard Mining Museum

www.iIronstonemuseum.co.uk

London, Bruce Castle Museum

www.brucecastlemuseum.org.uk

London, Gunnersbury Park and Museum

www.Cip.Org.uk

London, Horniman Museum

www.horniman.ac.uk

London, Imperial College

www.imperial.ac.uk

London, Natural History Museum, (Dept. of Palaeontology)

www.nhm.ac.uk

London, Petrie Museum of Egyptian Archaeology
www.petrie.ucl.ac.uk
London, Royal Holloway College, Dept. of Geology
www.rhul.ac.uk
London, UCL, Department of Geological Sciences
www.ucl.ac.uk
Looe, Old Guildhall Museum, East Looe
www.caradon.gov.uk
Lyme Regis Museum
www.lymeregismuseum.co.uk

M

Maidstone Museum and Bentlif Art Gallery
www.museum.maidstone.gov.uk
Mallaig Heritage Centre
www.mallaigheritage.org.uk
Malvern Museum
www.roscalen.com/museum/index.htm
Manchester University Museum
www.museum.man.ac.uk
Mansfield Museum and Art Gallery
www.mansfield-dc.gov.uk
March & District Museum
Mersea Island Museum
Middlesbrough, Dorman Museum
www.dormanmuseum.co.uk
Mildenhall & District Museum
www.mildenhallmuseum.co.uk
Much Wenlock Museum
www.shropshire.cc.gov.uk/museums

N

New Millls Heritage and Information Centre
www.newmills.org.uk
Newark Museum
www.newark-sherwooddc.gov.uk
Newcastle upon Tyne, Hancock Museum
www.twmuseums.org.uk
Newcastle-under-Lyme, Borough Museum & Art Gallery
www.newcastle-staffs.gov.uk
Newport Museum and Art Gallery
North Ayrshire Museum
www.northayrshiremuseums.org.uk
North Hertfordshire Museums
www.nhdc.gov.uk
www.nort-herts.gov.uk
North Lincolnshire Museum
www.Northlincs.gov.uk/museums
North Somerset Museum Service
www.n-somerset.gov.uk
Northampton Museum and Art Gallery
www.northampton.gov.uk/museums
Northwich, Salt Museum
www.saltmuseum.org
Norwich Castle Museum & Art Gallery
www.museums.norfolk.gov.uk
Norwich, Chatteris Museum
Nottingham Natural History Museum
www.nottinghamcity.gov.uk

O

Oldham Museum & Art Gallery
www.oldham.uk/gallery
Oxford, University Museum of Natural History
www.oum.ox.ac.uk
Oxfordshire Museums Service
www.oxfordshire.gov.uk/
oxfordshire_museums_service

P

Peak District Mining Museum
www.peakmines.co.uk
Penrith Museum
www.eden.gov.uk
Penzance, Cornwall Geological Museum (Royal Geol. Soc.of Cornwall)

Penzance, Geevor Tin Mine
www.geevor.com
Perranporth, Perranzabuloe Folk Museum
Perth Museum & Art Gallery
www.phc.gov.uk/art_heritage
Peterborough Museum and Art Gallery
www.peterboroughheritage.org.uk
Peterhead, Arbuthnot Museum
www.aberdeenshire.gov.uk
Plymouth City Museum & Art Gallery
www.plymouthmuseum.gov.uk
Porthcawl Museum
Portland Museum
www.weymouth.gov.uk
Portsmouth City Museums & Records Service
www.portsmouthmuseums.co.uk
Powysland Museum
http://powysmuseums.powys.gov.uk

R

Radnorshire Museum
http://powysmuseums.powys.gov.uk
Ramsgate, East Kent Maritime Museum
www.ekmt.fsnet.co.uk
Reading Museum & Archive Store
www.readingmuseum.org
Rochdale Museum Service
www.rochdale.gov.uk
Rochester, Guildhall Museum
www.medway.gov.uk
Rossendale Museum
www.lancashire.gov.uk
Rotherham, Clifton Park Museum
www.rotherham.gov.uk

S

Saddleworth Museum & Art Gallery
www.museum.Saddleworth.net
Saffron Walden Museum
www.uttlesford.gov.uk
St Ives, Norris Museum
St. Albans Museum
www.stalbans.org.uk
St. Andrews, University Geological Collection
www.stt-and.nc.uk/services/muscoll/index.htm
St. Austell, Wheal Martyn China Clay Museum
www.wheal-martyn.com
St. Barbe Museum & Art Gallery
www.stbarbe-museum.org.uk
St. Helens, The World of Glass
www.worldofglass.com
Scarborough Museums & Art Gallery
www.scarboroughmuseums.org.uk
Seaton, Axe Valley Heritage Museum
www.seatonmuseum.co.uk
Sevenoaks & Folkestone Museums
www.kent.gov.uk
Sewerby Hall Museum
www.bridlington,net/sew
Sheffield Galleries & Museums Trust
www.sheffieldgalleries.org.uk
Sherbourne Museum
Sheringham Museum
http://sheringhammuseum.co.uk
Shetland Museum
www.shetland-museum.org.uk
Shropshire County Museum Service - for Ludlow and Much Wenlock Museums
www.shropshire.cc.gov.uk/museums
Sidmouth Museum
www.devonmuseums.net/sidmouth
Somerset County Museum
www.Somerset.gov.uk/museums
South Lanarkshire Council Museum Development
www.southlanarkshire.gov.uk

South Molton & District Museum

www.devonmuseums.net/southmolton

South Ribble Museum & Exhibition Centre, Leyland

www.south-ribblebc.gov.uk

South Somerset Museum

www.southsomerset.gov.uk

Southampton, University, School of Earth & Ocean Science

www.soc.soton.ac.uk/SOES/SCHOOL/collection

Southend Museum Service

www.southendmuseum.co.uk

Southwold Museum

www.southwoldmuseum.org

Stranraer Museum

www.dumfriesmuseum.demon.co.uk

Stromness Museum

www.orkney.com

Stroud, Museum in the Park

www.stroud/docs/community/museum.shtm

Sunderland Museum & Winter Gardens

www.twmuseums.org.uk

Surrey Heath Museum

www.surreyheath.gov.uk/leisure/museum

Swafham Museum

www.aboutswaffham.co.uk

Swansea Museum

www.swansea.gov.uk/heritage

Swindon Museum and Art Gallery

www.swindon.gov.uk

T

Tamworth Castle Museum

www.tamworthcastle.freeserve.co.uk

Tenby Museum & Art Gallery

www.tenbymuseum.free-online.co.uk

Thetford, Ancient House Museum (part of Norfolk Museums & Archaeology Service)

www.norfolk.gov.uk/tourism/museums

Thurrock Museum

www.thurrock.gov.uk/museum

Torquay Museum

www.torquaymuseum.org

Trowbridge Museum

www.trowbridgemuseum.co.uk

Truro, Royal Cornwall Museum

www.royalcornwallmuseum.org.uk

Tunbridge Wells Museum & Art Gallery

www.tunbridgewells.gov.uk/museum

Tweeddale Museum, Peebles

www.scotborders.gov.uk/outabout/museums

W

Wakefield, National Coalmining Museum for England

www.ncm.org.uk

Wanlockhead, Lead Mining Museum

www.leadminingmuseum.co.uk

Wantage, Vale and Downland Museum

www.wantage.com/museum

Warminster, Dewey Museum

www.westwiltshire.gov.uk/tourism/visit/museums.php

Warrington Museum & Art Gallery

www.warrington.gov.uk

Warwickshire Museum

www.warwickshire.gov.uk

Watchet Market House Museum

Watford Museum

www.hertsmuseums.org

Wednesbury Museum

www.lea.sandwell.gov.uk/museums/wednesbury.htm

Wells Museum

Welwyn Hatfield Museum Service

museum@welhat.gov.uk

West Highland Museum

www.fortwilliamonline

Whitby Literary & Philosophical Society Museum

www.durain.demon.co.uk/index.htm

Whitehaven, The Beacon

www.copelandbc.gov.uk

Whittlesey Museum

www.whittleseyweb.com/public/museum.htm

Wigan Heritage Service

www.wiganmbc.gov.uk

Winchester Museums Service

www.winchester.gov.uk/heritage/index.htm

Wolverhampton Arts & Museums Centre

www.wolverhamptonart.org.uk

Worcester City Museum

www.worcestercitymuseums.org.uk

Worthing Museum

www.worthing.gov.uk

Wymondham Heritage Museum

www.wymondham-norfolk.co.uk

Y

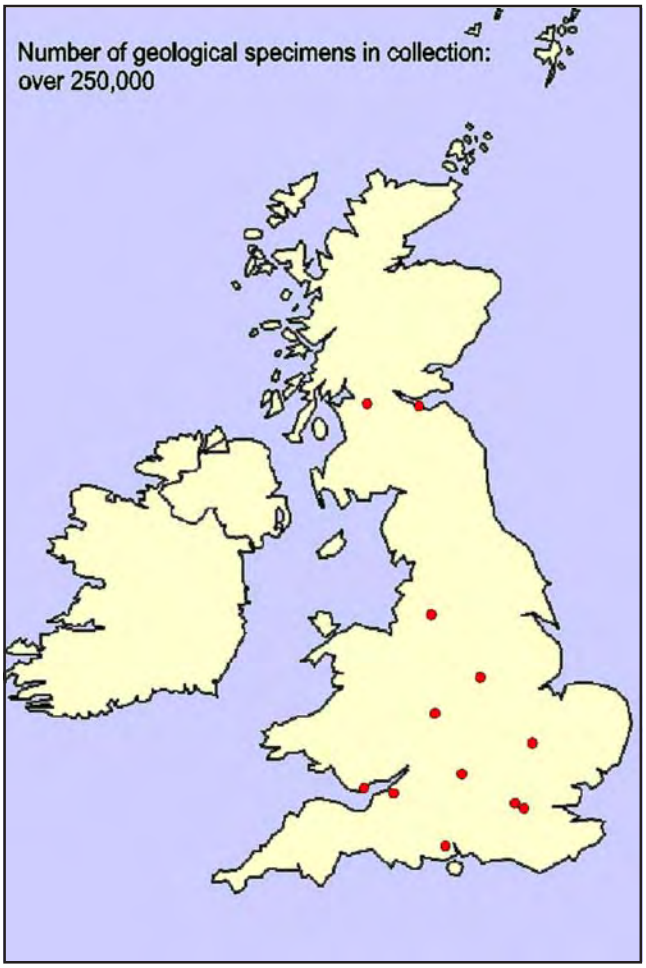
York, Yorkshire Museum

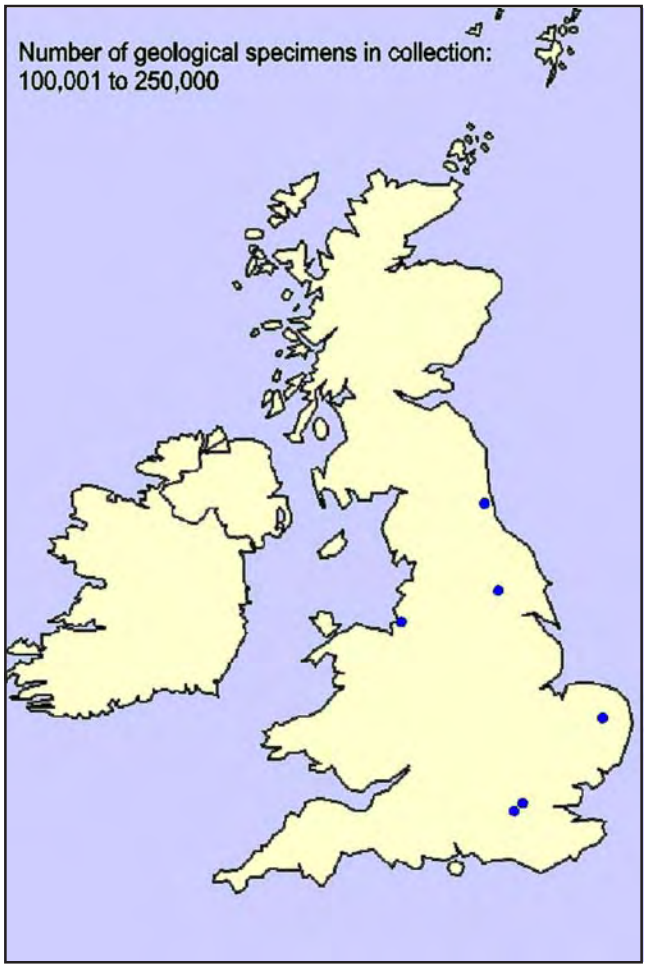
www.yorkmuseumstrust.uk

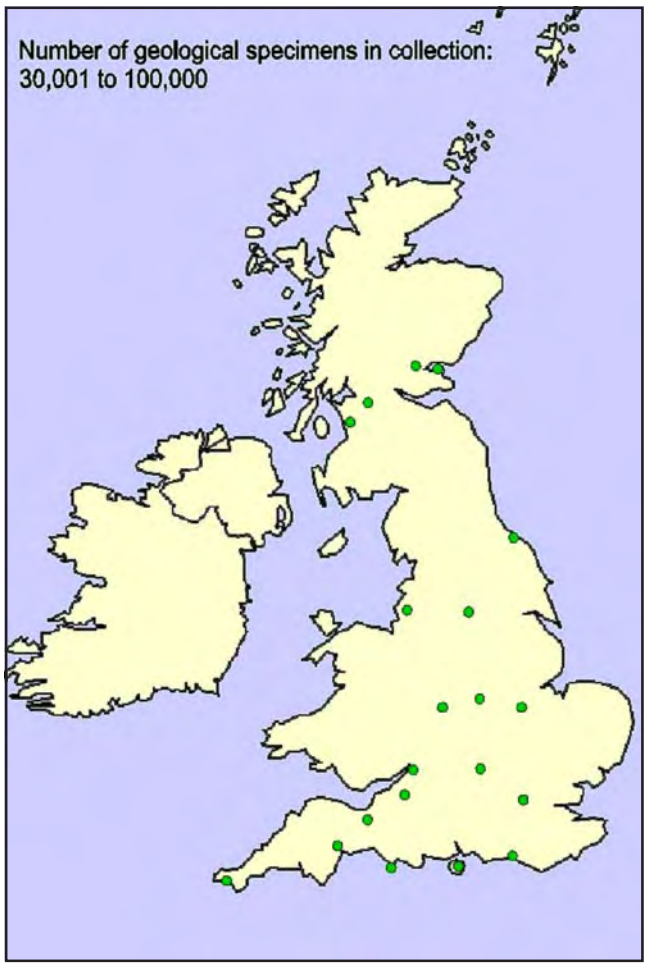
APPENDIX 3. Geographical distribution of collections

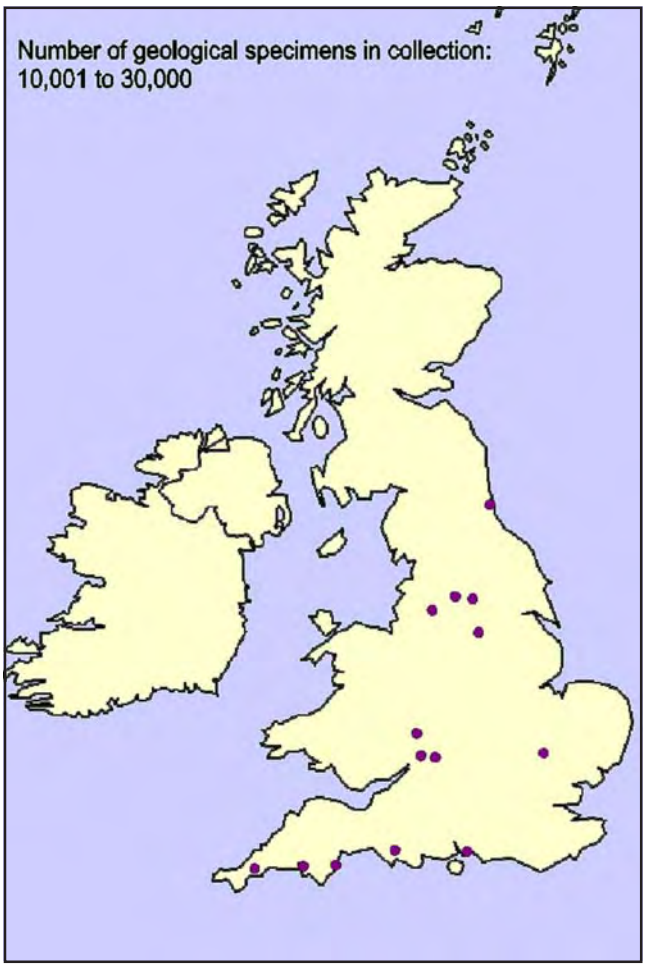
The following maps indicate the approximate sizes of collections and their relative distribution throughout the UK.

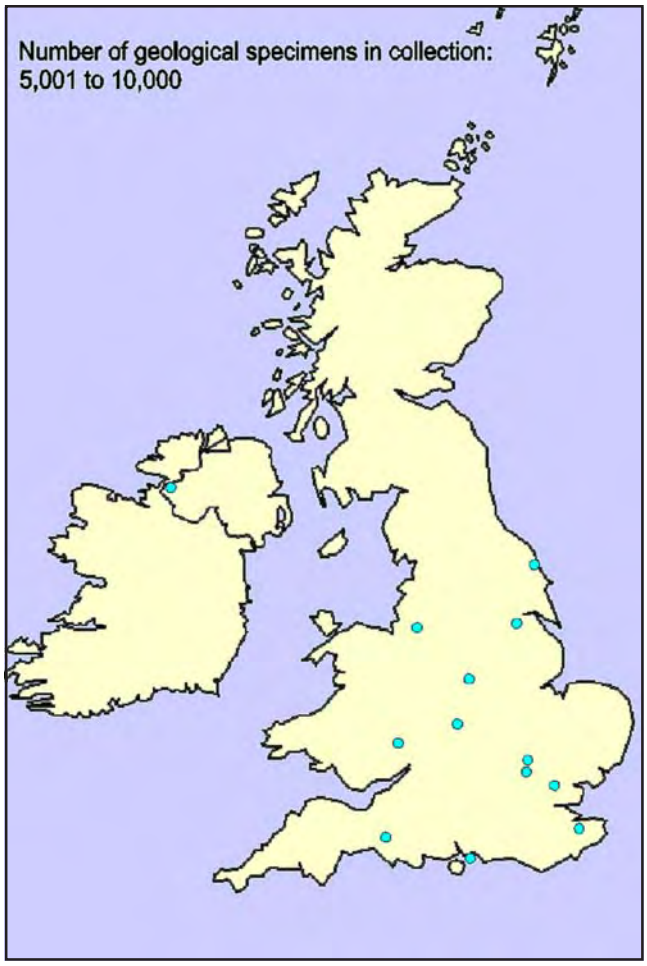
Two museums shown on the map illustrating the geographical distribution of collections with specimen numbers **over 250,000** are not treated as such in the main body of the report, as these figures were received after the majority of the statistical analysis was complete.

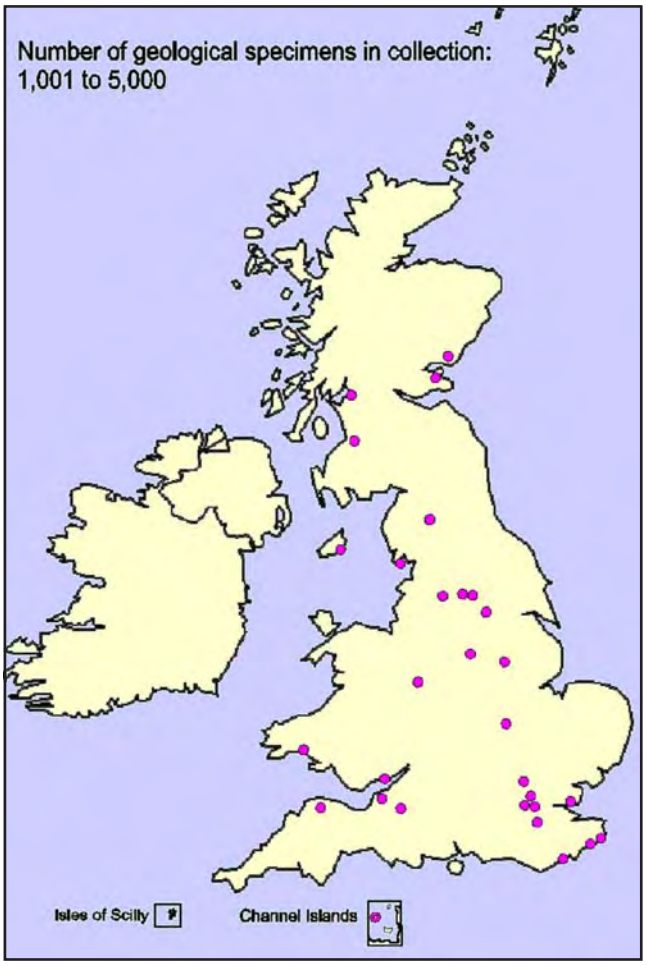




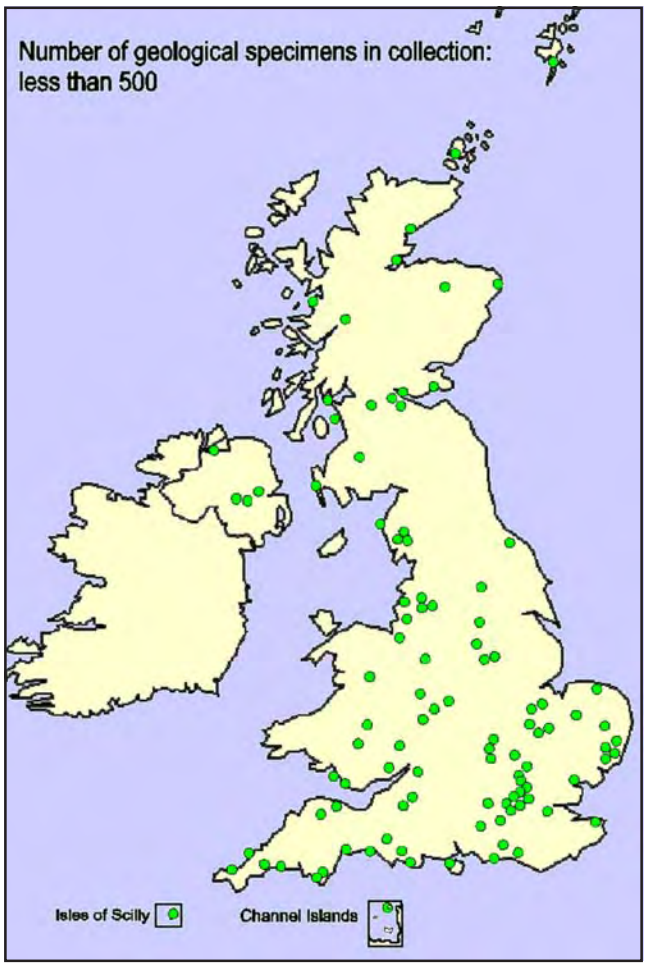

Number of geological specimens in collection:
30,001 to 100,000

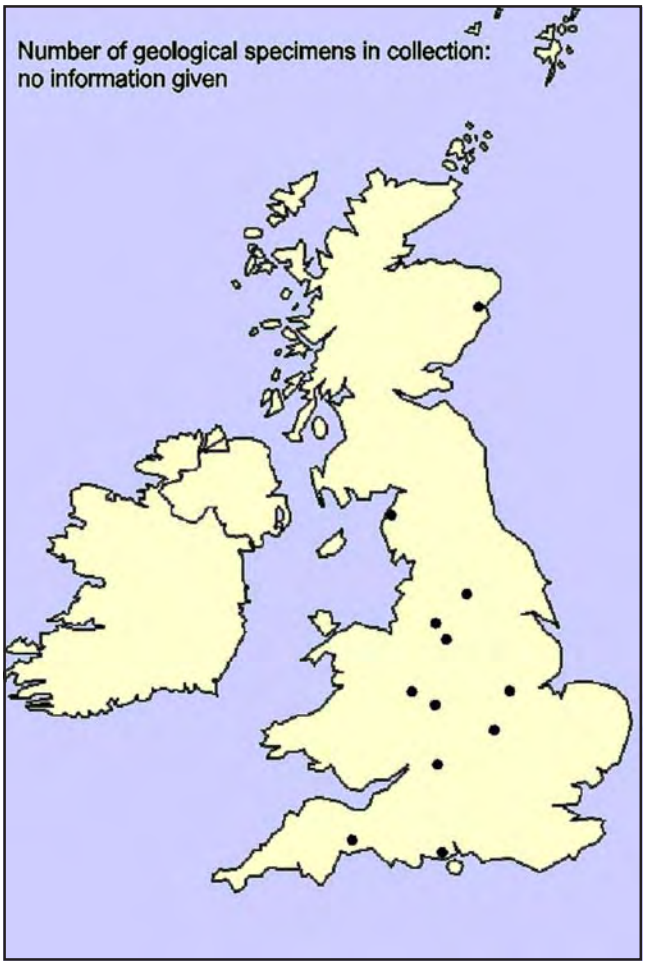

Number of geological specimens in collection:
10,001 to 30,000


Number of geological specimens in collection:
5,001 to 10,000


Number of geological specimens in collection:
1,001 to 5,000
Isles of Scilly
Channel Islands


Number of geological specimens in collection:
501 to 1000


Number of geological specimens in collection:
less than 500
Isles of Scilly
Channel Islands


Number of geological specimens in collection:
no information given

APPENDIX 4. Threats and needs

Where sensible the threats and needs were précised and statements identifying individual museums were removed.

Number of specimens in geology collections: over 250,000

- Computer cataloguing on line access. Improved storage - both in hand
- Cost of storage space likely to lead to a cull of material not in regular use. Collections are moved out of designated rooms to make way for computers and become scattered. Future direction of dept. unclear
- Lack of space. We need good quality storage space in controlled conditions.
- More collections care personnel. More storage space. More preventative conservation. More computerisation
- Needs - space for storage and associated units/ materials, curatorial staff to complete registration backlogs. Threats - future drop in capital funding affecting he ability of the department to carry out its curatorial obligations
- No money for storage or staff
- Poor roof maintenance at one store. Lack of staff time to work on and encourage use of collections
- The identified deficiencies in the building, which will be addressed by HVAC. In the meantime, the poor environmental control we have on the building must remain a threat to the collection.
- Threats: changes to funding of University Museums & Galleries. Needs: manpower for ongoing documentation & data inputting to computer system; improved environmental controls; temporary exhibition space.

Number of specimens in geology collections: 100,001 to 250,000

- Lack of full time staff to curate collection. Lack of adequate storage facilities. Rolling programme of checking conditions stopped - other institutional priorities
- Lack of space
- No full-time curator (post vacant). Documentation needs sustained work. Collection requires new permanent home.
- Not enough staff to curate collections. This is obviously a result of lack of funding
- Pressure to limit the amount of space available for storage

Number of specimens in geology collections: 30,001 to 100,000

- Administration and other duties preventing curation work
- Cataloguing onto MODES main priority for next few years, then making the database available to public (gallery/web)
- Funding to employ curator on full-time basis
- Funding!
- Insufficient and inappropriate stores. Curator has other responsibilities so cannot work on collection all he time.
- Insufficient interest (especially financial) from local authorities
- It's a large resource but difficult to use with the constraints of the National Curriculum & it's own fragility. Still seen as specialist and even dull. Needs higher academic promotion and study. Needs curatorial / conservation time & therefore also money. Some material needs to be assessed for relevance to this collection
- Lack of funding, difficulty of generating income to continue basic curatorial work. I now have to generate all funds in order to work on the collection
- Lack of resources - financial & staff. Curatorial budget decreases every year
- Move away from specimen related research in Univ. Dept. No money for support of collection and curators
- Need to improve environmental conditions and to complete documentation. The photographic material requires attention and proper archival quality storage before they become damaged,
- Poor off-site storage, inadequate in volume, environmental control, access and work space. Plans to move more material into conservation grade wooden cabinets have been put on hold as there is insufficient room for floor-based storage - shelf storage is currently up to 10. Need full time permanent curator
- Need basic conservation work & regular monitoring of environment. Storage conditions - identifying for specific needs for fossil specimens. Selecting for hands on and education

programme
- The assistant curator's position is not a permanent post. Storage always an issue
- Threat: Overcrowding; lack of environmental control. Needs: More space to develop collection; better access and storage; need to accumulate likely future acquisitions

Number of specimens in geology collections: 10,001 to 30,000

- Vulnerability of off site store to flooding and lack of alternative store for Geology collection.
- poor environmental control in offsite store.
- Work load of Natural sciences officer means that inadequate time is spent on Geology collection.
- Lack of expertise in Geology (recording officer is a Biologist).
- Lack of grant aid and budges to employ suitably qualifies staff to work on the Geology collection.
- Current inadequate storage facilities i.e. lack of space, not dust proofed, no controls over environmental conditions. (HLF award, approval granted last week - should address his in 2-3 years time. Transport of collection to temporary store whilst new stores created.
- Currently only a temporary member of staff working on the collection. Storage and documentation of collections needs improvement
- Funding for curatorial & conservation work. Public access. Collection has low profile, only a small display. Collection is not being used. Intellectual access - collection documentation needs to be computerised to give access to researchers, students
- Needs: More storage space, more man hours (Professional and/or Voluntary).
- Need improved storage & documentation
- Lack of staff to curate collection. Some pyrite decay studies.
- Lack of space and curatorial time
- Lack of staff time for curation of collection. Lack of revenue funding for curation and conservation of collections. Inadequate storage (but hopefully will be addressed soon)
- Lack of storage space
- Loss of curatorial staff. Lack of any budget
- Minerals - deterioration of susceptible specimens, pyrite decay, dirt etc. Ditto historic labels, acid scorching etc. Rocks and Fossils - poor documentation, poor condition, lack of use of lack of publicity, collections awareness
- More appropriate storage
- Need for computerisation of data to increase access. Lack of curatorial time owing to other projects
- New city museum with geological displays. New store for the collection.
- No staff time to finish documentations due to workload and being the only curator left in this large museum. (Retirement or redundancy might get there first) There is uncertainty ahead with Best Value
- Poor storage conditions relating to damp in part of the museum building. We also need a specialist to catalogue and research the geological specimens.
- Present store at full capacity. Lack of public access - in recent years have lost Geology Gallery. Need geological or Natural History curator on staff. Need good working area for curatorial work.
- Review of service to concentrate on local history. Ignorance of the importance of the collections by ever changing governing bodies. Attacks on collection value by other members of staff in other subject areas.
- The main threat is the political situation - a non-statutory requirement of a local authority: need to maintain an active promotional, events, exhibitions & education programme
- Needs: historical research, upgraded storage, documentation to a higher & more useful level. Threats: reduction in funding post, reduction in council budgets, increased demands on my time.

Number of specimens in geology collections: 5001 to 10,000

- Lack of capital
- Lack of curatorial attention
- Lack of curatorial attention, due not least to apparent indifference from 'the system'!
- Lack of geological curator on staff
- Lack of staff and resources
- Lack of staff/money/time. Inadequate storage
- Lack of time to concentrate on these collections.
- Little time to devote to collection
- Identifying/check identification of fossils. Time for cataloguing. Use/access for collection
- Improvement of the conservation conditions within the Geological store. Full documentation of material.
- Inadequate space for collections, ditto lack of suitable workshop/lab/study facilities. Documentation/ conservation programme to be in 2002

- Inadequate storage at offsite store - environmental conditions need improving. Resources to document remainder of collection
- Lack of a geological curator or assistant, i.e. one person responsible for all natural sciences
- Need to out source care of collections to University has reduced our day-to-day involvement with the collection.
- Needs - to complete documentation program to meet conditions of registration with MGC. Display space for permanent exhibition in Canterbury (library due to move out of a shared building in a few years) Threats
- Lack of specific funding for natural Science Continuation of long term high quality storage (present store could be given over to outside museums
- No threats perceived now storage has been markedly improved. NEED to get digitised images of collection available to public via internet or public access terminal
- No time to work on it. No time to collect. No money to spend on it.
- Official centralisation policies regarding geological collections, and the decline of Geology as a GCSE subject
- Poor finance. Lack of Alpha-Taxonomy support, inc Literature etc.,
- Probably needs re-store. Hardly known about. No Geological staff. Much of it not local but purchased *c*. 20years ago.
- Storage space, time
- There are no perceived threats to our collection. Space is at a premium, but funding is being raised for an extension on the South side of the present building
- Threats - little time to work on them, seen as low priority in "big picture". Because of inadequate curation, they are then underused. Needs - Time and space to work on them
- Under use of the collection - main threat

Number of specimens in geology collections: 1001 to 5,000

- No staff to oversee with knowledge - no real home for collection to be displayed
- No threats at present. Some conservation work required on material recently returned from loan. Expert checking of fossil identification would be helpful.
- A present, conservation (preventative) and documentation are the priority
- Adequate storage facilities/access to specialist staff/knowledge - documenting on our Adlib software
- Benign neglect; passive curation; lack of curatorial knowledge in this subject area (we are a museum of archaeology and human history)
- Better documentation is needed, but this is difficult with no in- house expertise or subject knowledge. Advice on suitable storage practice also needed.
- Conservation problems of both inorganic and organic material. Poor housing of the collection
- Curator's roles expanding but has time restraints. Hopes heritage lottery will provide for new storage area
- Cuts in Government funding. Main needs are care and maintenance of the collection. Give better public access to the collection
- Decrease in Natural History staff over the years
- Deterioration of the main fabric of the museum building making it at present difficult to maintain preferred environmental conditions
- Insufficient curatorial resources to care for, develop and promote the use of the collection. Need improved storage conditions in order to improve access to the collection.
- Lack of professional expertise in identification, promotion and dealing with enquiries.
- Lack of specialist knowledge amongst staff. Lack if resources
- Lack of staff resources (specialist knowledge time). Lack of funding for effective storage, documentation, access and display
- Lack of storage
- Lack of storage space (for all collections, not just geology) and lack of revenue budget
- Lack of storage space; deteriorating building stock. No expertise in this area.
- Member of staff and volunteers with interest in Geology are leaving
- Need to renew he storage of the collections. Lack of personnel to develop use of collection
- Need to up date identification and assessment of fossil collection.
- No dedicated staff to deal with Geology collection - just a small share of curator's time can be spent on collection.
- No geologically trained staff. Shortage of display and storage space.
- No specialist curator. Present curator of natural History has wide range of tasks and other demands on time tend to squeeze out collections maintenance.
- Quaternary specimens in urgent need of conservation, also pyritised Jurassic fossils. In need of professional curation e.g. names of

fossils need revision /identification
- Re-curating & packing of fossils
- Reduction in museums funding leading to restructuring and loss of jobs. Focus of museum on income generation.
- Space - specimens subject to abrasion in storage
- Storage areas need upgrading – it is a stopgap a present. Problems of staff time, Local Authority finances and lack of space.
- Suitable space and storage units. Current staff too preoccupied with other priorities
- The lack of a Natural History curator is a problem for the geology collection as it is now effectively a closed collection.
- Threats - Poor documentation and storage: under-use. Needs - Re-storage in own store with more stable environment (currently share cramped store with archaeology collection). Documentation by trained geologists, cataloguing/digitalisation to facilitate use.
- To transfer manual records to computer system
- We need expert advice to fully catalogue and classify the collection. We need advice on how to suitably store the collection and comments on how to add to the collection as it stands

Number of specimens in geology collections: 501 to 1000

- Better interpretation to local environment/ geology
- Collection needs to be fully documented by a trained museum geologist
- Decay
- Lack of attention
- Lack of funding / Lack of staff
- Lack of funding / Lack of staff
- Lack of resources
- Lack of space and funding
- Lack of specialist curatorial expertise. Generally lack of time and resources
- Main needs - cataloguing to MDA standard
- Money. Lack of knowledge and time.
- Need more specialist curation time. Storage - not adequate at present
- Natural History given low priority due to lack of staff time
- Need: to have collection entered on our data point documentation system by a geology expert. SMCC curator made a start but had no time to complete it.
- Needs a curator who knows more about geology!
- No curator
- No threats - it just needs sorting to create an interesting, informative display for visitors
- The collection will not be on display after 2002; much of it is not locally derived and would be better in another institution
- Trained geologist who is able to catalogue the collection and add to the resulting data to the museum database
- We have no specific geology curator. Storage is very stretched. Funding/DDA access issues
- We need a staff member, or someone on a short-term contract, to sort the collection out properly. It is an early collection which has been neglected for the last 60 years

Number of specimens in geology collections: less than 500

- A little knowledge concerning it would be something
- Chief need is to decide whether they should be kept! If so, a conservation survey is needed as well as proper documentation to Spectrum standards.
- Collection needs to be increased, so as to represent local geology more comprehensively.
- Confirmation as to correct labelling
- Consolidating visitor numbers and developing them through a major marketing initiative for 2002. Rely heavily on tourism to promote independent museum and make it viable. Need to address the issue of establishing an endowment fund to develop our education service in partnership with local field studies centres, and also to add greatly to our web site.
- Council is reorganising - implications for museum as yet unclear
- Documentation
- Funding, storing, - cataloguing
- Geological collection is not a priority for the museum
- Growing lack of storage space generally
- How to use the collection in ways that inspire and allow for individual discovery.
- It needs to be more comprehensive and put into an historical context within the rest of the museum
- Lack of available staff time. Lack of storage space
- Lack of cash in an independent museum
- Lack of curatorial time to deal with any of the collections. Emphasis on Best Value, Social Inclusion, Healthy Living and events!
- Lack of curatorial time to focus on the collections, often comes second to other duties,

e.g. education, exhibitions, duty management etc.
- Lack of funding / Lack of staff
- Lack of funding / Lack of staff
- Lack of knowledge about specific needs for geology collection.
- Lack of knowledge. Same threats as rest of collection.
- Lack of money, time & interest from staff
- Lack of professional input.
- Lack of resources
- Lack of space
- Lack of space
- Lack of space to expand
- Lack of specialist knowledge of collection
- Lack of specialist staff
- Lack of specialist staff. Main need is to check condition of individual items, list and repack if necessary.
- Lack of staff time for curatorial duties and research. Lack of financial resources.
- Lack of staff time to organise storage and display of items
- Lack of staff to make them accessible
- Lack of staff with specialist knowledge
- Lack of staffing/knowledge
- Lack of time for research
- Lack of volunteers
- Main need - Professional Assessment
- More research/identification of specimens: expert advice
- Most of the collection is unidentified.
- Museum is a charitable trust. The museum operates as a visitor attraction in order to raise income. It is heavily dependent on the local council and on private donations in order to survive.
- Need controlled expansion
- Needs expanding to represent Geology of whole area of interest. Low priority
- Needs restoring into individual trays in cabinets & more background information to the collection
- Needs to be documented
- No geological experience on team
- No threats. We need advice on all aspects from geologists. The display will be improved this year by MUCH improved lighting
- Not all collection is stored in conservation grade material; and museum does not, at present, have the resources to allocate to the conservation/stabilisation of some specimens. Non-specialist staff at museum.
- Poor storage
- Poor storage, disinterest in the subject. Needs to be referenced - lack of collection details/ sources in some cases
- Pressure on storage space
- Shortage of curatorial time and curators (not volunteers!) lack of expertise.
- Shortage of staff
- Shortage of volunteers willing to take an active interest in the museum
- Space might be an issue over the next 3-4 years.
- Space. Funding
- Survival of museum
- The collection is handled by children - they can be a bit rough sometimes
- The collection is to be re-housed and represented in a new museum
- The main worry is that they are not behind glass or perspex
- The museum needs a new venue. Current premises becoming increasingly poor
- The need for further display facilities and better environmental conditions for storage. The collection is housed in an old building.
- Time/staffing for documentation
- Worsening financial constraints

Number of specimens in geology collections:
No response
- Lack of sufficient funding for appropriate collections care.
- Need to continue documentation, storage and conservation
- Needs - Documentation and Entry on to a new collections database. Threat - lack of storage or interest in the collection
- Needs proper documentation, cataloguing, storage and condition assessed. However for the moment it appears stable. Not enough room to store it properly.
- Uncertainty over storage to be provided by the Lottery-funded redevelopment, which is primarily concerned with the public face of the museum

Membership Renewal/Application Form

Please complete this form and return it with payment to:
Camilla Nichol, Curator of Geology, Yorkshire Museum, Museum Gardens, York YO1 7FR, UK (e-mail: camilla.nichol@ymt.org.uk)

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Organisation and address if different from above:	
Where did you hear about us?	

If you do not wish your details to be included in this year's membership list, please tick here ☐

Please copy and fill in this form and return it with payment to the above address.

Thank you.

ERRATA: THE STATE AND STATUS OF GEOLOGICAL COLLECTIONS IN UNITED KINGDOM MUSEUMS: 2001
THE GEOLOGICAL CURATOR 8(3) [2005], 53–136.

The last issue of *The Geological Curator* was devoted in its entirety to the report of the Geological Curators' Group survey on the state and status of geological collections in United Kingdom Museums. This extensive survey was commenced in 2001, and several hundred Questionnaires were sent to museums listed in Doughty's 1981 report. In addition Questionnaires were circulated to other institutions not listed in Doughty, but which were known to hold geological collections. In total 258 completed Questionnaires were returned, and the report published earlier this year was based on an analysis of the responses contained within them.

Since its publication it has come to our attention that the report contains some errors pertaining to the collections and staff numbers at the Oxford University Museum of Natural History (cited in the report as University Museum Oxford). For these inadvertent errors we apologise and publish the correct information below.

Page 89 stated that the Oxford University Museum of Natural History employed 50 staff working full-time on the geology collection, whereas the correct number of staff is 8.

Consequently some of the inferences drawn from this error are incorrect. Figure 7.1 on page 90 tabulated the total number of hours that full-time members of staff spend on curation. This

No. of F/T staff working on geological collections	% of time spent on curation of geological collections	Hours per week (based on 37 hour week)
20	60	444
15	60	333
11	45	183
8	60	177
4	50	74
2	70	52
2	70	52
3	42	47
2	60	44
2	60	44
2	50	37
1.5	50	28
2	30	22
2	20	15
3.5	10	13

Figure 7.1

No of specs in geology collections	Name of Museum / Institution	Hours per week	Hours per 1000 specimens
Over 250,000	Natural History Museum (Dept. of Palaeontology)	444	0.88
Over 250,000	National Museum of Wales	333	0.67
Over 250,000	National Museum of Scotland	183	0.37
Over 250,000	Oxford University Museum of Natural History	177	0.35
Over 250,000	Sedgwick Museum of Earth Sciences	74	0.15
30,001 to 100,000	Somerset County Museum	52	0.8
30,001 to 100,000	University College London Dept. of Geological Sciences	52	0.8
Un-declared	Manchester University Museum	47	n/a
Over 250,000	University of Birmingham Lapworth Museums of Geology	44	0.09
100,001 to 250,000	Liverpool Museum	44	0.25
30,001 to 100,000	Dinosaur Isle Museum	37	0.57
10,001 to 30,000	Hampshire county Council Museum Service	33	1.65
30,001 to 100,000	University of St Andrews Geological Collection	30	0.46
100,001 to 250,000	Yorkshire Museum	28	0.16
30,001 to 100,000	Nottingham Natural History Museum	22	0.34
100,001 to 250,000	Hancock Museum, Newcastle upon Tyne	22	0.13
10,001 to 30,000	Royal Cornwall Museum, Truro	22	1.10
10,001 to 30,000	Sunderland Museum and Winter Gardens	18	0.90
30,001 to 100,000	Lancashire County Museums Service	15	0.23
10,001 to 30,000	Potteries Museum & Art Gallery, Hanley	15	0.75
Over 250,000	University of Glasgow Hunterian Museum	13	0.03

Figure 7.2

calculation was based on the museum's own estimate of the percentage time that was devoted to curation and the number of full-time staff. Oxford responded that 60% of staff time was spent on curation. Based on a 37 hour week, the eight members of staff would devote a total of 177 hours per week to curation, and not 1,110 hours as reported. A correct Figure 7.1 is given here.

Following this Figure 7.2 also on page 90, tabulated the number of hours spent on curation per 1,000 specimens in the collections. Oxford reported that it held over 250,000 specimens, and on the basis that 1,110 hours per week were spent curating the collection it was reported that 2.22 hours were spent on curation per 1,000 specimens. This calculation was incorrect and given the correct figure based on 177 hours should read '0.71' (see new Figure 7.2 earlier). Where the figures giving number of geological specimens are 'between 30,000 and 100,000' the figure used to calculate the curation time per specimen was based on an actual figure rather than a range: therefore a mean figure of 65,000 was used.

Reading additional notes where available in Questionnaires returned, most museum that listed 'over 250,000' specimens suggested that the best fit figure would be nearer 500,000 specimens (hence the apparent need to multiply the 'Hours per 1000 specimens' figure by 2).

It was also drawn to our attention that the Questionnaire returned by Oxford contained information relating to the Department of Palaeontology holdings and that it did not contain any information on the collections held by the Department of Mineralogy in the same Museum.

It was the intention of the Geological Curators' Group to provide as full a picture of the state and status of geological collections in the United Kingdom in 2001, but this survey could only be as complete as the returns allowed. Several times over the course of 2003 and 2004 the Recorder requested that institutions return Questionnaires. An appeal was published in *Coprolite* in November 2003 and reminders were sent to institutions by e-mail and by letter.

It was unfortunate that some gaps in the returns subsequently became obvious. Information for the mineralogical holdings in both Oxford and the Natural History Museum, London is lacking simply because that information was not provided. It is impossible for the GCG Recorder to be aware of all internal museum departmental structures, and she reasonably assumed that an institution that returned a Questionnaire would have reported on its complete geological holdings, and not just on a portion of them.