

TREASUREHOUSE & POWERHOUSE

An assessment of the scientific,
cultural and economic value
of the Natural History Museum



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The guardian of the UK's collection of natural history specimens – over 70 million of them. Some 125,000 young people come to the Museum in school parties each year – equivalent to 6,250 individual classes or one class from a quarter of all the schools in the country. Fulfils a number of functions which contribute to scientific research, higher education, schools provision, the tourist industry and, more generally, to the enhancement of the urban environment.



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STATEMENT FROM THE CHAIRMAN AND DIRECTOR OF THE MUSEUM

We asked Tony Travers and his colleagues to provide an objective overview of the impact of the Natural History Museum - what we do, what others think of us and how much our activities are worth financially. This resultant report has been prepared for the Natural History Museum in 2003, the 250th anniversary of the founding of the British Museum, of which we were physically a part until 1881.

Treasurehouse & Powerhouse conveys very well the challenges that we face in our various areas of endeavour – as a leading tourist attraction with almost 3 million visitors a year, as a scientific research institution with over 300 scientists, as guardians of the 70 million specimens of the nation's natural history collections, as custodians of our historic buildings and estates, and in delivering a learning, outreach and access agenda on behalf of government. It reveals the significant, sometimes surprising and wide-ranging impact the Museum has in the local, national and international community. For us to continue delivering in all these areas with diminishing resources is unsustainable.

It is intended that we will use *Treasurehouse & Powerhouse* as the basis for constructive dialogue with our funders and other opinion formers. We are determined that our Museum will develop and flourish over the next 250 years, and know that for this to take place we must have increased levels of financial support. This report provides the starting point from which the necessary dialogue will take place. Should you have any comments on this report we would be delighted to hear from you by email (direct@nhm.ac.uk).



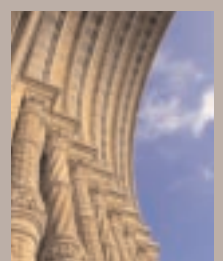
Sir Neil Chalmers, Director



Professor Sir Keith O'Nions, Chairman



Provides a fresh way of understanding the Natural History Museum. Encourages greater interest. Held in considerable affection. Appeals to younger audiences. Visitors from a range of social backgrounds. 325 pupils continuously throughout the school year. Provides urban space. The Natural History Museum is more than the sum of a number of its very different parts.





1. INTRODUCTION

Museums are not what they used to be. Having developed in a period of immense economic and political dominance for Britain, our great national collections have in recent decades had to adapt to a number of economic, social and cultural changes. The Natural History Museum (NHM) in South Kensington has been fixed in the cultural backdrop of British society by innumerable references in films, television programmes, novels and, crucially, within an international academic literature. This report describes and analyses the NHM within this economic, social and cultural context.

The Museum is a key component in the campus of institutions that occupy the so-called Albertopolis site – perhaps the world's greatest museum quarter – between London's Hyde Park and the stuccoed terraces of Kensington. It is a repository of one of the world's greatest collections of animals, plants, seeds and other natural things. It started as a home for the collections built up by explorers and scientists and now provides a bridge between traditional scholarship and the public's desire for accessible science.

At a mundane level, the NHM is a visible element in the local and regional economy. It employs hundreds of people directly and many more indirectly. Shops, cafes, transport operators and hotels benefit from their proximity to the Museum. Money is spent within London (and thus the UK) that would not otherwise be spent if the collections were elsewhere. If it were a free-standing museum within a town or city without dozens of other similar attractions, it

would be easier to identify its precise impact on the local economy. As it is, however, it is still possible to show the NHM in the context of other institutions so as to make clear its importance.

The academic and curatorial aspects of the Museum can also be understood more clearly if set in the wider context of analogous institutions at home and overseas. Only a small number of overseas museums can fairly be compared with the NHM. Within Britain, other museums, universities (or their departments) and visitor attractions provide a number of possible comparators.

The purpose of a study of this kind – and comparisons with other institutions – is to make it possible to understand more clearly the NHM's role within the cultural and economic life of London and the country more generally. Our research has also involved off-the-record interviews with a number of key individuals who have provided a constructive though

objective backdrop for the wider study. It is important to know the extent to which the NHM is meeting the expectations of funders, commentators and critics.

The Museum is a free-standing monument to values and scholarship, as well as a showcase for the complex and increasingly contested natural world. No report of this kind can provide a fully comprehensive analysis of an established and unique institution. What it can do, however, is provide a fresh way of understanding the Natural History Museum and, perhaps, encourage still greater interest from both its traditional friends as well as critics, researchers and policy experts and, most importantly, the wider public.



2. THE NATURAL HISTORY MUSEUM – WHAT IT IS AND WHAT IT DOES

The Natural History Museum is nationally and internationally known. It is clear from the interviews conducted for this project and from press coverage of the institution that it is held in considerable affection. It also has a capacity to appeal to younger audiences and, more than other museums, to visitors from a range of social backgrounds. It cannot be portrayed as simply an elite institution for a narrow section of society.

On the other hand, despite the affection and the popularity of the NHM, it is clear that it does not command the scale of attention that might be expected. In a world where museums must compete with growing competition from other leisure pursuits, the NHM is inventive and successful enough to ensure it does not hit the headlines as the kind of 'crisis' which so often precedes an increase in public funding. This fact, coupled with the very different activities undertaken within the NHM's remit, perhaps have the effect of leading to an image that is less widely understood than that of other institutions.

The complexity of the NHM's remit makes it very unusual. Having started life as a simple repository of flora and fauna, it has advanced to embracing a number of different purposes. It is a classic museum, an academic institution, a mass tourism destination and a large area of public space. In many ways, it has to combine the attributes of a first class university with those of, say, Alton Towers and, at the same time, hold large stocks of unique specimens that have a global significance. The NHM accepts and enjoys its extraordinary position.

But this does not make the maintenance of the position any the less challenging.

Thus, in its position as a classic museum the NHM acts as the guardian of the UK's collection of natural history specimens – over 70 million of them. This exercise alone is of global importance, given the threat of extinction faced by a number of species, the security of the UK as a place to hold such stocks and the scientific potential of many of the items held. Along with partner institutions, notably those in Paris, Washington and New York, the NHM has an international importance simply as a repository of flora and fauna.

The NHM's activities as, in effect, a university, can be easily overlooked. Because research takes place in laboratories and offices beyond the eyes of the millions of visitors, it is easy for the public to be unaware of the activities of scientists working with the Museum's collection either to preserve things or to carry forward knowledge. It is also fair to observe that while new resources have been provided in recent years to improve the attractiveness of the institution to its millions of visitors, the 'back stage'

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part of the Museum has not enjoyed the same scale of re-investment. This difference can easily be explained by a commitment to the visiting public. Nevertheless (as in many British public institutions) the time will soon come when the scientific underpinning of the NHM could be threatened by a failure to keep scientific resources up to date.

The Museum publishes academic papers in just the same way as a high quality university department. Such output is considered later in this report. In addition to a higher education function, of course, the NHM is also providing education for a large number of school pupils. Some 125,000 young people come to the Museum in school parties each year – equivalent to 6,250 individual classes or one class from a quarter of all the schools in the country. The NHM is, in effect, providing places for about 325 pupils continuously throughout the school year – as if it were itself a school.

Far and away the most visible element of the NHM's activities is its operation as a visitor attraction. It is interesting to imagine what the Victorian creators of the collections that now make up institutions such as the NHM would make of the need to accommodate almost three million visitors a year. In 1870, London's total population was just over three million, so today's visitor numbers are equivalent to the population of what was, in the late nineteenth century, 'the largest city the world had ever known'.

The coming of universal education, mass tourism, television and a developed fascination with many elements of the natural world – particularly environmentalism – has presented the NHM with a mass audience that would have been unimaginable in the heyday of

Victorian science. Yet the very scale of the Museum's popular reach means it must now compete with an array of razor-sharp market-driven institutions such as theme parks, waxworks, royal palaces, Ferris wheels and sport. Television, with its vast budgets, can show natural history programmes that whet appetites (which is good) and simultaneously up the ante in terms of visitor expectations (which presents a challenge). The NHM also faces competition from its peer institutions elsewhere in London and beyond.

So there can be no doubt that the NHM must, in part, act as if it were a competitive market-seeking attraction. The Government sets targets for growth in visitor numbers, and for higher growth in particular segments of the market. But, unlike institutions in the private sector within the tourism industry, the NHM must respond to demands upon it without recourse to the kind of user charges that can be used to justify investment. Since the Government chose to replace entry charges with an increased government grant, the freedom available to the NHM and many other British cultural institutions has been significantly reduced. There is, arguably, a conflict between the need to compete in the tourist market and the requirement that there can be no admission charges.

Finally, the NHM – like other museums and galleries – provides urban space. The Museum is a very large public building in the centre of one of the world's largest cities. Its campus is open and can be used by citizens in the way they use parks, streets and other public space. A significant academic literature exists about the importance of well-maintained, communal, places for people to meet and mingle. The NHM has recently added to the attractiveness of its campus by

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mounting exhibitions outside the buildings, in the grounds immediately surrounding them. This decision to bridge the space between the pavement and the Museum's building is symbolic of the importance of the wider function of the NHM – to allow public mingling, discussion and education but within a safe and easy environment.

Thus, the NHM is more than simply a large national museum. It fulfils a number of functions that are less widely understood and which contribute to scientific research, higher education, schools provision, the tourist industry and, more generally, to the enhancement of the urban environment. Other sections of this report consider the economic impact of the NHM. What is certain is that the Natural History Museum is more than the sum of a number of its very different parts.



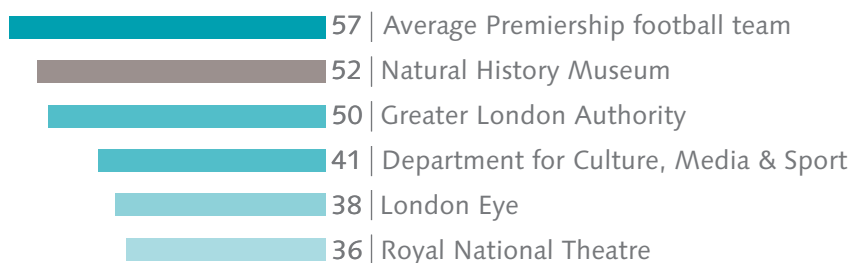
3. ECONOMIC IMPACT OF THE NHM

The Natural History Museum is a national institution with local, regional, national and international impacts. Any public institution such as the NHM must be able to justify its position as a consumer of public and private resources. An increasingly critical and highly-educated policy debate keeps all public institutions under a microscope, particularly in terms of how they use resources and their value for money. It is also instructive to consider how a museum or gallery impacts in economic terms. This section will consider the local and wider economic impacts of the NHM in London and the country as a whole.

The annual turnover of the NHM is just over £50 million a year (£52.2 million in 2002–03). This is the Museum's direct expenditure on all items – a measure of the resources flowing through the institution to employees, suppliers and other organisation. This sum is significant in itself, implying a cascade of resources into the local, regional and national economies. The geographical incidence of this expenditure is considered in later sections.

To put the NHM in context, **Table 1** below compares the turnover of the Museum in 2002–03 with broadly equivalent figures for other kinds of national or regional bodies. The turnover, at £52 million, is – perhaps surprisingly – close to the average for a Premiership football team. Its spending is slightly greater than that of London's city-wide government and significantly more than that of either the London Eye or the National Theatre. The NHM's turnover is also similar to that of a smaller university or a medium-scale hospital.

Table 1
Natural History Museum turnover compared with other institutions, 2002–03. (£millions)



Notes: (i) GLA expenditure is for City Hall administrative costs and excludes functional body (service) expenditure. (ii) DCMS 'administration and research' costs include capital spending.

The full impact of the NHM and the expenditure it generates from visitors is estimated to be in the range of £161.56 million and £189.55 million

Rather more important than such comparative turnover figures are the wider impacts on the economy. Direct expenditure by the NHM is not, of course, the only kind of expenditure generated by its existence. People who visit the Museum will spend money in the local, regional and national economies that – certainly in the case of overseas visitors – would not have otherwise been spent. The calculation of such amounts is not straightforward, though broad and reasonable estimates can be made. A full account of the method used for this report is included in the Appendix. The findings are summarised here.

The Museum's direct expenditure is £52 million. To this amount must be added the totals spent by UK and overseas visitors to the NHM, estimated (very conservatively) at £15.96 million for UK visitors and between £39.75 million and £59.50 million by overseas visitors. This suggests that overall visitor spend falls in the range £55.7 million to £59.5 million. Economic impact studies generally seek to estimate the wider (indirect and induced) effects of expenditure of the kinds shown above. That is, when the NHM's resources are spent by its staff and on suppliers, and when visitors put money into the regional economy, what is the 'multiplier' effect.

Economic impact studies often use multipliers of 2.0 or above. This report is far more cautious, and has used a multiplier of between 1.5 and 1.7 to generate a plausible range of indirect and induced effects. On the basis of these multipliers, the full impact of the NHM and the expenditure it generates from visitors is estimated to be in the range £161.56 million and £189.55 million.

The NHM's direct expenditure is largely, but not wholly, funded by government grant. It might be argued that the grant-in-aid funded proportion of the Museum's income (£38.09 million) could be used for other purposes within the public sector, or to pay for tax cuts. However, there is little doubt that in its current use – to support the NHM – each pound provided by the grant appears to produce between £3.25 to £4.00 in wider economic benefit.

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4. THE IMPACT OF SPENDING ON EMPLOYEES, GOODS AND SERVICES

The NHM's turnover was £52 million in 2002–03. Of this total, some 60 per cent was devoted to staff salaries. There are just over 800 full-time staff, plus 120 part-timers and 100 contractual staff. Beyond the £52 million spent directly by the Museum, there will be indirect impacts as a result of the fact the NHM's expenditure buys goods from suppliers who can then use the resources to buy more goods. This so-called multiplier effect is considered elsewhere in the report.

The direct effect of the NHM's activities will be seen in the resources that flow through its employees into the neighbourhoods within which they live. Given the Museum's location on the western fringe of central London, it might be expected that there would be a concentration of employees in west London. If that were the case, the economic impact of NHM salaries would be heavily concentrated in one of the most affluent parts of the United Kingdom.

In fact, the distribution of NHM employees is radically different from what might have been expected. **Figure 1** shows the geographical distribution of NHM staff within England. There is, if anything, a slightly eastward bias in the pattern of residence. But, more importantly, the wide geographical spread of NHM employees suggests their economic impact will be felt in many parts of the South-East.

Within London, NHM employees live in many of the most challenged areas of the city. 61 NHM staff live in 'E' postal districts, including 14 in those with the some of the lowest income levels (E6, E15 and E17). 103

employees live in 'SE' postal districts, including a number in areas with very low income levels. A number live well outside the capital, in towns such as Brighton, Dartford, Guildford, Chelmsford, Luton and Milton Keynes.

The largest concentrations of NHM employees are within boroughs just south or west of Kensington & Chelsea: Wandsworth, Hammersmith & Fulham and Lambeth are all home to 20 or more. As for all workforces, there is a trade-off between convenience and the size of property. But even these boroughs include mixed or poor neighbourhoods, suggesting that the NHM impact is being felt in areas that continue to need regeneration and improvement.

Thus, the direct effect of NHM employment will be felt throughout London, including in many of the poorest areas of the city. The reason for this wide geographical spread will in part be because of the relatively modest remuneration of museum and gallery staff. In common with universities, the performing arts and most public services, the very high costs of living in inner London leave

employees with little option but to commute to work.

The beneficial side of this need to travel to work is that NHM employment is contributing directly into the local economies of dozens of neighbourhoods throughout London and beyond. The disadvantage (for the Museum) of the large travel-to-work area is the vulnerability of the workforce to transport difficulties. In addition, staff will generally have to travel for far longer each day than those working in similar institutions elsewhere in the country.

A similar analysis can be undertaken to measure the geographical impact of the NHM's spending on goods and services from suppliers. As with staff, it might be expected that the benefits of NHM expenditure would be predominantly concentrated in inner southwest London. As part of this study, the location of the Museum's spending has been analysed and is presented in **Figure 2**. The Museum's spending is very widely spread about the UK, with some expenditure in most parts of the country.

The extent of the NHM's reach as the result of its purchase of goods and

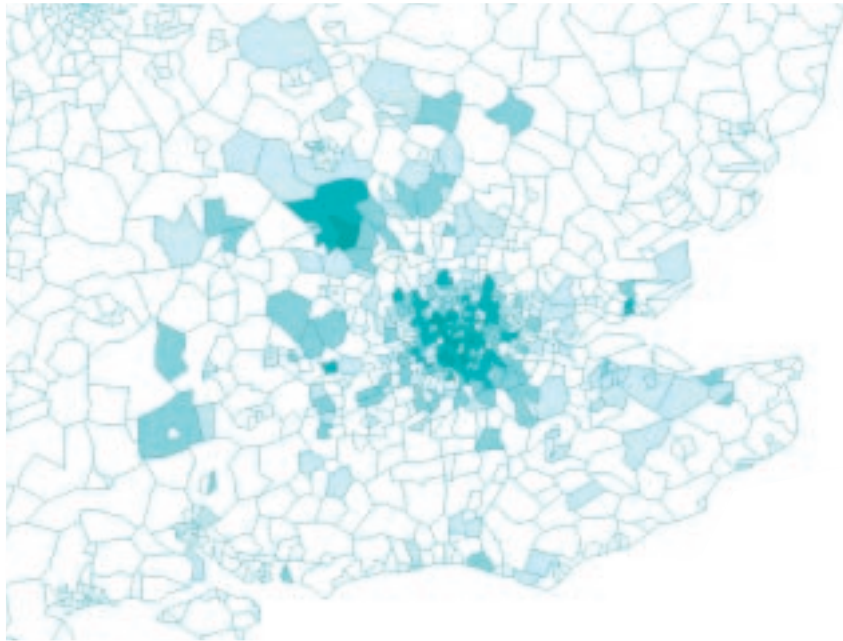


Figure 1
The geographical distribution of NHM staff within England.

Number of staff	
10 to 23	(10)
4 to 10	(63)
2 to 4	(96)
at least 1	(120)
0	(2468)

services is extraordinary. Taxpayers' – and privately-earned – resources flowing into the NHM in South Kensington are then being used in all parts of the country, thus supporting economic activity well beyond London and the South-East. In this very obvious sense, the NHM has a genuinely national reach.

In addition to the geographical location and consequences of the NHM's direct employment, the economic impact generated more widely in the economy (as estimated in Section 3) by the expenditure of NHM visitors and by the wider indirect and induced impacts of this spending will be significant. On the basis of average gross male earnings (Office of National Statistics, 2003a) for workers in the leisure and catering industry – £17,730 per annum in April 2002 – who would, plausibly, be the most important group to be employed as a result of NHM-related expenditure within London, the number of jobs supported is likely to be in the range 1,225 to 2,020 – implying an overall employment total related to the NHM (including its own staff) of between 2,125 and 2,920.



Figure 2
The location of the Museum's spending



5. THE NHM AS A VISITOR ATTRACTION

The days when museums were places of scholarship visited by a tiny minority of the population are long gone. Today museums and galleries are part – for better or worse – of a wider economy of leisure activities and cultural industries. The scholarship continues – in libraries, laboratories and offices behind the large public galleries. But for the majority of the population the Natural History Museum is a visitor attraction alongside – and competing with – many others.

Such a change is not unique to Britain, as another section of this report suggests. Museums and galleries now have to compete with cinemas, theatres, theme parks, shopping, sport and many other leisure activities. The total number of visitors to events and institutions has become synonymous with their success. Cities and countries face similar competitive pressures when comparing visitor numbers. Does London attract more overseas visitors than Paris or New York? Which city is the world's fashion leader or modern art trendsetter? Museums such as the NHM must now fit into this background.

The NHM is a major draw in these terms. **Table 2** below shows the number of visitors to the top ten unpaid visitor attractions in Britain during 2001. The NHM came fifth, with fractionally under three million visitors. Interestingly, a number of other museums and galleries now fill up this table as a result of the government's decision to remove entry charges. However, if the number of paying visitors to the NHM in the years before charging was removed (typically about two million), numbers were close to those for attractions that still charge for entry. The Tower of London, for instance was the second most visited paid-for attraction in Britain in 2002, with just under two million visitors. The Eden project (third most visited) attracted 1.8 million and Legoland Windsor (fourth) 1.5 million visitors. So it

appears that even if entry charges were still in place, the NHM would be one of the most visited attractions in the country.

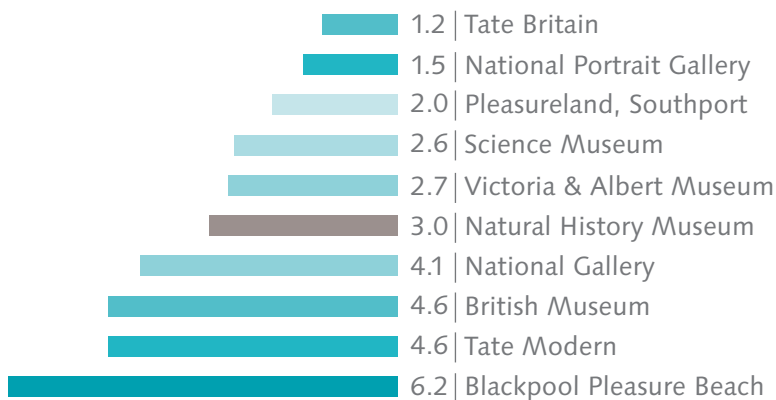


Table 2
Attendances at major free attractions, 2002. (millions)

Note: figures rounded to nearest 100,000
(Source: Survey of Visits to Visitor Attractions, UK Tourism Facts, 2002)

Another way of putting the NHM in context is to compare the number of people who visit it from overseas as a proportion of all overseas visitors to London and the UK. **Table 3** below shows such a comparison.



Table 3

Overseas visitors to UK, London, & NHM 2001. (millions)

About 13.5% of all international visitors to the capital decided to go to the NHM

The table above shows that of 22.8 million overseas visitors to the UK in 2001, 6.6 per cent visited the NHM. About 13.5 per cent of all international visitors to the capital decided to go to the NHM. These figures suggest the Museum is a powerful draw for both the UK and London tourism industries. The extent – and recent growth – of competition for the NHM both within London and the rest of the country as new Millennium and other Lottery-funded attractions have come on the market makes this achievement all the more remarkable.

Another way of putting the NHM's capacity to draw visitors in perspective is to look at overseas visitor numbers in comparison with those visiting other parts of the country. That is, how attractive is the Museum as compared with, say, Scotland? While this comparison is not really like-for-like (after all, people go to regions of the UK for many reasons, while in many cases they visit the NHM among many London attractions) it does make it possible to see the scale of the task facing the Museum's staff and curators.

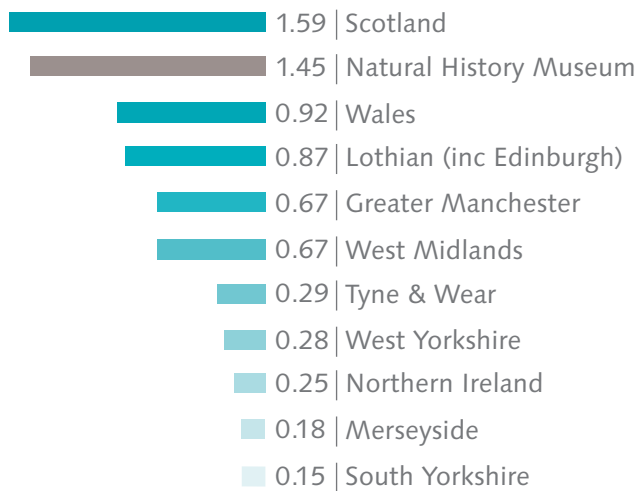


Table 4

Overseas visitors, NHM, selected countries and areas of the UK, 2001. (millions)

As **table 4** shows, the number of overseas visitors who chose to visit the NHM in 2001 was virtually the same as the overall total for Scotland. Overseas visitors to each of the former metropolitan counties – centred Manchester, Liverpool, Sheffield, Newcastle, Birmingham and Leeds – are dwarfed by those attending the NHM. As stated above, this is not really a like-for-like comparison. But it does give a sense of the scale of visits to the NHM and the pressure this will put on its facilities.



A final analysis to test the attractiveness of the NHM looks at its importance within the UK. Almost as many British visitors (1.4 million) as overseas ones visited the Museum in 2002–03. Within this total, over half came from outside the London region. A recent opinion poll makes it possible to gauge the affection in which the NHM is held in the country as a whole. A YouGov poll conducted for the Daily Telegraph in August 2003 asked people from throughout the country which of a list of London attractions they would like to visit if given the chance. The results are shown in **Table 5**.

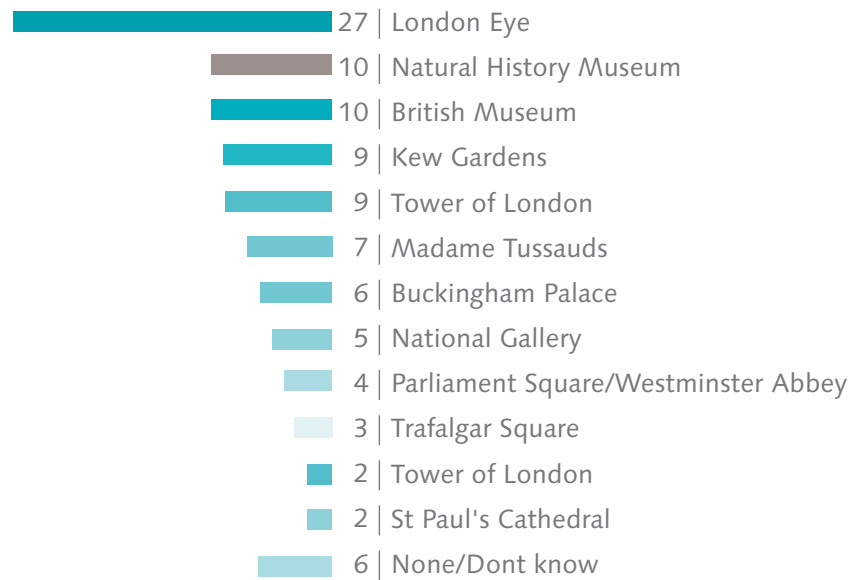
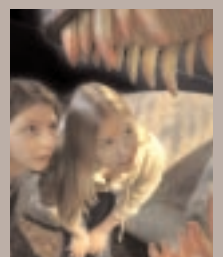


Table 5
Popularity of London visitor attractions among British population (%)

Polling can always be criticised. However, the NHM's popularity – in a national poll – suggests the institution is an important element of London's (and therefore Britain's) tourism offer.

Fifth most popular free UK attraction
1.45 million international visitors
3 million visitors
800 full time staff
120 part-timers
100 contractual staff
£52 million turnover in 2002-03
£1 grant produces £4 in economic benefit



6. THE NHM'S SCHOLARSHIP

Unlike most museums the Natural History Museum has a large volume of scientific research activity. Any overall evaluation of the Museum must include some judgement of the value of this research.

Objective evaluation of research is a notoriously difficult subject, as has been illustrated in the university sector by the controversies surrounding the Research Assessment Exercises (RAE). The most recent RAE was carried out by Higher Education and Research Opportunities and relates to the four years 1997 – 2000. This is available in detail for inspection on the internet at <http://www.hero.ac.uk/rae/index.htm>.

One approach to evaluating the Museum's research might be to convene expert assessment panels in the relevant subject areas and to carry out the same kind of appraisal as the last RAE did for all university research. This would give an indication of how the quality of the NHM's research activity would be judged if it were a university. However, such an exercise would be beyond the resources available to this study.

We have undertaken two more limited exercises. First, we have sought the objective opinions of distinguished academics who are familiar with both the RAE process and with the NHM's work. Second we have conducted a crude count of the number of articles by the NHM's staff in peer-reviewed journals and compared that with similar counts

relating to university staff in the relevant disciplines as recorded in the RAE by university departments which were awarded a 5 or 5* grade assessment (the highest grades).

The individuals we spoke to regard the NHM's research highly. They noted particular strengths in classification and taxonomy. It is in the nature of that kind of work that several years of work might produce one definitive publication – and so might not show up well in raw counts of publications. They described the research as 'enormously valuable'. They advised that it is difficult to compare directly on the 'conventional' university RAE criteria. Because of the nature of its work the NHM would be low on publications in the very 'top' journals and also in the amount of outside research money brought in, both of which are important to the RAE. However, it was felt the Museum would probably be of 5* standing if judged simply by the 'publications' element of the 2001 RAE.

Count of research publications

The disciplines identified in the publications list in the Natural History Museum's 2001/02 Annual Report are Botany, Entomology, Mineralogy, Palaeontology and Zoology. We analysed the submissions published by the 2001 RAE from the following relevant disciplines:

Biological sciences

Cambridge (biochemistry)

Cambridge (zoology)

Institute of Cancer Research
Imperial College London

Earth Sciences

Royal Holloway College

University College London

University of Edinburgh

University of Cardiff

Mineralogy and Mining Engineering

Herriott Watt

Imperial College London

These appeared to be the RAE subject groups closest to the classification of the NHM's publications. In each case they are all the 5 or 5* departments, except that there are so many in Biological Sciences (26 at 5*) that we only considered the limited selection indicated above.



For each individual researcher in each departmental submission we recorded the number of publications for the single, most recent year available, 2000.

In constructing these counts for the NHM list, if two NHM staff appeared in the list of authors of one paper then the Natural History Museum score was increased by two. This was for comparability with the RAE list in which the same paper could be claimed by each of its authors.

In the case of the Universities the number of individuals recorded in the table is the number of "full time equivalents" as returned in the RAE. In the case of the NHM the numbers are approximate and are simply the total number of staff connected with each department. These comprise research staff (105 in total); non-research staff producing peer reviewed publications (29); and associates/ students and others (87). We have not attempted to convert NHM researchers into 'full time equivalents' though the staff numbers would be considerably reduced if this had been done (and 'articles per staff member' would be correspondingly higher).

It is apparent that the rate of peer-reviewed publications per individual calculated in this manner for the NHM compares favourably with that for the 5 and 5* university departments that we investigated.

Some important caveats must be noted. Most importantly, the rules of the RAE limit the number of articles that any one person may nominate to a maximum of four, published within the four year period of assessment (and to fewer than four in the case of some staff categories). Therefore, some of the more university prolific authors will have had more potentially eligible publications in the year 2000 than those listed in the RAE return.

University department	Staff (Full time Equivalents)	Articles	Articles per staff member
Biological Sciences			
1	41	48	1.17
2	58.4	68	1.16
3	25	17	0.68
4	74.7	78	1.04
Earth Sciences			
5	18.5	25	1.35
6	33.3	37	1.11
7	52.7	66	1.25
8	27	31	1.15
Mineralogy and Mining Engineering			
9	24.2	30	1.24
10	39	43	1.10
Universities' total	393.8	443	1.13
Natural History Museum			
Botany	35	89	2.54
Entomology	64	132	2.06
Mineralogy	29	88	3.03
Palaeontology	38	94	2.47
Zoology	55	201	3.65
Natural History Museum total	221	604	2.73

Also some eligible publications are not explicitly listed in the published returns. Therefore the publication rate per individual for the RAE in 2000 will be understated and probably substantially so. Also the definition of what counts as a 'peer-reviewed publication' may vary between the RAE and the Natural History Museum Annual Report. Finally, we were not in a position attempt to assess the qualities of publications.

Notwithstanding these caveats it is reasonable to conclude that, subject to the limitations of our analysis, the Natural History Museum probably has a quality and quantity of published research output that stands comparison with the better university departments and it is quite possible

that it would be ranked amongst the best had it been a part of the standard 2001 Research Assessment Exercise. With a total research staff (broadly defined) of 221 individuals and five departments the Museum is a research institution of considerable size.



7. THE NHM AND THE PRESS

One measure of the salience of an institution in national life is its visibility and reception in the press. We deal elsewhere with the qualitative attitudes of key decision-makers and journalists. But as a simple test of the NHM's capacity to attract and hold the media's attention, a scan of newspaper archives gives a snapshot of the extent to which the Museum can hold the attention of a rapidly moving press agenda. Put simply, how often does the NHM's work – through exhibitions, scientific discoveries, expert opinion and for other reasons – get reported in the broadsheet newspapers?

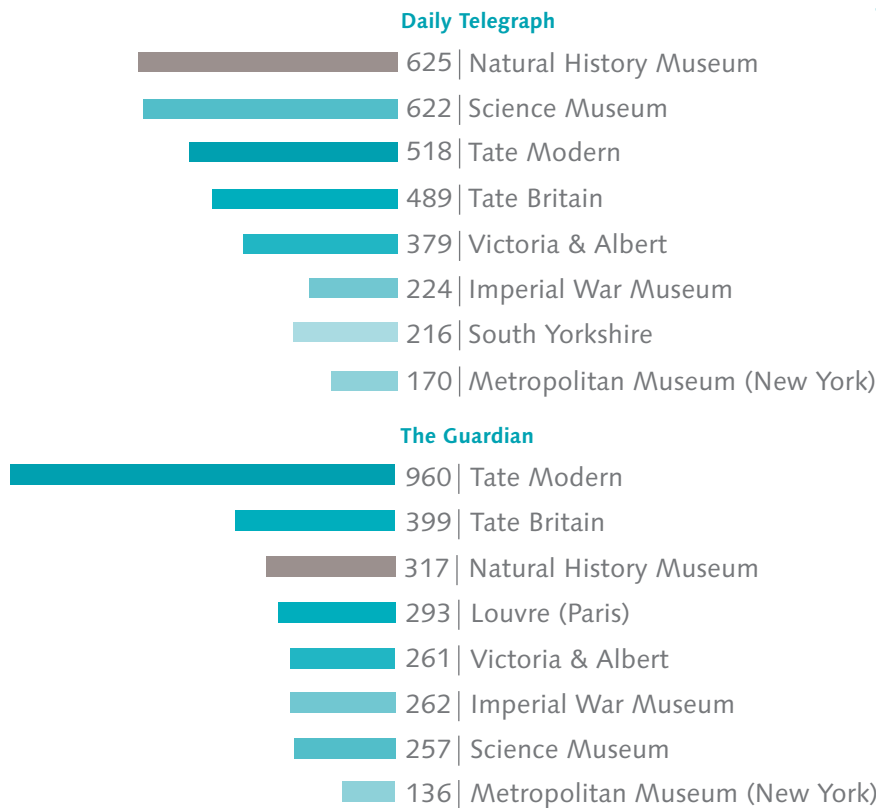


Table 6

References in broadsheet newspapers, 1996/1998 to 2003

The NHM appears to have achieved rather more effective media presence than some other institutions.

Table 6 opposite shows the number of references to the NHM in the Guardian and the Daily Telegraph since 1996. To put the results into perspective, a number of other museums and galleries in Britain and overseas are also shown. The selection is intended to compare the Museum with other institutions in London that have a similar function, albeit in different scientific or cultural fields.

Of course, this kind of analysis is not able to make qualitative judgements about the scale or kind of content referring to different institutions. References can range from a full feature on a major exhibition to a single quote by an expert or even a mention in a novel. But the figures do give an indication of how well the Museum functions in projecting itself into a ruthlessly competitive newspaper market. Qualitative views of the NHM – including those of leading journalists – are considered elsewhere in this report.

The NHM has received references in the two leading newspapers that have been analysed at broadly the same rate as similar institutions within London. Tate Modern's figures, which were far higher than all other institutions mentioned by the Guardian probably benefited from spill-over from its opening. Apart from Tate Modern, the NHM appears to have achieved rather more effective media presence than some other institutions.



8. THE NHM AND COMPARABLE INTERNATIONAL INSTITUTIONS

The Natural History Museum is one of the greatest collections of its kind in the world. There are few institutions that have the depth of collections, academic expertise and, simultaneously, the capacity to attract multi-million visitor attendances. In undertaking this study, three institutions were selected for comparative purposes:

- American Museum of Natural History, New York
- National Museum of Natural History, Washington DC
- Musee d'Histoire Naturelle, Paris

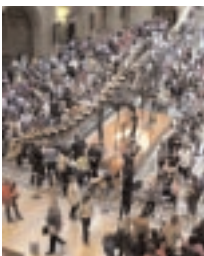
In each case, published sources were searched. However (see below) there are very few publicly available data about the operations of these institutions. As a result, it proved necessary to contact each museum and to request data about attendances, turnover and staff totals.

The results of this exercise are shown in the table below.

Table 7
Natural History Museums:
International comparisons, 2001

	Attendance	Turnover	Staff
Natural History Museum, London	2.9m	£50m	1,030
American Museum of Natural History, New York	5.0m	£113m	1,600
National Museum of Natural History, Washington DC	9.0m	£50m	1,200
Musee d'Histoire Naturelle, Paris	2.1m	£53m	1,800

This modest attempt at international benchmarking shows that big differences appear to exist between the world's leading natural history institutions. Most obvious is the comparatively large level of resource available to the American Museum of Natural History in New York: its annual expenditure is over twice that of the London NHM. The figures for the National Museum of Natural History in Washington must be treated with some care. It is part of the massive Smithsonian Institution and part of its central costs are almost certainly borne within the general costs of the whole complex.



Accountability demands placed by the British government on institutions receiving grant-in-aid appear to be significantly greater than those demanded by governments of equivalent institutions in countries overseas

Table 8 shows the sources of income for three of the four museums:

	Charges %	Government %	Other %
Natural History Museum, London	7	65	28
American Museum of Natural History, New York	46	30	24
National Museum of Natural History, Washington DC	0	72	28

Sources of income for the three institutions vary significantly. The New York museums each charge for admission and thus derive a major proportion of their income from this source. In London and Washington, the institutions depend very heavily on government grants. New York has a far higher level of philanthropic resources than the other three museums, allowing it a far more generous level of funding overall.

In undertaking this limited international comparative exercise, a number of differences have emerged about the demands placed upon the NHM – and other British museums and galleries – as compared with similar institutions in other countries. Requirements to demonstrate particular kinds of diversity among those attending institutions and to publish transparent accounts of activities are far more advanced in Britain than in France or the United States.

In short, accountability demands placed by the British government on institutions receiving grant-in-aid appear to be significantly greater than those demanded by governments of equivalent institutions in countries overseas. Institutions contacted in France and the United States were not able to produce easily-accessible data for attendances. Two of the three major international institutions used for comparative purposes appear to include no financial data in their annual report (though American not-for-profit organisations are required to file detailed – and publicly-accessible – tax returns). There are no performance indicator requirements for museums in countries with such different government traditions as France and the United States.



9. VIEWS OF THE NHM – A QUALITATIVE ANALYSIS

Another part of this research involved a series of interviews with leading experts, journalists, museum officials and other commentators concerned with natural history scholarship and its dissemination. The purpose of these interviews was to create a qualitative picture of the way the NHM is seen by those whose opinions have an important bearing on the way in which institutions such as the NHM are viewed. Interviews were undertaken independently of the NHM, and the following discussion seeks to present a balanced view of the picture that emerged.

What is most striking about talking to 'elite' interviewees about the Natural History Museum is what is missing. Mention virtually any British institution to such a group of people and sooner or later a rather jaundiced, knowing, weary tone emerges: 'Well, this is Britain: what do you expect?' But in talk about the NHM there is virtually none of this worldly cynicism. There may be criticism, frustration and suggestions for improvement, but the underlying attitude is consistent. It is one of praise and respect, and, most of all, a wish to see the Museum's influence become greater.

A distinction needs to be made in handling the notion of impact. There is straightforwardly the sense of whether the Museum does well what it sets out to do. But there is also the sense of whether what it does is widely recognised. Impact is as much about profile as it is about work. The two issues are related. The greater the profile the greater the opportunity for doing more work, and so, overall, the greater the potential for impact. In

discussing impact, therefore, both things are in play.

The summary that follows of opinion expressed about the museum's impact is divided into a number of sections, starting with a consideration of the NHM's current impact.

1 Recognition of NHM's impact

a Reputation

There is no doubting the strength of the NHM's reputation. 'It is one of our strongest institutions.' 'It has a strong, positive image.' It is a 'highly respected organization'. The public that visits it has 'huge affection for it'. The Museum 'does a hell of a good job'. 'There is no hyperbole that is too great for this collection.'

Its place within the international landscape is consensually acknowledged. It is '*the* museum: the bedrock for classic biology'. Differences of view were expressed about its relative standing, but no one challenged its place within the top

'It is *the* museum: the bedrock for classic biology'



three, along with the Smithsonian and Paris, notwithstanding differences in resources.

b Scientific work

The quality of its scientific work was thought to be unsurpassed. 'The Museum does work of awesome value with sums that are trivial.' Those we spoke to who make professional use of the Museum's scientific expertise were unstinting in their praise. Work done here is 'always excellent'. There has been a consistently 'high standard of quality work'. This is due to the quality of staff. Of some of the scientists referred to it was said that 'the Museum is very lucky to have them'.

c The last ten years

In relation to the Museum as a whole, the common view was that it had been transformed over the last ten years or so. 'Ten years ago there was a feeling of it being a bit crusty and out-of-date. Neil Chalmers has got rid of that.' The Museum had been 'turned round'. Lots of things had been done to bring it up-to-date. Chief among these is the Darwin Centre. It is 'a great idea'. It is 'a fantastically bold move to change the impression [of academic stuffiness]'. It is 'a good step: it's great to have scientists speaking to the public'.

d Visitor attraction

Of the attractiveness of the Museum as a whole to visitors, opinions ranged between 'quite strong' to 'very modern and forward-looking', though it was said there is always scope for innovation. One interviewee regretted that the attempt to make the Earth Galleries more appealing had resulted in there being, in his impression, fewer exhibits on display. What came in for special praise was the opportunity afforded for the public to

interact with the Museum.

'Interaction with the public is excellent. You go down there and it's buzzing.' As a visitor attraction it was acknowledged to be one of the top ten in Britain, and the top five in London.

e Children

Its appeal to children was praised and thus its fulfilling an educational role: a priority of government policy. One interviewee, however, did wonder whether this might not have been overdone, and that the Museum was now pitched too much to those aged 13 and under.

f Free entry

The other government policy to which the Museum has had to respond in recent years is free access to museums. Interviewees generally thought the NHM had rallied well to the end of charges, especially given what some of them regarded as inadequate compensation by government.

Some, though, questioned the policy itself. They were dubious as to how much any increase in the number of visits reflected an increase in the number of visitors, or whether it meant some people just dropped in more often, as a nice thing to do at lunchtime. Some said that while they could well see the value of free access to certain groups, like children, they could see no reason why, for example, the wealthier residents of Kensington or rich tourists should not have to pay. Indeed it was suggested that free access might hinder opportunities for greater promotional work: joint ticketing for Kensington's museum's, for example, would enable tourist promotions, with discounts, which could raise the profile of the Museum as a desirable place to visit.

It was also suggested that free access might impair the quality of a visit to the Museum if it meant there were too many people milling around. In any event, it was recognised that the policy was probably here to stay, and that the Museum should accept the fact.

2 Room for improvement

While praise for the current impact of the Museum tended to be broadly consensual, specific criticisms tended to be individual and not endorsed by others. Several, however, are worth mentioning because they were strongly expressed.

a Lack of understanding of the Museum's scientific role

The Museum's science of systematics – and its practical application – is not clearly understood by the general public, whose expectations are that the Museum actually undertakes wildlife and habitat conservation. There is clearly a significant job to be done to communicate the role of the Museum's science, but also to build on its high profile so as to create links and partnerships with those organizations that do such conservation. It was suggested that the Museum's work had not been adequately applied to the pursuit of conservation. 'Try showing me a reserve which has been created as a result of the science they have done on diversity. I don't believe you could.' It was argued that demand from NGOs in the field could be tapped to do so.

b Demands for transparency

The public makes increasingly high demands to see more of the science that is going on and to meet the scientists who carry it out. As a



'the reason the collection is so priceless is that it contains the answers to lots of questions we have still not asked, but which may prove vital to the future of mankind'

publicly funded institution with a mission to inspire, the Museum must engage with its public on their (i.e., the public's) terms. The Darwin Centre is a response to this demand and reflects a drive to increase accessibility to science, scientists and collections.

It was also suggested that despite the progress, 'the science still sits too much in the cupboard'. Scientists are still seen as insufficiently accessible to visitors to the Museum. 'It ought to be possible to take the public into the labs. It would be wonderful if something could be set up so that, say, people were able to do their own DIY DNA finger-printing.'

c A public information leadership role

The Museum is looked to as being a non-partisan place where people can turn to for objective information about the natural world. The role of the Museum as the primary source for information on relevant and topical issues as well as simple facts could be further explored.

However, there was also a sense that visitors to the Museum (and the world generally) are still too little aware of the valuable scientific work that goes on there. The suggestion was made that people leaving the Museum might be given a leaflet drawing attention to the fact that while it was hoped that they had had a great and enjoyable experience, elsewhere in the world people were facing very severe problems, some of which the Museum was at the forefront of trying to tackle. These could then be explained. This remark suggests people want more of the type of information the NHM is well suited to provide.

d Scope for greater impact

It is probably the case that all suggestions as to how the Museum might increase its impact come down in the end to a question of resources. Nonetheless it is perhaps helpful to distinguish between those cases where the problem is straightforwardly a matter of resources, and those where the prior issue might be said to be whether or not the Museum has grasped the potential open to it. This distinction emerged during the interview and is dealt with in order below.

3. Resources

Constraints

It has already been remarked that interviewees seemed well aware that the Museum was doing its work constrained by very tight resources – 'doing awesome work with trivial funds' – and particularly so in comparison with its international rivals. Those we talked to perceived some of the consequences of this.

a Effects on facilities

One of these is the quality of the facilities used by the scientists. One of the interviewees who had visited the laboratories said they were 'grotty' and 'pathetic'. Another said he thought the standard of equipment generally had declined in recent years.

b Effect on staff

The other effect was on the staff. We were told that there was a general feeling among many of them that they 'were being treated badly', not so much by the Museum itself but by virtue of their working in the museum sector as a whole.

Since the end of national pay-bargaining among government scientists, discrepancies had arisen between different departments. Scientists working, say, in the Home



Office might be earning as much as £2,000 a year more for doing the equivalent sort of work. This bred resentment. Science graduates who chose to become teachers rather than practitioners could attract London-weighting worth £4,000 unavailable to scientists at the Museum.

While it was thought that this had not yet affected recruitment and retention it was feared that in time it might. It was suggested by one interviewee that the historic reputation of the Museum's scientific work had been in part built upon the willingness of academics with private means to devote their lives to the work and to the institution. Such people do not exist any more.

4 The scope for increased scientific work

The scope for more scientific work should resources allow is not in doubt. Indeed it is the reason why the Museum is regarded as such an important institution. As one interviewee put it: 'the reason the collection is so priceless is that it contains the answers to lots of questions we have still not asked, but which may prove vital to the future of mankind. If you tried to gross up the increase to the wealth of the world owed to the Museum it would amount to billions.'

That untapped wealth consists of the scientific work still to be done in taxonomy and systematics. The trouble is, as another interviewee put it, biodiversity work is the 'non-sexy end of natural history'. It needs to be comprehensive because the vital discoveries can pop up anywhere, but that means potentially a large demand on resources.

This was acknowledged in a House of Lords report in 2002, which called for

more resources to be made available for this work. It was endorsed too by those we spoke to in international organizations concerned with world food and health problems that make use of the Museum's scientific expertise. There is 'room for much more work'.

5 Supplementary sources of funding

While government remains the principal source of funding, it is the case that since the mid-1980s governments have encouraged institutions like the Museum to supplement their incomes from elsewhere. Before looking at the attitudes of our interviewees to government funding and its relation to the Museum's opportunities for increasing its impact, these supplementary sources are discussed. However, it remains important to stress that these are only supplementary sources and that interviewees accepted the importance of government funding.

a Sponsorship – realism required

It was generally accepted that while the Museum has significantly benefited from sponsorship in the past, and may continue to do so to some extent in the future, it was not likely to prove substantial other than for capital projects. In the first place this is because the arts (or more specifically 'flat art' as an insider in the Museum called it) tend to get the bulk of sponsorship. This is because the arts generally tend to command more attention, and are more part of 'the glamour-game and the world of corporate entertaining'.

We were told the nature of sponsorship has changed. 'The old begging-bowl culture has gone.' In

particular sponsors tend now to want their donations to advertise their awareness of corporate social responsibility, and this in turn, for the moment at least, is best thought to be done through small-scale aid to local community projects. This rather leaves large-scale enterprises, whose work has global obligations (such as the Museum), rather out of things.

One interviewee said he thought it would be naïve of government to imagine the Museum could raise much through sponsorship.

b Commercial work – provides for inherent tensions

Providing commercial services for money is a relatively new venture for the Museum (taking place since the early 1990s) and indeed for the sector. We were told there was much less of it in Paris (where access to public funds seems largely unproblematic), and that even in commercial America, the Smithsonian was 'ambivalent' about it. The impression was that that ambivalence is reflected here too. It was thought that while there was enthusiasm for it in the top levels of the Museum, there were doubters elsewhere. There is perhaps tension for some staff between commercial and 'scholarly' work.

Insofar as it concerns the commercial exploitation of the scientific work of the Museum, the potential partly depends upon the resources available to clients. Where these are purely commercial enterprises as, for example, oil companies requiring the assistance of the Museum's palaeontologists, resources may not be a problem. Where the client is a public organization, they may be. One international organization we spoke to suggested there was no end to the



scope for working commercially with the Museum's Entomology Department in trying to control various diseases, but that there were severe resource constraints at its own end.

c Government funding: the DCMS

All government-funded bodies can make a claim to more resources so it was no surprise that our interviewees thought the Museum could do so too. But more pertinently most realised that the ability to do so successfully depended in part on which government department was the Museum's sponsor. After a history of being moved around between departments, the NHM now resides within the ambit of the Department for Culture, Media and Sport (DCMS).

To some of our interviewees this put the NHM at a disadvantage. The Museum has a 'struggle to maintain its position because DCMS is not the right place to be'. The reason for this is that the 'DCMS does not give a damn about the science'. Instead the NHM has to 'dance to the DCMS tune', which is essentially, and understandably in its own terms, about the success of the Museum as a visitor attraction and its ability to fulfil government targets of increasing the number of children or people from C2DE backgrounds visiting museums, making its presence felt outside London, and so on.

The Museum is regarded as doing perfectly well in relation to these criteria but is thought, even so, not to benefit financially as a result. The financial settlement seemed to remain much the same no matter what the Museum achieved. The Department itself admitted that the Museum found the funding process 'opaque', although it itself preferred to regard it

as 'subtle'. The truth is that there is only minimal scope for altering, because of performance, grant-in-aid for current spending, though rather more discretion in relation to capital spending. And it was not generally thought the Museum had done badly in that respect.

What all this raised, therefore, was the question of whether the DCMS was the right place for the NHM to be. A minority view was that it did not much matter, since anomalies such as this (an institution partly devoted to scientific work pigeon-holed as if it were solely a museum) were inevitably not uncommon within government. It was even suggested it did not matter since science was in any case underfunded by government, so the Museum would go on being so wherever it was lodged. Instead, if it were to stay within the DCMS, the NHM needed 'to educate the DCMS' about the vital role it was playing in science.

But even those who took these views tended to agree that the DCMS was not ideal, if only because it was such a small department within government, with relatively little clout for getting its way.

This debate opened the question of where the Museum ought otherwise to live within government if it were to hope to command greater resources. But there was no consensus as to the answer. One suggestion, focusing on the NHM's scientific role, was the Department for the Environment, Food and Rural Affairs (DEFRA), which sponsors Kew. But within DEFRA, the Museum's function as a visitor attraction would become anomalous.

A stronger case was made for the Department for Education and Skills (DfES). Since the function of the

Museum as a visitor attraction was primarily educational, and since science has inherently a close relationship with education (the department used to be called the Department for Education and Science), the DfES was its natural home. As one interviewee put it: 'the Natural History Museum should primarily be about education'. Its rival, the Smithsonian, as another interviewee pointed out, has, as its chief purpose, 'the increase and diffusion of knowledge'. A further advantage of the DfES is that it has much greater influence within government and far more resources to command.

6 Scope beyond resources

The future health of large public bodies such as the NHM lies in the trust and affection that funders, museum users and others concerned with it hold the institution. In order to generate this trust, a sense of ownership, validity and pride, institutions must more than ever before publicise and promote themselves. Participating in the heady world of ever-shifting media and entering into the public debate requires new skills and resources. The demands on hitherto modest organisations such as the NHM are profound.

Everything, ultimately, is dependent on resources but, as was argued earlier, it is helpful to consider the Museum's scope for making a greater impact in a different way: whether it is grasping the potential open to it. This issue has much to do with profile, and can be summed in a remark one interviewee made. 'The Natural History Museum is probably the most important single institution in Britain. But



hardly anyone knows that.'

Even allowing for the hyperbole that may be excited by commitment, it is a striking remark. It is reflected in another. 'It should be the proudest institution in Britain.' And, more prosaically, in another. 'It does not have as high a profile as it might have.' In the light of the crowded science communications marketplace, it is perhaps not surprising an interviewee might have felt this. The media's approach to science – often dramatic and occasionally political – might also affect perceptions.

7 Potential as a brand

The proposition can be simply put: there is an opportunity that needs fulfilling in our national life, and the NHM is in a very strong position to fulfil it.

The opportunity concerns public attitudes to science. On the one hand, the argument goes, science has become distrusted and devalued in the public mind. Controversies over foot-and-mouth, MMR and GM food have ensured that. On the other hand, however, there is a great need out there for a scientific authority that can be trusted as academically reputable, independent and fearless.

The Museum has the potential to be such an authority. Those (inevitably relatively few in terms of the whole population) who have actually visited the Museum tend to regard it with respect and affection. Those (far fewer) who are at all aware of the immensely valuable work done by its scientists in relation to the eradication of world diseases, improving agriculture in the developing world and so on, regard it with even more respect. It therefore has enormous potential of good will to build on.

Were it to do so, were it aim for this

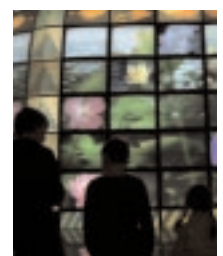
role as a much more high-profile authority on current (and often controversial) scientific issues the public has to wrestle with, then its impact within British society would be greatly enhanced. The point was put to us in this way. At the moment the Museum seems to be suffering the penalties of being a hybrid institution – part museum, part scientific institution. Its hybrid nature always threatens it with dismemberment. But it has the potential for achieving a greater integrity and thus enjoying greater impact by adding to its recognised functions, by becoming more multi-faceted.

A striking image was used to make the point. The Museum should aim to become regarded by the world as a diamond: something that is made of a single element, and therefore regarded as whole and integrated, but which looks different from different angles. Those angles would be those of museum to be visited, academic institution, research body that applies its knowledge to the pressing problems of the world, think tank, authority to be consulted on issues of the day, forum for debate and argument. The chemical element, as it were, of which this diamond would be made, would be authority.

Clearly such an ambitious project requires resources. But equally clearly, success in it will generate resources. Through both its enhanced status and more resources the NHM would then enjoy much greater impact.

List of Interviewees – in person

Viki Cooke: Opinion Leader Research
 Professor Peter Crane: Director, Royal Botanic Gardens, Kew
 Ian Gibson MP: Chairman, House of Commons Select Committee on Science and Technology
 Richard Hartman: DCMS
 Paul Hopper: London Tourist Board
 Alan Leighton: Prospect (trade union)
 Paul Manners: BBC
 Tim Radford: Science Editor, The Guardian
 Keith Scholey, BBC
 Jan Slingenberg: Food and Agriculture Organisation
 and a number of others, by telephone.



10. CONCLUSIONS

A report of this kind can only capture elements of an institution such as the Natural History Museum. The diversity of the NHM's collections, science and its appeal as a visitor attraction can be measured – though only up to a point. This report has examined the NHM's place in the world, its likely economic impact and the number of people it employs. It has also estimated the wider employment generated by the economic activity that is generated by visitors to the Museum.

The conclusions to be drawn at the end of a study of this kind are broadly three-fold:

- the NHM has been successful and can continue to prosper in an operating environment that has radically altered in recent decades;
- the competing demands on an institution of this kind are complex and may, on occasion, detract from the core purposes of traditional museums and galleries;
- the Museum offers exceptional value for public money, given the massive levels of access enjoyed to collections and to wider activities.

The NHM accommodated almost three million visitors in 2002–03, a number significantly boosted by the removal of admission charges. The policies of successive governments towards admission charges provide a good example of how the NHM and other institutions must cope with a changing operating environment. Few other public (or not-for-profit) bodies have had to cope with such a wide swing in policy. One government expected institutions to finance themselves by charging for entry (or by making do with limited grant-in-aid). The present government decided to replace entry charges with additional, inflation-linked, grant. The changed commercial expectations facing the NHM have been immense.

More generally, the NHM has seen its remit grow from being a national curator of specimens and natural science to being a major visitor attraction and public space. The Government has significantly added to demands by requiring museums and galleries to seek to achieve particular social and inclusion objectives. While such objectives are laudable, there is little doubt that they further add to the complexity of running a mass-access museum.

Dependence on government grant-in-aid tied only to inflation will not be sufficient



The NHM, its supporters and, most importantly, the government must work to ensure this success is maintained and enhanced in the years ahead

A wide-ranging analysis of the kind undertaken here makes it possible to place the NHM in a wider context. There can be no doubt that the Natural History Museum has been a great success in recent years. It has modernised its image and welcomed large numbers of new visitors while maintaining its traditional roles and responsibilities. This success story is based on a rapidly growing workload and changed official expectations. In the longer term, dependence on government grant-in-aid tied only to inflation (as measured by the retail prices index) will not be sufficient to compete adequately with private sector leisure and educational facilities that are able to charge for entry. The resources of the NHM will have to be able to increase at least in line with leisure expenditure in the wider market.

But, for the time being, the NHM flourishes, creating economic activity and jobs in London and elsewhere in the UK. More importantly, traditional scholarship and the maintenance of its unique collection have also continued at the highest standard. The NHM, its supporters and, most importantly, the government must work to ensure this success is maintained and enhanced in the years ahead.



APPENDIX: METHOD USED IN CALCULATING THE ECONOMIC IMPACT OF THE NHM

As far as UK visitors are concerned, there have been a number of studies, undertaken within London and outside, about the additional spend generated by visits to leisure facilities and festivals. A recent study undertaken of museums in South-West England suggested expenditure per museum visitor as a result of each museum trip (beyond any entrance payment) was £7.50 for larger museums (Culture South-West, 2000). A 2003 economic impact study of the Notting Hill Carnival suggested figures of between £29.81 and £58.47 per day, based on a survey of those attending the event (LDA, 2003). A study undertaken about the West End theatre in 1998 estimated – on the basis of a survey – that for every £1 spent at the box office, about £1.75 was spent on transport, hotels, restaurants and other ancillary items (Society of London Theatre, 1998).

Visits to a London museum are likely to generate higher spending on travel, eating out and other ancillary activities than would be the case in South-West England. On the other hand, the figures for the Carnival would appear very high in relation to a museum visit. Thus, a figure 50 per cent above the spending figure calculated for the South-West museums has been used for UK visitors' expenditure. This assumption produces a figure of £11.25 per visit, which is plausible given travel costs plus the cost of spending on food and drink or other related spending. It is less than half of the lowest daily spending figure calculated for the Notting Hill Carnival.

For UK visitors who come from outside London, it is likely the figure of £11.25 will be an under-estimate.

The cost of public transport, coach hire or private vehicle costs are unlikely to be less than £5 to £10 per person, even for visitors from South-East England. There is a far greater chance that meals or even hotel stays would be required by visitors from beyond the London area. It is almost certain that some UK visitors to the NHM will have spent as much as those from overseas. But it is impossible to calculate these figures without a survey of visitors. Thus, the £11.25 figure will inevitably be an under-estimate of the full economic impact per UK visitor.

For overseas visitors, the method adopted for this study is relatively straightforward. To attribute a monetary value to each visit to the NHM, the starting point used is the average daily expenditure per visitor

figure published by the Office of National Statistics in its volume Travel Trends. The most recent figures available, for 2001, suggest the average expenditure per day by a visitor to London was £77 (Travel Trends, Figure 4.16). This is based on an overall average spend within the UK (i.e., excluding fares to and from the country) per visit figure of just under £500. The overall and daily expenditure figures represent the value visitors place on their visit to London – the amount they are prepared to spend on their trip.

Starting with this figure of £77 per day, it is then possible to attribute part of it to different activities, including museum visits. On the assumption that an average visit to the NHM would take between two and three hours, plus perhaps an hour



Table 9

An estimate of the Museum's indirect economic impact on the London and UK economies.

UK Visitors:	1,418,300 x £11.25	=	£15.96m
Overseas Visitors:	1,475,000 x £25.67	=	£37.86m
	5 to 15% @ £51.34	add	£1.89m to £5.68m
			£39.75m to £43.54m
TOTAL:			£55.71m to £59.50m

to travel to and from the Museum, it would be reasonable to assume that perhaps four hours would, in total, be given over to such a visit. Time devoted to eating, drinking and so on might extend the time further.

Overall, it would appear that at least one third of a 'visitor day' could be attributed to an institution such as the NHM. Thus, the proportion of the daily visitor spend (£77) that could be attributed to an NHM visit would be £25.67. This is a cautious estimate.

In fact, among visitors to the NHM there will be a proportion who will have travelled to Britain wholly or significantly because of museums and galleries or, in a small minority of cases, solely because of the NHM. It is not known what these proportions might be, though research commissioned for tourism promotional agencies show museums and galleries as a major pull factor for London. For these visitors, it would be appropriate to attribute a rather larger amount than the £25.67 suggested above. In order to represent this factor, we have assumed that for between 5 and 15 per cent of visitors, their NHM-related spend is double the £25.67 figure – £51.34.

By applying the figures above to the NHM's overall visitor total, it is

possible to generate an estimate of the Museum's indirect economic impact on the London and UK economies. Using the 2002–03 visitor numbers, the calculations are as shown in Table 9 above.

Finally, economic impact studies of this kind seek to estimate the multiplier effect of the direct expenditure related to the institution concerned (in this case the NHM) on the wider economy. That is, what effect will the businesses, traders and others receiving income as a result of NHM direct or indirect expenditures have on the wider economy? This indirect and induced expenditure would, to be calculated precisely, require the use of an input-output model of the London economy. No reliable model of this kind exists, which means it is necessary to rely on earlier studies or on recommendations from official publications.

A report prepared for the British Arts Festival Association in 2002 suggested a multiplier of 1.99 be used. In 1995, the Treasury suggested a multiplier of 1.7 should be used for sectors with strong local supply linkages. The Wyndham Report produced for the Society of London Theatre in 1998 used a more cautious multiplier of 1.5. A recent study of higher

education in London, which used a national input-output model to estimate indirect and induced impacts, produced a multiplier effect of over 2. This study will again err on the side of caution and use multipliers of 1.5 to 1.7 to generate a range of plausible indirect and induced effects.

By applying a multiplier to the figures above, the full effect of this spending will fall in the range £83.56 million to £101.15 million. To this amount, of course, the effect of the NHM's direct spending (also subject to the multiplier) can be added, taking the full impact of the NHM (apart from its direct, largely grant-funded, spending) to a range between £161.56 and £189.55 million.

The NHM's direct expenditure is largely, but not wholly, funded by government grant. It might be argued that the grant-in-aid funded proportion of the Museum's income (£38.09 million) could be used for other purposes within the public sector, or to pay for tax cuts. However, there is little doubt that in its current use – to support the NHM – the grant appears to produce between £3.25 to £4.00 in wider economic benefit. This estimate is very cautious, as the earlier paragraphs have made clear.



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Photo: Brian Aldrich

'*the* museum: the bedrock for classic biology'

'There is no hyperbole that is too great for this collection'

'does a hell of a good job'

'huge affection for it'

'It has a strong, positive image'

'highly respected organization'

'It is one of our strongest institutions'

'high standard of quality work'

