



National Preservation Office

KNOWING THE NEED

A report on the emerging picture of preservation need in libraries and archives in the UK



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Contents

Foreword

Executive summary

1 Introduction

- 1.1 Statistics which enable, direct and justify preservation activities
How does it work? The survey method
- 1.2 The Preservation Assessment Survey: gathering data over five years
- 1.3 Building up a national picture
- 1.4 Coverage
- 1.5 Data sets
- 1.6 The baseline preservation profile

2 What have we found out?

The outcomes of the surveys

- 2.1 Preservation factors
- 2.2 Condition and usability
- 2.3 Access and use
 - Cataloguing
 - Level of use
 - Surrogate copies
- 2.4 Physical protection
- 2.5 Damaged materials
 - Bindings
- 2.6 Significance
- 2.7 Analysis of key themes
 - Stability and preservation needs
 - Stability and use
 - Stability and significance
 - Unstable material by date
 - Unstable material with surface dirt
 - Surrogacy
 - Acidic paper
 - Modelling change

3 Emerging stratified results

- 3.1 Key differences between sectors
 - Condition and usability
 - Preservation factors
- 3.2 Regional analysis

4 Applying the results

- 4.1 A practical tool for institutions
- 4.2 Future use

5 Conclusions and the way forward

- 5.1 Summary of preservation need
- 5.2 The way forward

Appendix

Collections included in the aggregated dataset

Collections included in the stratified dataset

Foreword

Knowing the Need is the first large-scale survey of the state of preservation in the United Kingdom's libraries and archives. It uses a method originating in research sponsored and undertaken by library and archive professionals, developed and managed by the National Preservation Office, and undertaken by librarians, archivists and conservators across the country. It is very significant that the impetus for the process of assessing collection need has come from those who are in day-to-day contact with the books and documents which form a major component of our culture and our heritage. Ownership of the process and its outcomes is firmly embedded in the management of collections, and it is thanks to librarians, archivists and conservators that we have been able to assess the need of collections on a national scale.

Present, future and continuing access to the documentary heritage and the information it contains depends upon appropriate, evidence-based stewardship and care of collections. The publication of this report will allow us to direct action to where it is most needed and where it will have most impact. In particular, the National Preservation Office Board commends the report to strategic bodies, grant-making organisations, government and others involved in planning and strategy. Individual collection owners and managers will, we believe, also find it of considerable use.

Ronald Milne

Acting Director Oxford University Library Services and Bodley's Librarian
Chair, National Preservation Office Board
January 2006

Executive summary

Knowing the need is a report on the preservation need of libraries and archives in the United Kingdom. It is the product of preservation surveys carried out using a standard methodology in a large number of libraries and archives throughout the UK over the past five years.

A summary of information from the survey programme was published and circulated at the NPO's annual conference on 31 October 2005. The views expressed and information provided by speakers and attendees have helped to scope and structure this report, a fuller document which analyses and describes in much more detail the findings of the surveys.

This is the first time that information about the preservation of collections in this country has been collected on this scale. With guidance and training from NPO staff, librarians, archivists and conservators have contributed to a project to define the steps that now need to be taken to preserve collections for current and future use.

The survey has examined areas of risk which can affect the survival and future usability of material. It demonstrates that significant amounts of material are at risk now, and that more will be at risk in the future.

The principal themes which emerge from the survey picture are:

- A general weakness in the provision of environmental monitoring and control
- The need to minimise the amount of unstable and unusable material
- The high proportion of vulnerable post-1850 paper which is kept in poor conditions and thus at risk of accelerated deterioration
- The need to ensure that surrogacy is used effectively

It is important that these findings are used as the basis for positive action. They are not a negative, depressing story but the positive indication of how best to direct effort and resources. What they offer is the opportunity for action which will make a difference, based on known needs, genuine evidence-based policy and practice.

Some of the steps which need to be taken to contain and reduce risks can be addressed locally.

Other initiatives such as mass deacidification and shared storage can only be tackled collaboratively, on a wider regional and national scale.

Strategic action, agreed by institutions and funders, is needed to ensure that resources are available and are used to benefit collections at need.

1 Introduction

1.1 STATISTICS WHICH ENABLE, DIRECT AND JUSTIFY PRESERVATION ACTIVITIES

The collections in UK libraries and archives are a very significant part of the nation's cultural heritage, and they should be maintained and housed so as to maximise their life and accessibility for the benefit of all users. Making sure that this happens in a consistent and effective manner is the task of professionals and managers. But effective action depends on knowing what is needed. Knowledge of the state of preservation of collections is critical for the planning and practice of individual and cooperative measures to ensure that they meet the requirements of present and future users.

Over the past five years, the National Preservation Office has enabled, managed and facilitated the identification of the state of preservation of a large number of individual libraries and archives in the UK. The selected data from these surveys has now been aggregated to give a picture of how well collections are cared for, and where strengths and weaknesses lie.

This report uses the data received since 2001 from UK libraries and archives. It aims to:

- Explain how the database has been compiled
- Demonstrate some of its key findings
- Identify emerging themes
- Provide some pointers to the way forward

Statistics are a powerful tool in the right hands and if used in the right way. Even if merely confirming perceptions—as they frequently do—they have impact, because they derive from verifiable data, and provide a firm basis on which to take action. Some very basic common perceptions are confirmed by the NPO survey data—disaster plans are not always in place, and many books have damaged bindings. However, the database structure we have devised allows more sophisticated analysis. We can show, for example, that significant material is not in environmentally controlled storage or how much unstable material is nevertheless heavily used.

The survey answers many questions—but it gives rise to many more, which will need to be addressed before we can be sure we are doing our best for our collections. Some are to an extent theoretical—can we expect all collections to be stable at all times?—while others raise issues of ways and means—how do we ensure that funding is addressed to the areas of greatest need? The National Preservation Office will work with other agencies and institutions to identify strategic routes for resolving these issues.

1.2 THE PRESERVATION ASSESSMENT SURVEY: GATHERING DATA OVER FIVE YEARS

The NPO's Preservation Assessment Survey (PAS), a method of obtaining a reliable snapshot picture of the state of preservation of a library collection or archive holdings, has been used in UK libraries and archives since 2001. Collection managers are using the results to direct their own efforts, to support annual internal bidding regimes, and to bid for external funding.

HOW DOES IT WORK? THE SURVEY METHOD

The survey model works as follows:

- Users identify a sample of 400 items selected at random or systematically from a library or archive, or one or more of its collections. The sample is always 400 (or as close as possible), whatever the size of the collection.
- They complete a short questionnaire for each item in the sample. Part one is a 'tick box' form, asking questions relating to the preservation of the item—access, use, accommodation, condition and usability, value and importance. Part two requires an assessment of the condition of the item and the types of damage it may show.
- Information from the forms is keyboarded into an Access™ database.
- Data is returned to the NPO for the generation of reports which analyse the specific condition and management issues identified through the data, and make recommendations for improvement.

Statistical reliability for individual surveys

The sample size is designed to ensure a 95% confidence in the degree of precision—the level of accuracy—of the results, and a degree of precision of $\pm 5\%$. This means that we can be 95% confident that the survey results are precise to plus or minus 5%. The sample size of 400 can be shown to provide results meeting these parameters, irrespective of the size of the population.

1.3 BUILDING UP A NATIONAL PICTURE

The NPO collects and collates the data provided by all the individual institutions' surveys. The resulting database can be used in the same way as the individual surveys. It can be analysed to define collective need on national, regional and sectoral bases and the specific need of defined types of collections and materials.

It provides baseline figures against which individual collections can be measured. For individual institutions, this comparison can be used to justify and support current practice, to initiate change and improvement, or to measure progress against defined goals.

1.4 COVERAGE

Data has been collected from academic and public libraries, record offices and special repositories in the UK¹. Also included are special libraries which are neither local authority-run nor part of an academic institution. Such libraries often have very rich collections yet find it difficult to find adequate funding for preservation. They make an important contribution to the overall picture of national preservation need.

We have collected data from all types of institution from all the English regions, Scotland, Wales and Northern Ireland. However, we did not include public library lending stock and undergraduate student collections since they are generally not intended for long-term retention. Higher education institution special collections and archives are included, as are public library local history and special collections.

The overall number of data elements in the aggregated samples is large. Reliability at the highest level is based on the number of data elements rather than the specific composition of the sample, and we are confident that the amount of data collected is more than sufficient to provide a reliable national picture.

¹ We have collected data from some UK legal deposit libraries, but it is not included in this report. We expect to report separately on legal deposit collections later in 2006.

1.5 DATA SETS

Two statistical profiles have been created—aggregated and stratified.

AGGREGATED DATA—INCLUSIVE

This profile includes most of the data we have collected from surveys from UK libraries and archives. It creates the global picture on an all-inclusive basis, incorporating an extremely large amount of data.

This profile incorporates survey data from:

- 97 collections from 79 institutions
- 43,682 separate items (books, documents, photographs, etc.), representing an estimated 28 million items²

Survey data is still coming in and will continue to be incorporated in the database. Most of the findings described in this report are taken from the aggregate dataset.

STRATIFIED DATA—SELECTIVE

The second profile is more selective. The global database may include several surveys from the same type of institution, or from the same sector and region, but for the stratified and weighted profile we have selected those which are most representative of their kind. There is less data in this profile, but because it is appropriately spread—or stratified—across the institution types and sectors, it allows us to create a reliable breakdown of these sub-sets.

Results are also weighted to ensure that each set of data contributes to the profile in proportion to its size. For example, the impact on the national or regional picture of a small collection would not be as great as that of a large one. The sizes of collections in this dataset are known.

This profile includes surveys from public libraries, academic (HE) libraries, special libraries, local authority archives, copyright libraries and special repositories from the nine English regions, Wales and Scotland. In order to give reliable data for each region we aim to have surveys from each type of institution in each region. This data set is not yet complete for all regions. We already have sufficient data from London and from the Southeast region, and will be working with institutions and agencies in the other regions and home countries to continue to build this picture. It does contain sufficient data by sector (libraries, archives and their subdivisions) to create profiles for each. The profile varies from the aggregated profile, but we have found that it is within a tolerance of $\pm 5\%$.

This profile incorporates survey data from:

- 41 collections
- 16,500 separate items, representing collections containing nearly 12 million items

1.6 THE BASELINE PRESERVATION PROFILE

For individual surveys, the answers to the preservation questions are analysed to provide a general overview of each institution's preservation needs and priorities. Each preservation question is scored according to the impact of that preservation factor. The scores for each item are spread across five equal bands with a maximum score of 100 points. A low score means the item has low preservation priority; a high score means it has high priority. The preservation priority bands are as follows:

- PPB1 – very low priority
- PPB2 – low priority
- PPB3 – medium priority
- PPB4 – high priority
- PPB5 – very high priority

² This is the total estimated holdings of the 'parent' collections. Not all collections in the aggregated dataset have been able to provide accurate figures on the number of items they hold. The estimate is based on pro-rata extrapolation from collections where the number of items held is known.

The profile is defined by all the key factors included in the survey: use, accommodation, condition, and value and importance. The need for collection care measures and for conservation or other treatment is thus bound up with an assessment of significance to create an evaluation of priority.

The same method can be applied to the aggregated dataset to create a national baseline profile. This is illustrated in **Figure 1**.

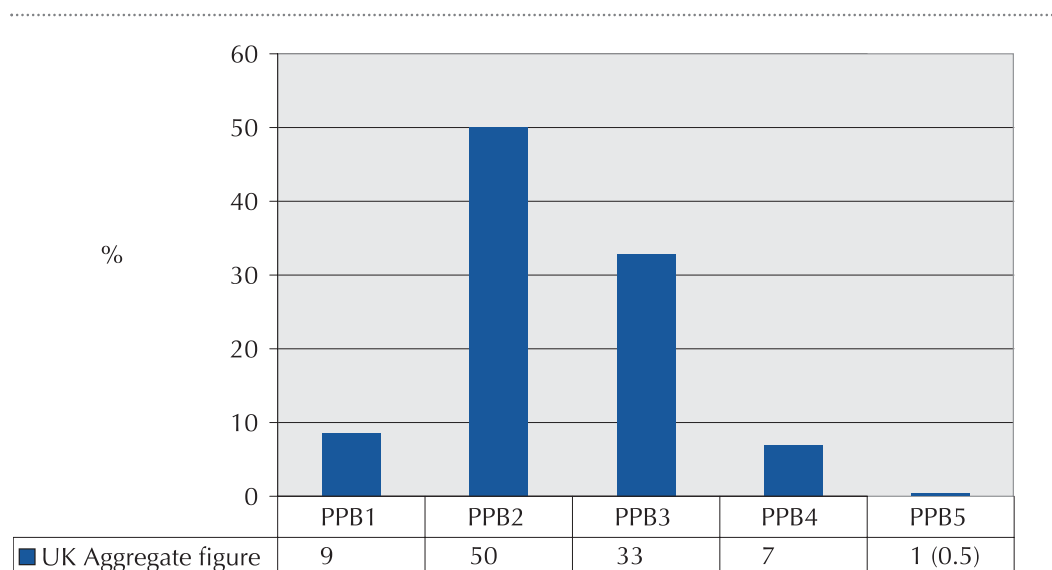


Figure 1

The profile peaks in PPB2 (low priority). This is also the most common profile that we see in individual surveys. It shows that most material in the collections surveyed have good collection care or are low priority because of good condition, low significance or low use.

However, the material in Bands 3 to 5 demonstrates the extent to which preservation is of medium to very high priority—and this is the case for 41%³ of all items surveyed. When extrapolated to the estimated collection size represented by our sample, this means that 8.3 million items fall into these three bands. In the top priority bands (4 and 5), 8% of our sample represents over 1.6 million items. Extending these proportions to the entire holdings of UK libraries and archives would, of course, give an extremely high figure.

It can be useful to hypothesise such figures on occasion, but the main function of the UK profile is to form the basis of comparisons for sectors, regions and individual institutions. Using the baseline we can usually identify the factors which cause individual collections or collection types to vary, and which represent strengths or weaknesses.

³ Throughout the report, all percentages are rounded to the nearest whole number. The percentage of material in PPB5 in Figure 1 is rounded up from 0.5%.

2 The outcomes of the surveys

First of all, it is clear that a great deal of the material surveyed is well cared for, and its accessibility for use in the long term is assured. This is a good finding. We should recognise that in both libraries and archives good practice in preservation is widespread.

But the surveys also show that significant amounts of material are unstable—they are in a condition that is actively deteriorating—and that there is a large amount of material which is at risk because of deficiencies in basic preservation.

All of the analyses included in this section are derived from the aggregated statistics—the global picture based on all the data collected from surveys of UK libraries and archives.

This section describes in more detail some of the ways in which the data has been analysed. Readers may find the following explanation of terms useful.

What do the terms mean?

Significance

A combination of rarity, national importance and special value to the holding organisation.

Stability

Stable material may have some damage but can be used without immediate risk of further damage. Unstable material will be further damaged if used.

Surrogacy

The creation and use of substitute copies to protect originals from damage through use by readers or from copying. The commonest form of surrogate is preservation microfilm, but digitisation may be a surrogate, provided that the digital copy is maintained within a digital preservation programme

Unusable

Unsuitable for use because of severe damage, mould or infestation, and will suffer further damage if used.

2.1 PRESERVATION FACTORS

The survey asks a number of questions to find out whether certain basic preservation measures are in place. They focus on quality of handling, storage, protection, environmental monitoring and control, security, fire detection, and disaster planning. All these measures serve to control and limit the risk to which collection material is exposed. This section of the

survey can in many respects be seen as a risk assessment. If these risks are minimised, collections can be expected to remain usable and accessible for longer. With appropriate preservation measures it is possible to retard considerably the deterioration which naturally occurs in library and archive materials. They are critical aspects of responsible and sustainable collection management.

HANDLING		
<ul style="list-style-type: none"> ■ Staff and users are routinely given guidance and information about the safe handling of materials. 	Adequate	65%
<ul style="list-style-type: none"> ■ Aids such as book supports, map weights, etc. are available and used where appropriate. 	Inadequate	35%
STORAGE		
<ul style="list-style-type: none"> ■ Preventive measures are taken to protect the item from hazards. 	Adequate	50%
<ul style="list-style-type: none"> ■ Good housekeeping procedures, such as vacuuming and shelf-cleaning, are routinely carried out. 	Inadequate	50%
<ul style="list-style-type: none"> ■ The item is stored at least 150mm off the floor. 		
<ul style="list-style-type: none"> ■ Primary protection is suitable for the item. 		
<ul style="list-style-type: none"> ■ Oversize material is on suitable shelving. 		
ENVIRONMENT		
<ul style="list-style-type: none"> ■ Relative humidity and temperature are routinely monitored in the area in which the item is normally kept. 	Adequate	34%
<ul style="list-style-type: none"> ■ Visible and ultra-violet light is controlled in the area in which the item is normally kept. 	Inadequate	66%
<ul style="list-style-type: none"> ■ Temperature and relative humidity levels in the area in which the item is normally kept usually fall within the ranges recommended in BS 5454:2000. 		
SECURITY		
<ul style="list-style-type: none"> ■ An assessment of security risks to the collection of which the item is a part has been made and steps have been taken to redress any inadequacies. 	Adequate	73%
	Inadequate	27%
FIRE		
<ul style="list-style-type: none"> ■ The item is protected by an automatic fire detection system. 	Adequate	86%
	Inadequate	14%
WRITTEN DISASTER CONTROL PLAN		
<ul style="list-style-type: none"> ■ The item is covered by an up-to-date, written disaster control plan, and staff are trained in its implementation. 	Adequate	54%
	Inadequate	46%

Table 1

Figure 2 illustrates as a graph the extent of deficiencies in basic preservation practice.

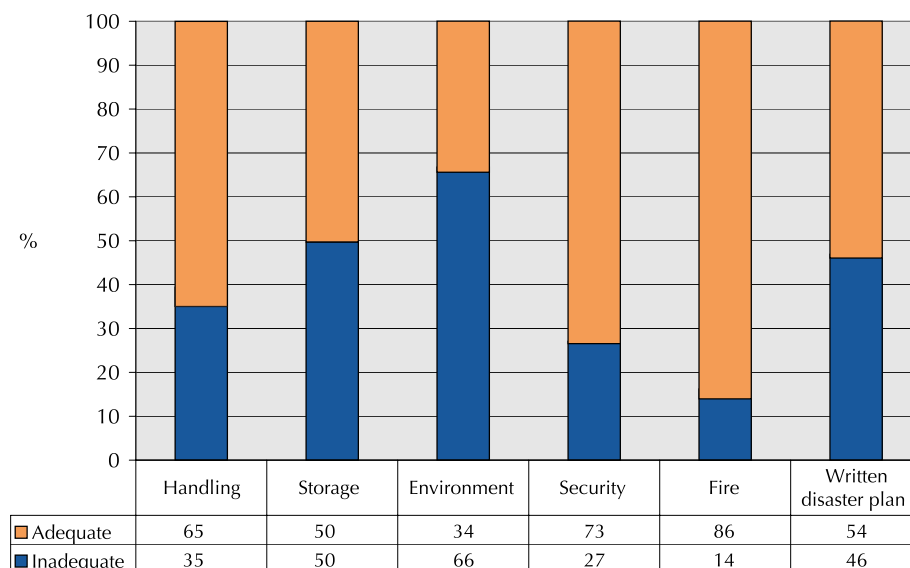


Figure 2

The greatest area of deficiency relates to environmental monitoring and conditions. A high percentage of material (66%) is stored in environmental conditions which do not meet the stated standard. To meet the standard it is necessary both to monitor the environment and to control it to within the stated parameters. Full environmental control may be difficult and complex to achieve, especially in an older building, but environmental monitoring can be relatively easy and inexpensive. We found that many institutions had no monitoring in place, and therefore no knowledge of what control measures were needed.

This is a cause for concern since it is recognised that environmental conditions have a critical impact on the longevity of paper and parchment.

The quality of storage is also of concern. A number of parameters are included in this question (see the Table 1). Some of these measures require capital investment. While it is true that there has been much investment in, for example, record office buildings in the last twenty years, there is clearly still much to be done.

The fact that only 59% of material is covered by a written disaster control plan is a great improvement on past estimates, but is still disappointing given the much greater awareness in recent years of the need to analyse and minimise risk to assets.

Fire detection and security, on the other hand, are in place in the great majority of collections.

Recent innovative developments in storage, using cool temperatures, robotic retrieval systems and low-oxygen environments, lead the way in providing cost-effective, long-term storage for library and archive materials. Our findings show that there is a need for improved storage and environmental conditions, and it is suggested that there is considerable potential for collaborative work using these new models.⁴

⁴ For example, the Norwegian National Library, the Harvard Depository and planned new storage facilities at the British Library and Oxford University Library Services

2.2 CONDITION AND USABILITY

The Preservation Assessment survey questionnaire requires each item to be rated in terms of its suitability for use, in a four-part scale from good through fair and poor to unusable. **Figure 3** shows the aggregated figure for the UK across the four categories.

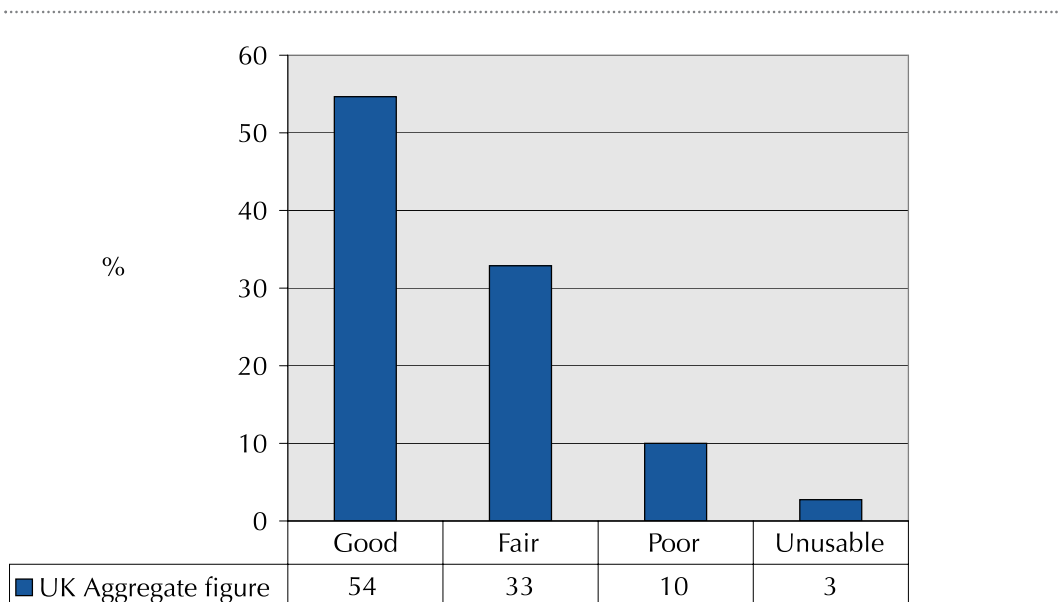


Figure 3

The definitions used for these categories are given in the information box. Material in the ‘good’ or ‘fair’ categories can together be classed as ‘stable’, while those in the ‘poor’ and ‘unusable’ categories together constitute ‘unstable’ material:

- 87% of material is stable
- 13% of material is unstable

What do the usability ratings mean?		
Good	Robust and stable – usable for any purpose.	STABLE
Fair	Disfigured or damaged, but stable – can still be used with extra care and attention.	
Poor	Shows signs of deterioration – use will cause further damage.	UNSTABLE
Unusable	Completely unsuitable for production to users – so fragile and damaged that likely to suffer further if handled, or has mould or pest infestation.	

We use the notion of stability extensively in this report. The distinction between stable and unstable is a critical one, separating material which is actively deteriorating from that which is not. Clearly, action needs to be taken if unstable material is to survive. Preventive action may arrest the move of stable material to an unstable condition, but for material which is already unstable, interventive treatment is usually required. Issues of access and use arise. Unstable material will suffer additional damage if handled. In order to make it accessible for use, it may

have interventive conservation, or the information content may be preserved by creating a surrogate—or for significant material we may do both.

We must ask how much unstable material is acceptable in a collection. It may be unavoidable and acceptable that a proportion of a collection which acquires non-current material is unstable on accession and likely to remain so for a variable period of time. Material should not remain in this state forever. It should be unacceptable that material becomes unstable while in the custody of a library or archive.

A level of equilibrium could be attained where the amount of unstable material is not increased either by deterioration in storage or by the accession of unstable material. The survey results show that 13% of items surveyed are unstable. It may be that as an average this is acceptable or at least realistic. However, since this figure represents a very large amount of material, continuing improvement could be achieved by setting a target for gradual reduction of the proportion of unstable material. For collections which show above-average instability, it is clear that substantial reduction should be aimed for as a matter of urgency.

Identifying the types of material which are unstable may help to decide what can be done. A comparison of the proportion of each artefact type in the unstable population, with the proportion in the total survey sample, suggests that newspapers are twice as likely to be unstable as monographs. Parchment and vellum are about one-third more likely to be unstable.

2.3 ACCESS AND USE

CATALOGUING

The survey includes two questions about cataloguing which are designed to show how easy it is for users to discover the existence and location of material. They show, firstly, whether the item surveyed is catalogued, and secondly, whether this information is available to remote users, for example in an online catalogue.

- 74% of items are catalogued
- 26% of catalogued items are accessible remotely

This question is significant in indicating the extent of cataloguing backlogs—of interest in itself—but there is also a preservation dimension. We have found in individual surveys that the condition of uncatalogued material is worse than that of catalogued material. This may be self-evident, in that the material may not have been sorted and evaluated, but it remains a concern that preservation problems may accumulate and intensify if material remains uncatalogued for long. Our findings suggest that almost 26% of material is uncatalogued.

If information about holdings can be found in a catalogue on the internet, they may be more heavily used. The results of individual surveys can help to direct preservation effort towards material which is catalogued on the internet and therefore in a potentially high use category.

The stratified dataset can be used to show that the proportion of uncatalogued material is higher in archives than in libraries (**Table 2**) and that comparatively little archive material can be identified from internet resources.

	Stratified Library figures	Stratified Archive figures
Catalogued	82%	66%
Remotely available	44%	28%

Table 2

LEVEL OF USE

The level of use of each item is assessed by the institution—so that low, medium or high use are defined by the context of the collection, not by an absolute number of uses per annum (**Figure 4**).

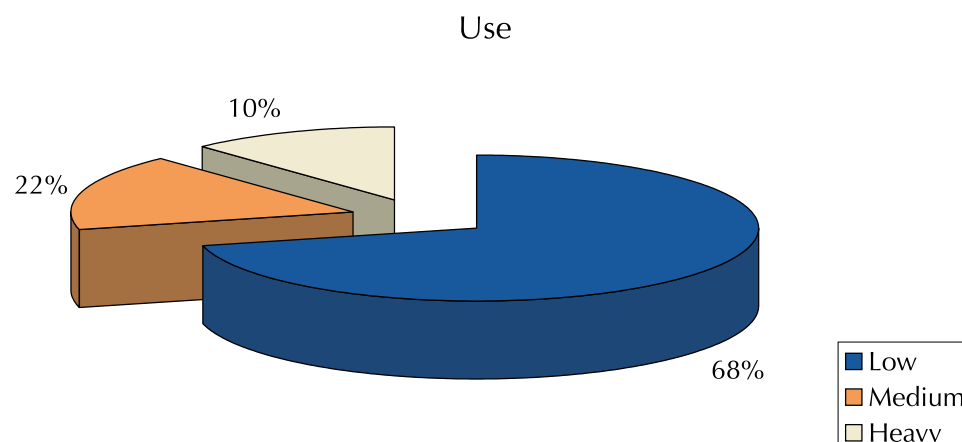


Figure 4

The level of use is a significant factor for preservation, since use exposes material to handling by staff and users and possibly to different environmental conditions. Information on the level of use can be used in combination with other factors to identify high-risk categories: for example, material with slight physical damage which has high use.

	Slight physical damage to binding	Slight physical damage to textblock
High use	18%	24%

Table 3

Table 3 shows the percentage of material in high use which has slight damage to binding or to textblock. We have found that 4% of the total aggregate sample has slight damage and is heavily used. This material is at high risk of further damage through use.

SURROGATE COPIES

The group of questions relating to access and use also asks whether there is a surrogate copy of the item. Surrogacy—also known as reformatting—is the creation and use of substitute copies to protect originals from damage through use by readers or by copying. The great majority of reformatting has been by microfilming, and this remains an economical and reliable long-term form of surrogate. Digitisation has significant access benefits but at greater cost in both creation and maintenance of the digital object.

If a surrogate is used instead of the original, the original will be subject to less handling and may therefore be categorised as low use. A preservation surrogate is available for 8% of items surveyed.

However, the pattern of use suggested above for material which has a surrogate does not seem to be borne out in practice. **Figure 5** shows that 12% of items which have a surrogate are nevertheless in heavy use. This suggests that the surrogate may not be being used for its intended purpose, due perhaps to a number of factors such as poor catalogue links between original and surrogate, or poor quality of the surrogate.

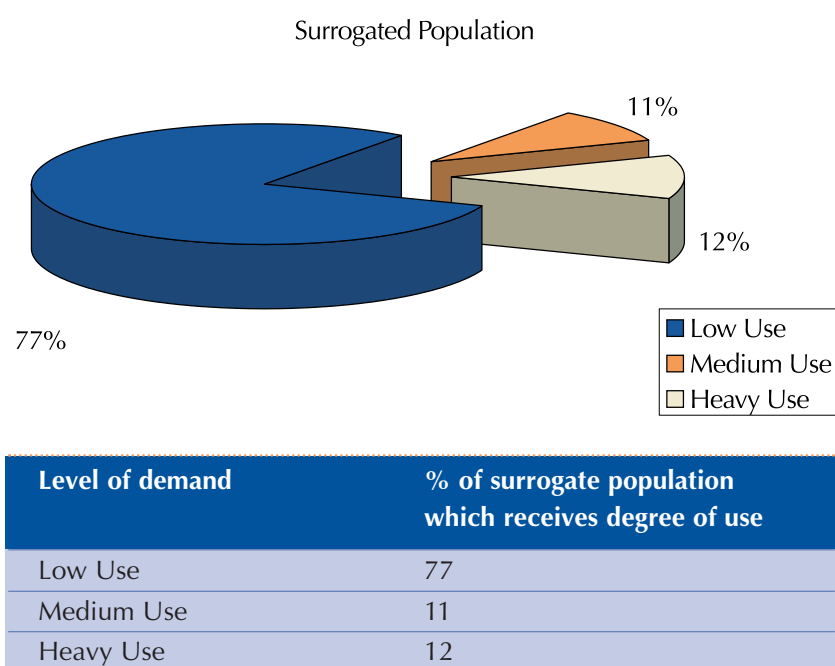


Figure 5

The surrogated material which receives heavy use represents 1% of the total aggregate population.

2.4 PHYSICAL PROTECTION

Boxes or other forms of enclosures are a good form of protection for loose material and vulnerable bound material. The survey shows how much material is already protected, whether that protection is adequate, and how much needs protection for the first time. The sum of inadequate packaging (which should be replaced) and first-time packaging gives the total amount of packaging needed. Packaging is inadequate if it is not acid-free or if it is unsuitable for the material it contains, whether by size, strength or other feature.

- 46% of material in the UK aggregate has secondary protection
- 44% of this is inadequate (20% of the total)
- 19% requires protection but currently has none
- This means that 39% of material in the UK aggregate requires packaging.

Boxes and enclosures are common—and good—practice in archives. Using the stratified dataset we can show that in record offices:

- 69% of the stratified record office material has secondary protection
- 31% of this is inadequate (34% of the total)
- 15% requires protection but currently has none
- This means that 49% of material in record offices requires packaging

⁵ There are 11 record offices in the stratified profile, representing approximately 5.3 million items

If extrapolated to the parent collections,⁵ this equates to approximately 1.9 million items requiring replacement packaging and 0.9 million items requiring protection for the first time, a total of 2.8 million items.

Clearly, despite the often excellent efforts of archivists and archive conservators there is a huge shortfall here. This represents a very significant amount of work and requires considerable, but quantifiable, funding. In this area there is potential for resource sharing, for example in the use of boxmaking machines, and for joint purchase schemes.

2.5 DAMAGED MATERIALS

The second part of the survey questionnaire records what type of artefact is being assessed, and the nature and degree of damage observed.

What does 'damage' mean?

In the condition assessment of the survey a distinction is made between slight and significant damage:

- Slight—there is evidence of damage.
- Significant—the damage compromises the functionality of the object and normal use causes further damage to the object.

Types of damage depend on the nature of the item, but may include:

- Physical damage (tears, scuffs, broken sewing)
- Damaging repairs (use of adhesive tape, tight rebinding)
- Chemical damage (red rot, acid migration, foxing, adhesive residue, ink transfer or degradation)
- Brittle paper (this can apply to the binding or the text)
- Biological damage (mould, pests)

Table 4 shows that printed monographs represent the majority of the material surveyed, followed by manuscript documents and other smaller categories.

Artefact Category	Percentage of total
Cartographic	5
Manuscript	35
Newspaper	3
Parchment or vellum	2
Photographic material	2
Printed monograph	38
Serial	9
Other/unknown	6

Table 4

Table 5 shows the percentage of damaged items in the major artefact categories. The highest proportion of damage is found in newspapers and documents on parchment or vellum.

Artefact Category	Percentage damaged
Cartographic	57
Manuscript	70
Newspaper	80
Parchment or vellum	79
Photographic material	63
Printed monograph	69
Serial	60
Other/unknown	67

Table 5

Our figures show that overall 70% of items have some form of damage. Newspapers and material on parchment or vellum show a high proportion of damage.

However, most of the damage recorded is slight—it does not compromise the function of the object. Of all the instances of damage, 83% are slight and 17% significant. Of all the items surveyed, 16% have one or more instances of significant damage.

Table 6 shows the percentage of all material which has various types of damage, distinguishing between slight damage and between damage to the binding or to the body of the item. A distinction is made between damage to the binding and damage to the body of the item.

	Physical damage	Damaging repairs	Chemical damage	Biological damage	Brittle paper
Binding–slight	24	3	13	4	7
Binding–significant	9	1	2	1	1
Body–slight	27	8	22	8	18
Body–significant	6	1	3	2	3

Table 6

Significant damage is of greater concern, since it means that the artefact no longer functions as it should without the risk of further damage.

BINDINGS

The materials used for bindings, and the nature of the binding structure, mean both that the forms of damage will differ from those found in the body, and that different skills are required for their conservation. Our figures show that 66% of the UK aggregate sample is bound and that 46% of the aggregate is both bound and has damage to the binding.

Table 7 shows the percentage of each type of damage to bindings (slight or significant).

	Physical damage	Damaging repairs	Chemical damage	Biological damage	Brittle paper
Binding	52%	5%	23%	8%	12%

Table 7

Table 8 shows the percentage of significant binding damage in each category.

	Physical damage	Damaging repairs	Chemical damage	Biological damage	Brittle paper
Significant damage to binding	14%	5%	3%	1%	2%

Table 8

The high percentage of damage to bindings is of concern, especially for books, but also for bound archive material, since it is the first form of protection for the text from external damage. If bindings are broken, or if they show chemical degradation which will lead to break-up of the structure, the content of the volume is at very considerable risk of physical damage and loss of text. Interventive conservation treatment is normally required if bindings are significantly damaged. It has been reported that the number of book conservators

currently being trained is not sufficient for present or future need⁶. These figures indicate a need for a substantial increase in conservation capacity if the identified levels of damage and instability are to be addressed.

⁶ *British Library Study: the need for book conservation in the UK and internationally*, 2004, www.bl.uk/about/collectioncare/pdf/webconservation.pdf

2.6 SIGNIFICANCE

The survey includes an assessment of significance so that action can be prioritised not only by physical need but also by intellectual, evidential or bibliographical importance. The value and significance of the item surveyed is measured in three parts—whether it is unique or very rare, of national importance, and of special importance to the holding institution. If material falls into three of these categories it is of notable significance (**Table 9**). A high proportion of this material is manuscript, held in archives.

Significance rating	Percentage
Unique or very rare	50
National importance	61
Of special importance to institution	75
Of notable significance (all three)	34

Table 9

2.7 ANALYSIS OF KEY THEMES

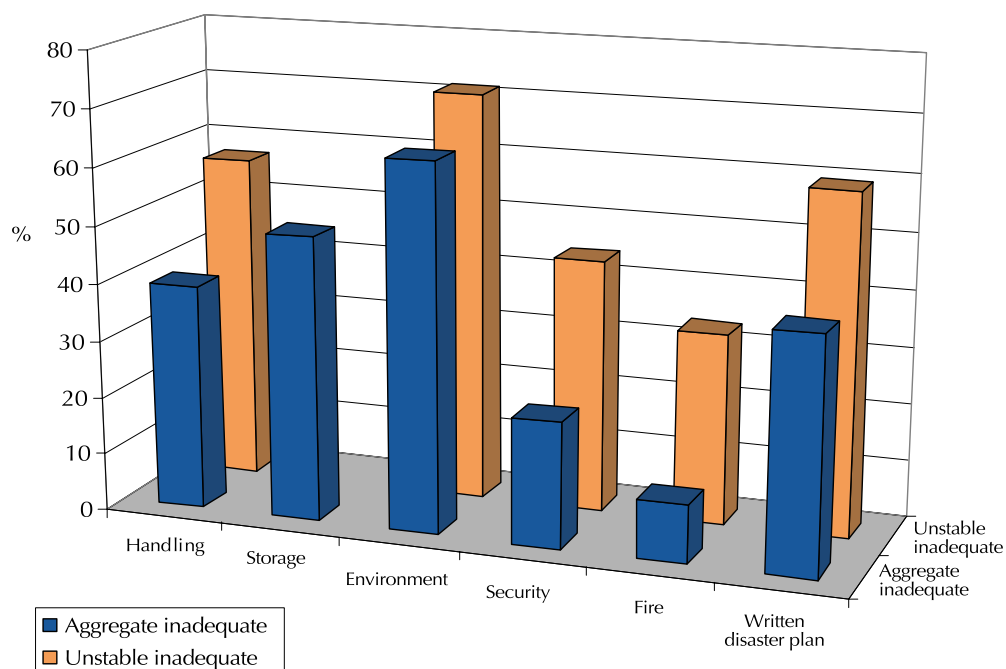
We can look at the data to see what emerges when we combine two or three elements. Each factor in the survey can be balanced against another: for example, significance and use, date and stability, existence of surrogate and level of use. For the purposes of this report we have selected a small number of examples of this type of analysis, but others are possible and we will continue to work on these.

STABILITY AND PRESERVATION NEEDS

The following analyses focus on the theme of stability. The overall figure for unstable material (in poor or unusable condition) can be combined with the information about deficiencies in basic preservation (handling, storage, environment, security, fire, written disaster plan) to show the extent to which items that are already unstable are also kept in a poor environment likely to cause further deterioration.

- 51% of unstable material is used in a collection where handling procedures are inadequate
- 70% of unstable material is held in inadequate storage conditions
- 76% of unstable material is kept in an inadequate environment
- 48% of unstable material has inadequate security measures
- 35% of unstable material has inadequate fire detection and suppression
- 63% of unstable material is not covered by a written disaster plan

When compared with the figure for all material with inadequate preservation, it is clear that the picture for unstable material is worse in all areas (**Figure 6**). These items—unstable and in a poor environment—are clearly amongst those most ‘at risk’. It is possible that in many cases the poor preservation environment has been the cause of the current poor physical condition, although it is also true that some reaches institutions in a poor state. Whatever the cause, if the material is to survive at all, improvements must be made.



	% of all items surveyed in inadequate conditions	% of unstable material in inadequate conditions
Handling	35	51
Storage	50	70
Environment	66	76
Security	27	48
Fire	14	35
Written disaster plan	46	63

Figure 6

STABILITY AND USE

Some unstable material is nevertheless heavily used. The use pattern of unstable material is generally similar to that of stable material (Table 10).

	Low use	Medium use	Heavy use
UK aggregate	68	22	10
UK aggregate unstable material	67	24	9

Table 10

The figures indicate that unstable material does not receive any special treatment in terms of use. There is also no evidence that unstable material has been surrogated to any great extent, (7% has a surrogate compared to UK aggregate total of 8%).

STABILITY AND SIGNIFICANCE

Combining these two factors can show how much unstable material is of special significance.

Figure 7 shows higher levels of unstable material in all three areas of importance as compared to the aggregate figure:

- 50% of all material is classed as unique or only copy in the UK/Ireland
- 61% of all material is classed as part of national documentary heritage
- 75% of all material is classed as of special value and importance to the organisation

- 55% of unstable material is classed as unique or only copy in the UK/Ireland
- 65% of unstable material is classed as part of national documentary heritage
- 85% of unstable material is classed as of special value and importance to the organisation

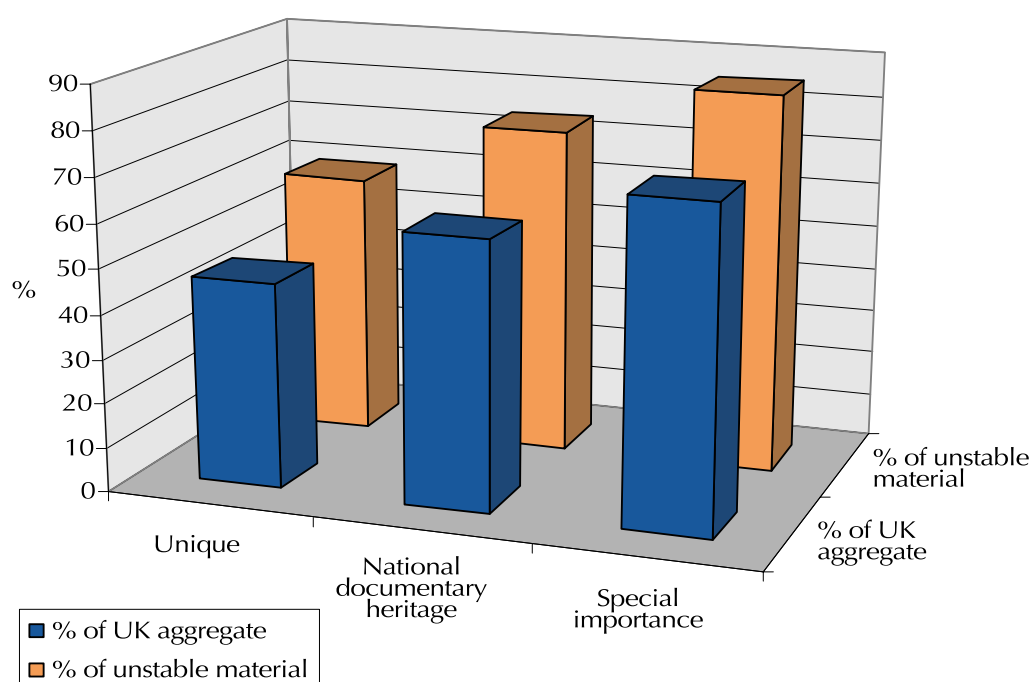


Figure 7

UNSTABLE MATERIAL BY DATE

We can show the date ranges which have the greatest amount of unstable material (**Table 11**). These figures show that seventeenth, eighteenth and nineteenth century material has a relatively high proportion of instability, and twentieth century least. The figures for pre-1600 material, although showing high percentages, have less significance because the survey was based on quite a small number of items.⁷

⁷ No date was supplied for 18% of all material

Period	% of unstable material	% of all material surveyed	% unstable by period
Pre 1500	1	1	21
1500-1599	2	1	26
1600-1699	6	5	17
1700-1799	11	6	22
1800-1899	28	20	19
1900-1999	28	49	8
Not known	16	18	17

Table 11

UNSTABLE MATERIAL WITH SURFACE DIRT

The presence of surface dirt and dust (dirt which can easily be removed by brushing, as opposed to ingrained dirt) is a general indicator of poor collection and building maintenance. A much higher proportion of unstable material also has surface dirt:

- 50% of all material has surface dirt
- 46% of stable material has surface dirt
- 66% of unstable material has surface dirt

To summarise, material which has been classed as unstable, i.e. poor or unusable, is more likely than stable material to be

- of value and significance
- dirty
- created between 1600 and 1900
- at risk because of deficiencies in preservation practice

SURROGACY AND RETENTION

Planning for preservation microfilming has often used a matrix of use against value, giving priority to low-use material which has informational significance but does not justify the cost of conservation work, and conversely, high-use, high-value material which will also be conserved. Planning for digitisation may use different criteria: it may be appropriate for the latter type of material but may not be justifiable for the former.

The survey includes a question about retention status, requiring each item to be rated on a four-point scale.

What do the retention categories mean?

- A** Indefinite retention in original format and possibly also in surrogate format.
- B** Indefinite retention in original format only.
- C** Indefinite retention in surrogate format only.
- D** Will not be retained beyond immediate usefulness.

	Aggregate dataset	Archives from aggregate dataset	Libraries from aggregate dataset	Record offices from stratified dataset	Libraries from stratified dataset
A	26	39	12	59	8
B	71	58	86	37	88
C	1	1	0	3	2
D	2	2	1	0	1

Table 12

Table 12 shows the percentage of material in each category from the aggregated dataset, from archives within the aggregated dataset, and from record offices in the stratified dataset. The indication is that overall most material falls into category B, to be retained in the longterm, but that a significant amount of material falls into category A, for which respondents would like to have surrogates in addition to retaining the original. The desire to create surrogates of collection material is much higher than average in archives, and particularly so in local record offices. In libraries the pattern is different. The conclusion is that archives and record offices would like to have significant amounts of material surrogated.

However, this figure is clearly aspirational, since we have found that only 8% of material in record offices has a surrogate. We have also found that in practice there is little evidence of the correlation suggested above between use, value and surrogacy. Of the material with a surrogate 12% is still subject to heavy use. Only 1% of heavily used material has a surrogate. There is little evidence here of a planned approach.

ACIDIC PAPER

Mass deacidification is a preservation and conservation option which is currently not generally used in the UK. There is no plant in this country, and while there is the option in theory to send material to plant in Europe, we are not aware of any institution currently doing this. The Infosave project (2002)⁸ undertook a survey which indicated that in five major institutions in the Southeast and London some 182km of library and archive material was dated post-1850 and potentially vulnerable to acid deterioration. The true figure for all regions and all institutions will be many times this. The survey figures can flesh out this need even more.

⁸ The report can be found on the NPO website <http://www.bl.uk/service/s/npo/infosave.html>

We have identified that:

- 3% of material surveyed has significant brittle paper to the body of the item
- 18% suffers from slight brittle paper
- 68% of items surveyed were created after 1850
- 68% of post-1850 material is kept in inadequate environmental conditions

These figures indicate that a very large body of material is likely to become brittle in the medium and long term. Deterioration could be slowed by improving the environment in which the paper is kept.⁹ If environmental improvement were combined with selective, targeted deacidification and surrogacy to minimise handling, we could ensure maximum survival and accessibility for this material.

⁹ Research at the Image Permanence Institute, Rochester, N.Y., has shown that a reduction from 72°F to 62°F at 50% RH can double the life expectancy of paper. The same reduction at 40% RH more than doubles life expectancy. James Reilly et al., *New Tools for preservation*, Washington: Commission on Preservation and Access, 1995.

Using the stratified dataset we find that in libraries there is more slightly brittle paper than in archives. Possible reasons for this difference may be the higher incidence of machine-made paper in books than in archives, and the generally better environmental standards in archives. On this evidence, more emphasis should be placed on the deacidification of library material.

	Slightly brittle paper	Significantly brittle paper
Libraries	11%	1%
Archives	3%	1%

Table 13

Material which is already significantly brittle is unlikely to benefit from mass deacidification—it is too far gone. At present this is a relatively low proportion. For slightly brittle material the rate of deterioration may be slowed by improved preservation, but it may still be too late for substantial improvement. And we need to think also of the potential for deterioration.

We have analysed the material which is both unstable and has significantly brittle paper. 3% of the UK aggregate is unstable and has either significantly brittle bindings and/or bodies. Maps, newspapers and nineteenth century printed material are the commonest categories here. While this material is now too deteriorated to benefit from deacidification, it suggests that these categories should be the focus of future activity.

MODELLING CHANGE

The database can show the effects of improvements in preservation, simply by changing the responses to the key preservation questions. This can tell individual institutions what effect each measure has, and the cumulative effect of making several improvements.

When we apply this process to the aggregated figures, we can show what the national profile would be like if all institutions had good environment, proper protection, a disaster plan, etc. (Figure 8), giving a 'best case' profile. After this is done, there remains a proportion of material in moderate to moderately-high preservation need. This material remains in priority categories because it combines significance, high use and poor condition.

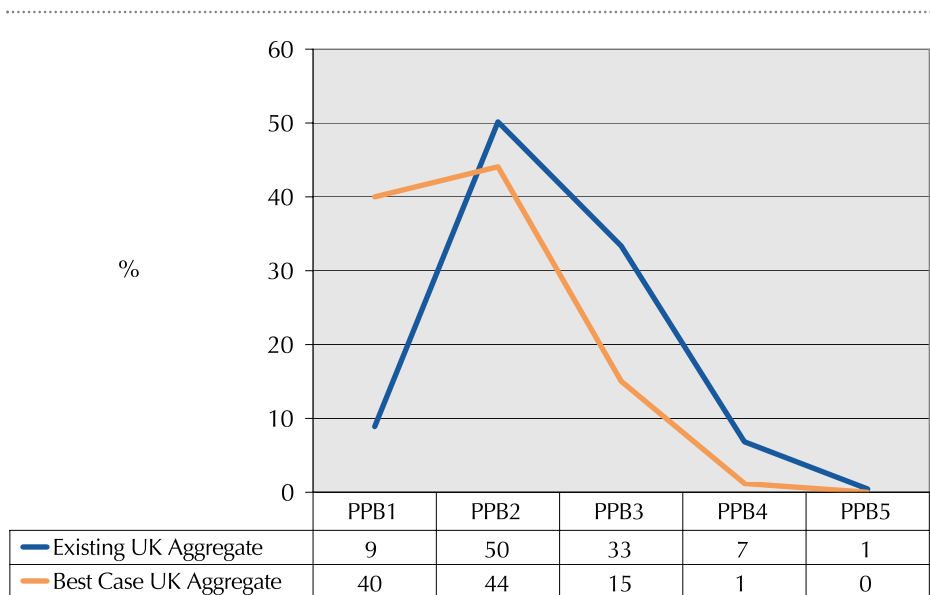


Figure 8

An overview of the items in these priority bands shows that the majority of items are from archives, much is created post-1850, and there are significant quantities of maps and newspapers, as well as pre-1900 printed books. These categories are very similar to those found to be at risk of brittle paper deterioration.

CONSERVATION NEED

This survey method concentrates on identifying preservation need, but can also point to where interventive conservation is needed. The analysis of damage to bindings, of unstable material, and of material whose need cannot be addressed by preservation measures, reveals a substantial need for paper and book conservation.

3 Emerging stratified results

As outlined in Section 1.5, the stratified profile contains data from representative surveys across the institution types, sectors and regions, enabling meaningful analysis and comparisons across these sub-sets. While the data set is not yet complete for all regions, the profile does contain sufficient data to allow analysis by sector. The following results are included here as examples of the kind of analysis which can be carried out using the stratified profile; more will emerge as the data set grows. When fuller data is available we will publish a more developed analysis by region and sector. The current analysis can be read as indicative of the emerging trends.

3.1 KEY DIFFERENCES BETWEEN SECTORS

The sectoral divisions used include record offices, other archives, libraries (public and special), higher education libraries, copyright (legal deposit) libraries and rare books collections. The UK stratified figure is presented as a baseline for comparison, followed by the sectoral variations.

CONDITION AND USABILITY

Figure 9 shows the four categories of condition and usability across the different sectors, compared with the UK stratified figure. Record offices show considerable variation from the stratified figure, having the majority of material in ‘fair’ condition, while higher education libraries have a much higher proportion of material in ‘good’ condition.

Record offices have the highest proportion of unstable material—11%, compared to the UK stratified figure of 8%. This may be because some material is not capable of being wholly stabilised or because it is awaiting treatment.

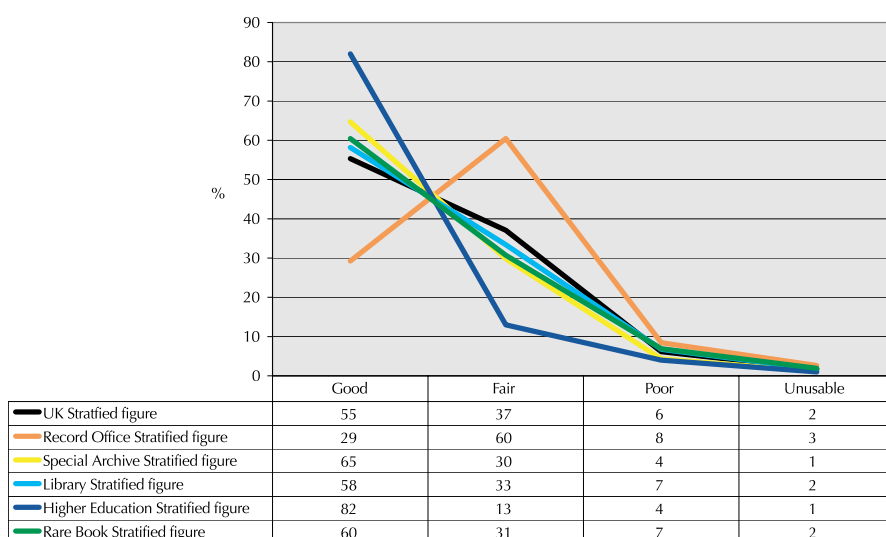


Figure 9

PRESERVATION FACTORS

Figure 10 shows the range of deficiencies in basic preservation factors (handling, storage, environment, security, fire and written disaster plan) in two sectors—libraries and archives—compared to the UK stratified figure. In all areas archives are better than the UK baseline, while libraries are uniformly worse. In Section 2.1, analysis of the UK aggregated statistics revealed environmental monitoring and conditions as the greatest area of deficiency, a result which is confirmed by this sectoral profile, with the very high library figure being of particular concern.

- 58% of items in archives have inadequate environmental monitoring and conditions
- 88% of items in libraries have inadequate environmental monitoring and conditions
- 74% of items in the UK stratified dataset have inadequate environmental monitoring and conditions

The larger proportion of open-access storage in libraries, compared to the preponderance of strong-room storage in archives, may partly explain the divergence between the figures relating to storage and security. Although the level of fire detection is generally good throughout, libraries do show a relative weakness.

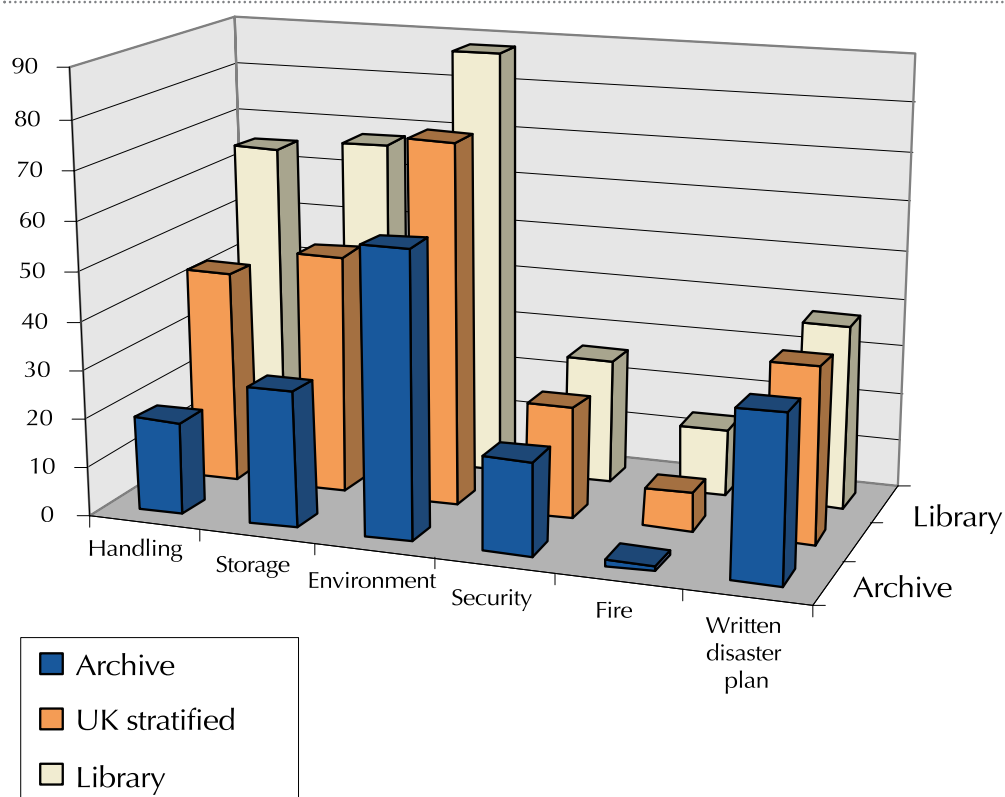


Figure 10

3.2 REGIONAL ANALYSIS

The regional data set is not yet complete and does not contain sufficient representative surveys to allow analysis across all the regions. The following figure is included as an example of the regional picture which we are beginning to put together.

Figure 11 shows the preservation priority bands for the English regions South East, South West and London. As with the picture derived from the UK aggregated data (illustrated in Figure 1), all three regions peak in PPB2 (low priority). From this initial analysis, London differs from the other two regions and from the UK stratified figure, with significantly more material in PPB1 and 2 (very low and low priority) and significantly less in Bands 3 to 5

where preservation is of medium to very high priority. We can hypothesise that climatic variations, urban/rural environments and historic levels of investment in infrastructure are among the factors which influence these findings. However, much more analysis is needed, along with further regional profiles and comparisons, before we can assess the implications of these findings.

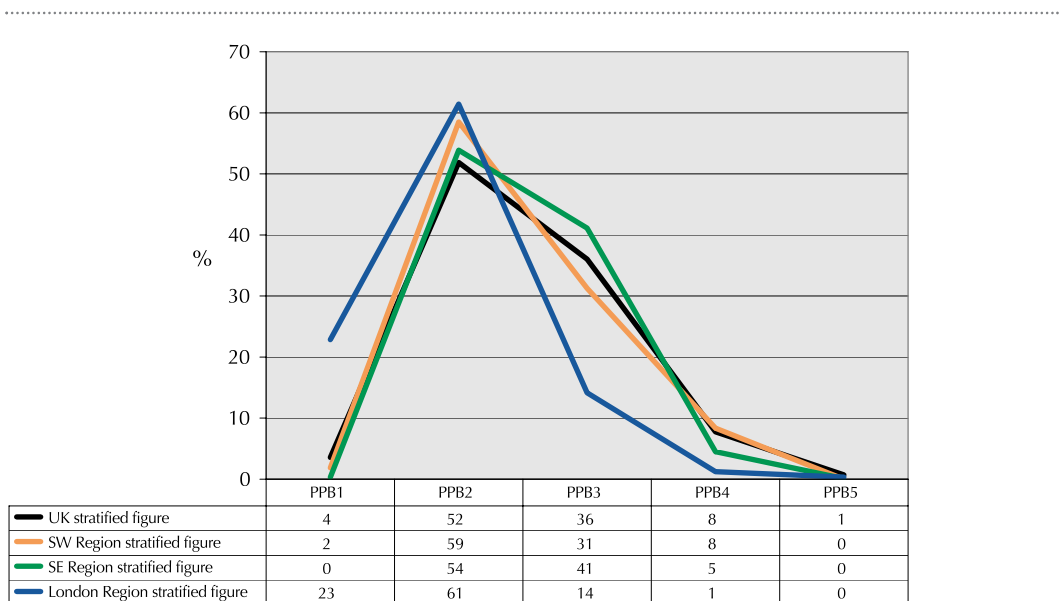


Figure 11

4 Applying the results

4.1 A PRACTICAL TOOL FOR INSTITUTIONS

The survey method was designed as a practical tool to enable institutions to plan and prioritise their own preservation and conservation activities, and to support applications for funding for particular collections or preservation projects.

The NPO has surveyed users to find out how they have applied their survey reports within their organisation. We have found that the statistics have been used in a wide range of scenarios. These include:

- Developing and steering planning and policy
- Identifying problem areas of storage
- Managing and justifying resource requirements—staff or budgets
- Influencing/educating senior managers and external contacts
- Identifying the need for regional funding and collaboration
- Supporting bids for internal and external funding (an average of £11,000 per institution in external grants had been achieved)
- Setting and meeting conservation targets
- Continuity (managing staff changes)
- Planning collection moves

Whole-collection surveys have been found useful. They have sometimes been followed up even more productively by a subsequent survey of a single area of particular importance, value or popularity.

Funding bodies, such as the Heritage Lottery Fund, the National Manuscripts Conservation Trust, and the Wellcome Trust's Research Resources in Medical History, generally require an overview of the state of preservation of a collection in order to assess the benefit of the funding proposal submitted to them. For example, it has been reported to us that small grants to purchase specific shelving or conservation equipment have been received, and that a number of larger conservation treatment grants have been achieved. In addition, funding applications for part-time staffing to support ongoing activities such as repackaging have been successful. Data from the reports is being used in several cases to support applications to the Heritage Lottery Fund. We know that in at least one case survey reports have been a critical factor in obtaining government approval and funding for a new archive repository.

The user survey covered institutions which had undertaken surveys over a five-year period, and found there had been fairly high levels of staff turnover in that time. However, this demonstrated an unexpected use of the PAS reports—as a means for newly appointed staff members to acquire and explore an understanding of the collection and its needs.

'... document provides solid foundation to build on'
 '... increased awareness of preservation activities'
 '... identified a need for a specific preservation budget'
 '... reinforced our own understanding'
 '... a reliable and informed picture of what we thought we knew'
 '... assisted in targeting collections for preservation, digitisation and conservation activity by highlighting problems and enabling us to assess the most cost-effective approach to having the greatest impact on the greatest number of items'

These are some of the comments made by users on the positive outcomes from the Preservation Assessment Survey.

4.2 FUTURE USE

The use of the database to model changes in preservation provision (the 'what if?' reports), predicting the changes that would occur if specific improvements were introduced—for example, installing a fire detection system, or establishing a written disaster plan—can be used for target-setting. The method has a potential use in verifying the effect of improvements in preservation. If the survey is repeated after a period of time it can measure and demonstrate the impact of improvements, packaging or conservation work. The same process could measure the impact on a national scale of individual, regional or national programmes.

The NPO has already worked with some of the English regional agencies in managing selected surveys in order to develop regional pictures which will help with local strategies. As these programmes gather critical mass, the stratified dataset will become fuller and more informative.

The survey can be used alongside *Benchmarks in Collection Care*.¹⁰ The *Benchmarks* process gives a good analysis of stewardship practice, which can complement the Preservation Assessment Survey's analysis of preservation standards and collection condition. Used together they provide closely associated evidence on which to plan action.

¹⁰ www.mla.gov.uk/documents/benchmarks.pdf

5 Conclusions and the way forward

5.1 SUMMARY OF PRESERVATION NEED

The Preservation Assessment Surveys have demonstrated that although much of the material in collections surveyed is in good or fair condition—it is not significantly damaged or deteriorating—a number of key preservation practices should be improved in order to minimise risk to collections, prevent deterioration in the future and redress damage which has already occurred.

The key issues are:

- Environmental monitoring
- Storage
- Packaging
- Surface dirt
- Disaster planning
- Damage to bindings
- Acidic paper

The findings suggest that at the highest level, action to address the need should focus on

- Achieving an equilibrium for unstable material
- Identifying and implementing the most appropriate methods for retarding or correcting the development of brittle paper
- Extensive and consistent use of surrogates
- Ensuring there is an appropriately skilled workforce in both preservation and conservation

At institutional level, the following are needed:

- Housekeeping measures—cleaning, packaging
- Disaster planning
- Conservation
- Better storage
- Environmental monitoring and control

5.2 THE WAY FORWARD

It is not our purpose at this stage to develop a detailed strategy to address the need we have identified, but to focus on those issues which have been shown to have priority.

The headline issues we have identified are :

Significant amounts of material in archives and libraries are at risk now because of poor preservation.

Further significant amounts of material in archives and libraries which are not currently damaged will be at risk in the future because of inadequate preservation practice.

Categories which we have identified as being particularly at risk are precisely those which are of interest to a wide audience: local newspapers, local maps, printed and archive material from the industrial and post-industrial age.

Action must be taken in order that collections may be used now and in the future.

We have identified areas where specific aspects of preservation could and should be improved.

We would also suggest that in other areas, only concerted action and funding, possibly at a national level, is likely to create viable initiatives, such as mass deacidification and large-scale shared high-density storage providing innovative cool environmental conditions.

We suggest that collaborative local or regional action could address many of the local requirements by implementing

- Shared storage
- Shared disaster response arrangements
- Centres of excellence for conservation
- Shared purchase and distribution of equipment and supplies
- Training in best practice

Capacity, skills and funding are needed. The NPO will work with others to encourage and participate in debate to develop strategies.

Collections are at the heart of libraries and archives. They are needed now to underpin vital access, learning and community strategies, and in the future to maintain knowledge and allow interpretation of the past.

Appendix

Collections included in the aggregated dataset

The aggregated dataset contains records from 97 surveys in 79 institutions. In some cases only part of the institutions' holdings were surveyed, while others cover the whole collection. Surveys of libraries are mostly printed material, and archive surveys mostly manuscript documents, but many surveys included both manuscript and printed material.

ORGANISATION NAME

Aviva plc
 Bath Royal Literary and Scientific Institution
 Bexley Local Studies & Archive Centre
 Bolton Record Office
 Brasenose College Library, Oxford
 British Film Institute Library
 British Library of Political and Economic Science
 Cambridge University Library (4 surveys)
 Cardiff University Library
 Centre for Kentish Studies (2 surveys)
 Cornwall Record Office
 Courtauld Institute of Art
 Cumbria Archive Service (4 surveys)
 Darlington Centre for Local Studies
 Devon Record Office
 East Riding of Yorkshire Archive Service
 Edinburgh City Library
 Edinburgh University Library
 Enfield Record Office
 Goldsmiths College, University of London
 Greater Manchester County Record Office
 Gwynedd Archive Service (3 surveys)
 Hackney Archives Department
 Hammersmith Library
 Harris Manchester College, Oxford
 Heythrop College, University of London
 Hillingdon Local Studies Library
 Hull City Archive
 Hull Local Studies Library
 Institute of Commonwealth Studies, University of London
 Institute of Contemporary History
 Institute of Psychoanalysis
 Islington Local History Centre
 King's College London
 King's College London Archive Service

Liverpool Libraries and Information Services
London Library
London Metropolitan Archives
London School of Hygiene and Tropical Medicine, University of London
Lothian Health Services Archive
National Archives
National Archives of Scotland
National Library of Scotland (2 surveys)
National Maritime Museum
Newcastle Literary and Philosophical Society
North Yorkshire Record Office
Northamptonshire Record Office
Northumberland Record Office
Nottingham University
Oxford University Library Services (6 surveys)
Plymouth and West Devon Record Office
Plymouth Local and Naval Library
Powys County Archives Service
Public Record Office of Northern Ireland
Queen's University Belfast
Redbridge Library and Archive Service
Religious Society of Friends
Royal College of Physicians and Surgeons, Glasgow
Royal Free Hampstead Hospital Archives
Royal Holloway College, University of London
School of Oriental and African Studies, University of London
Shakespeare Birthplace Trust (2 surveys)
Shropshire Records and Research
Sidney Sussex College, Cambridge
Society of Antiquaries
Society of the Middle Temple
Somerset Record Office
St Bride's Library
St Deiniol's Library
St Paul's Cathedral
Staffordshire County Council
Surrey History Centre
Sussex University Library
Warwick University, Modern Records Centre
Wesley Historical Society
West Sussex Record Office
Wolverhampton Archive and Local Studies
Worcestershire Record Office (5 surveys)
Working Class Movement Library

RECORD OFFICES INCLUDED IN THE STRATIFIED DATASET

Gwynedd Archive Service
Isle of Wight Record Office
London Metropolitan Archives
North Yorkshire Record Office
Northamptonshire Record Office
Northumberland Record Office
Public Record Office of Northern Ireland
Somerset County Record Office
Wirral Record Office
Wolverhampton Record Office

LIBRARIES INCLUDED IN THE STRATIFIED DATASET

Bath Royal Literary and Scientific Institution
Edinburgh City Library
Hull Local Studies Library
Islington Local History Centre
Liverpool Central Library
Newcastle Literary and Philosophical Society
Oxford Union Library
Plymouth Local and Naval Library
Portsmouth Central Library
Royal College of Physicians and Surgeons, Glasgow
Shakespeare Birthplace Trust
Sidney Sussex College, Cambridge
Society of Antiquaries
St Deiniol's Library
Tank Museum Library
Worcestershire Library and History Centre



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The National Archives
of Scotland
The Heritage Council of Ireland
The National Archives of Ireland
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University Libraries (CONUL)
The Society of College, National
and University Libraries
(SCONUL)

