AUDITOR-GENERAL'S REPORT

PERFORMANCE AUDIT

Knowing the Collections

Australian Museum

The Legislative Assembly	The Legislative Council
Parliament House	Parliament House
SYDNEY NSW 2000	SYDNEY NSW 2000

In accordance with section 38E of the *Public Finance and Audit Act 1983*, I present a report titled **Knowing the Collections: Australian Museum**.

Peter Achterstraat
Auditor-General

Sydney
September 2010

Contents

Foreword

The State's major collections at the Australian Museum, Powerhouse Museum, Art Gallery and State Library consist of around 24 million items and have been valued at around $4 billion. Many of these items are held because of their unique cultural, historical, geographical, scientific or environmental attributes and, in reality, could never be replaced.

A 2009 survey by the Audit Office found that these agencies faced a number of challenges in relation to the security and documentation of their collections. These were due in part to the increasing size of some collections, finite resources, historical gaps in knowledge and record keeping systems that varied in quality and completeness.

This audit looks at the Australian Museum, which has the largest of around 18 million items. It does not look at security arrangements. It looks at the information the Museum holds on its collections, its inventory controls and how well it can locate the objects in its care.

Although the audit focuses on the Australian Museum, the issues it examines are not confined to that agency. I believe its findings will inform the other agencies responsible for managing the State's major collections.

The State's collections are assets of great significance and considerable value. They warrant a high level of asset management.

Peter Achterstraat
Auditor-General

September 2010

Audit conclusion and recommendations

The focus of our audit

The audit is examining how well the Australian Museum knows its collections.

The Australian Museum's collections of cultural, biological and geological items cover Australia and the Asia-Pacific region. The Museum's objectives are to propagate knowledge about the natural environment of Australia and to increase that knowledge. The collection exceeds 18 million objects. The collection has been valued at $767 million, although this does not represent its scientific or social value as many of the objects cannot be replaced or recollected.

In 2003 the Independent Commission Against Corruption (ICAC) completed an investigation into the theft of thousands of zoological specimens from the Museum between 1997 and 2002. Missing items have included animal skulls, skeletons, a stuffed lion, birds and rare books. The Commission found that the Museum's inventory at that time was incomplete and its security and collection management practices inadequate. As a consequence, the Museum could not be certain of the full extent of the thefts.

This audit does not look at security arrangements. It looks at the information the Museum holds on its collections, its inventory controls and how well it can locate the objects in its care.

Conclusion

The Museum is doing much to improve access to its collections. However, as with other natural history museums, only a small proportion is on public display. Its efforts range from placing information on the internet for use by the public and scientific users, to helping indigenous Australian and Pacific Islander communities reconnect with their respective cultures.

However, a lack of information on its collections limits the Museum's ability to fully achieve its stated objectives. Despite efforts to digitise its information, much of the collection remains unregistered or poorly catalogued. Most items can be located by the curator and staff, but not by anyone else. Much of the information on the collection is still held on paper, cards, slides and old photographs. Most items are not assigned a value and most do not have their condition recorded.

This problem is not new. It is a result of collection practices at the Australian Museum over the last 140 years.

It weakens the Museum's ability to provide information on its collections. It weakens its ability to exercise effective control over the objects in its care. It also invites theft where the Museum may have no immediate sense that an object has disappeared and little descriptive information with which to aid in its recovery.

A concerted effort is needed. The Australian Museum needs to develop a stronger and more systematic approach to its information and inventory controls based on value, significance, use and risk. It also needs to develop a specific policy and plans for retrospective documentation and digitisation.

Summary of key findings

Are collections defined and classified?

Collections are organised largely by classification and origin. Beyond this, the Australian Museum has not graded or otherwise prioritised its collections in terms of their use or importance. This leaves it poorly placed to apply a risk management approach to storing, conserving, documenting, protecting and checking its collections. It also leaves it unable to ensure that its limited collection management resources are being used in the most efficient and effective manner.

Are objects accessioned and catalogued in timely fashion?

Many items have been acquired, but not registered. Many items are registered, but not otherwise catalogued. The Museum draws no distinction between registration and cataloguing. While it has set minimum information requirements for registration, it has stipulated no minimum requirements for cataloguing its collections, such as the maximum time permitted to elapse between the acquisition of an object and the completion of a catalogue record and the expected content of a typical 'full' catalogue record for different types of object.

Will a search accurately show holdings and locations?

Most items either do not have their location specified, or else it is not specified more closely than to a gallery or area. As a result, most items can be located by the curator (or subject specialist) and staff, but not by anyone else. Unlike other museums we contacted, there is no oversight and reporting role, independent of responsibilities for field work and the short term needs of particular collections, to ensure an impartial and consistent approach to collection management and safe-keeping.

Can objects be accessed in a way suited to their use?

As with other natural history museums, only a very small proportion of each collection is on public display. This is estimated overall to be less than half of one per cent. The primary use of the collections is for scientific research. The Museum has an extensive legacy of non digital information resources. Development of digital content and images should allow the Museum to greatly increase access to its collections. It needs a specific management policy and plans for retrospective documentation and digitisation.

Are the value and significance of objects assessed and periodically updated?

Although the collections are periodically re-valued overall, for accounting and insurance purposes, less than one per cent of individual items have a statement of value or significance. An overall financial value of $767 million was assessed in 2008 based on market value (where it could be assessed), or alternatively the estimated cost of re-collecting items.

Do regular inventory checks confirm actual holdings?

The Museum conducts limited inventory checks. These provide limited assurance to confirm actual holdings and the information held on those holdings. The Museum needs a more systematic approach, recognising the need for different levels of inventory control to reflect the degree of risk involved. But it needs first to retrospectively undertake an inventory of the existing collection to provide a baseline for future inventory control.

Is the condition of holdings known, assessed and periodically updated?

Most items do not have their condition recorded. A conservation unit monitors the environmental conditions of different storage areas. We did not find identification and assessment of high value or high significance objects at risk from their condition or surrounding environment.

Recommendations

Prioritise the collections

1. The Museum needs to grade or otherwise prioritise its collections in terms of their use and importance, in order to better protect the collections and improve the use of its resources (page 12). It needs to adopt criteria for this purpose by March 2011 (page 21).

Tighten inventory control

2. The Museum needs to tighten inventory control by December 2011 to reflect differing levels of collection risk by:

   a. establishing an independent oversight and reporting role (page 17)

   b. clearly defining the control and checking requirements of objects in each collection (pages 24, 25)

   c. setting specific standards for timeliness and cataloguing content (page 15)

   d. identifying the location of all objects within the collections, pin-pointing high risk objects (page 17)

   e. evaluating ways of making inventory checking more efficient (page 24)

   f. conducting a baseline inventory to serve as a basis for future inventory control (page 24).

Plan a major catch-up

3. The Museum needs to develop by September 2011 specific management policy and plans for retrospective documentation and digitisation including:

   a. its understanding of the backlogs it has

   b. its timescales for reducing the backlogs

   c. levels of resources allocated to the task

   d. the number of objects/records to be addressed

   e. the standard of documentation required

   f. progress reviews on a regular basis (page 19).

Response from the Australian Museum

Thank you for the opportunity to respond to your performance audit Knowing the Collections.

The Australian Museum appreciates the review of our performance in managing one of Australia's most significant collections of natural history specimens and cultural objects.

This response outlines a balanced approach for implementing the audit's recommendations with due regard for the Museum's statutory responsibilities and the need to balance the day-to-day management ('housekeeping') of the collection with the need to provide access for collection users.

With current resource levels we cannot do as much of either as we would like.

Responsibilities

The Australian Museum is Australia's first museum and has responsibilities 'to propagate knowledge about the natural environment of Australia and to increase that knowledge, particularly in the natural sciences of biology, anthropology and geology' (Australian Museum Trust Act 1975).

The Museum's collection is fundamental to meeting these responsibilities. Over its 183 years of existence, the Museum has acquired some 18 million objects and specimens. With continuing scientific research programs and strategic collection development activities, the collection will continue to expand.

The value of the Museum's collection is linked to the uses that people make of the objects it contains, which in turn depends on the information and knowledge we have about them. Without documentation and updated knowledge, the value of collection objects is often extremely limited.

A considerable amount of this knowledge exists outside this Museum, which is why providing access to the collection is critical, and why 'Unlocking the collections' is a stated imperative of the Museum's Corporate Strategic Plan. The Museum is implementing a range of initiatives to achieve this goal.

Documentation

The Museum's current electronic collections database, EMu, has been in place for just 7 years and already contains over 1.6 million records. However, the migration of data from other media to EMu is not yet complete and so is not readily available for retrieval by external users.

In addition, a substantial proportion of the collection is yet to be fully documented. Information about some objects and specimens collected in times past is scant or not available. The objects themselves are the subject of current, and no doubt future, research that will result in new knowledge.

The Natural Science Collection in particular contains groups of specimens that were collected incidentally during other collecting activities. These are stored pending sorting, research and the eventual documentation of individual specimens.

Providing access to the collection

The Museum aims to provide an appropriate balance between the competing demands of protecting the collection ('housekeeping') and facilitating access.

Collection management staff have broad responsibilities for the collection with an emphasis on making it accessible for scientific research, public exhibitions and programs, and for community cultural purposes. Objects and specimens are loaned, made available for inspection within the Museum or, more recently, made available digitally for internet access where possible. Such access leads to increased and updated knowledge of the collection, thus increasing its value.

The audit has focused on the need for 'housekeeping'. However, a substantial re-direction of existing resources to address a number of the issues raised in the audit report would seriously impact on the Museum's ability to provide access to the collection.

Implementing the Audit's recommendations

The Museum agrees with the thrust of the three broad recommendations of the audit report. Some progress in addressing the recommendations will be made within existing, or with limited additional, resources. A comprehensive and fully effective response, however, would require a substantial investment.

The following solutions address the recommendations accordingly. The key to implementing the recommendations cost-effectively is to direct resources to the collection areas of greatest need. This will require more complex, but parallel, approaches for the two main areas, the Natural Sciences Collection and the Cultural Collection.

Solutions within existing or limited additional resources

The Museum has developed a three-tier classification scheme to define objects of high, medium and low risk (of loss) which is used to define and assign security standards for each object.

This scheme can be expanded for the Natural Sciences Collection to include scientific values and classes of specimens (such as type specimens and specimens of rare, threatened and extinct species). Limited additional resources would be required to incorporate this information into the EMu database.

In tightening inventory control, the Museum will amend procedures to establish a more independent process in the conduct of periodic collection checks. Some specific components of amended inventory control procedures may require additional resourcing (limited or substantial).

Basic planning to overcome the backlog of undocumented or undigitised data can be undertaken with existing or limited additional resources. The Museum has sought external funding for improving the documentation and digitisation of collection in the past, and these proposals contain much of the information required to develop a comprehensive plan.

Solutions requiring substantial additional resources

The Cultural Collection, although smaller than the Natural History Collection, is less readily classified into risk categories. It accounts for an estimated 7% of the total collection size, but what is seen as significant or important in the Cultural Collection will vary between stakeholders or 'classifiers'. For example, a Museum collection manager or scientist may appreciate the significance of an object very differently to a member of a creator community associated with that object. Therefore developing a defensible framework that can be applied consistently across objects will need to involve consultation, collaboration and sensitivity to differing views.

Historically, it has been easier to obtain funding for the development of new systems than for getting fundamental data into those systems. However, we are currently participating in the preparation of funding submissions to increase current efforts for data entry and to trial a range of low-cost, and cost-effective, digitisation options.

Implementing a plan to overcome the backlog of those objects requiring documentation would require substantial additional resources, even if only the highest priority objects and specimens are considered.

Summary

The Museum will endeavour to implement the audit's recommendations as outlined in this response, both by redirecting existing resources where possible and pursuing funding opportunities as required.

(signed)

Janet Carding
Acting Director

Dated: 19 July 2010

Key findings

Are collections defined and classified?

Conclusion

Collections are organised largely by classification and origin. Beyond this, the Australian Museum has not graded or otherwise prioritised its collections in terms of their use or importance. This leaves it poorly placed to apply a risk management approach to storing, conserving, documenting, protecting and checking its collections. It also leaves it unable to ensure that its limited collection management resources are being used in the most efficient and effective manner.

Organising the collections

Museums rely on various systems for describing, naming, classifying and otherwise organising their collections. These systems may reflect an item's:

- classification - such as whether it is plant, animal or mineral
- use - such as for display, research, teaching or artistic purposes
- importance - such as whether it is a primary type, extinct or endangered species, or has a high market value.

We found that the Australian Museum's collections are organised largely by classification and by origin, as follows:

- natural science collections use different scientifically based systems of classification based on their contents. The *Linnaean* system is used for animals. Different systems are used for minerals, meteorites, igneous rocks, metamorphic rocks. Within these collections, 'primary type' or reference specimens are seen as the most important
- cultural collections use area based systems: Aboriginal and Torres Strait, Pacific, Asia, Africa, Americas. Within this, items of similar type (such as spears) are sometimes grouped together.

The main collections are supported by Archives and a Research Library, each having their own historical collections.

Size estimates

The number of items in the collection is an estimate. Five estimates since 2001 have increased the size of the collection from 13 million to 18 million items, as shown below:

Exhibit 1 - Estimates of collection size
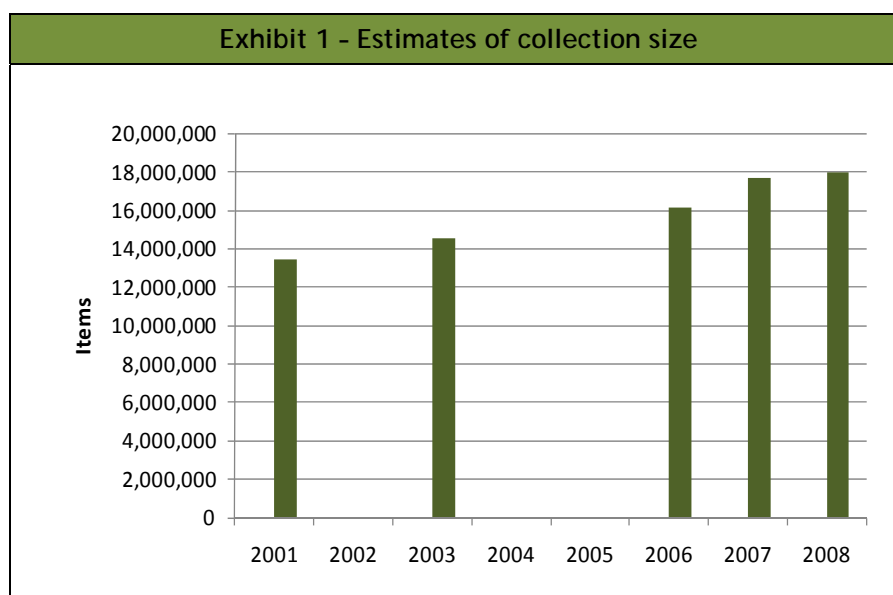
For some parts of the collection, each item is individually registered. In other collections, where the collections are based on 'lots', a mean number of items per lot has been calculated. In addition Collection Managers add an estimate for the amount of material that is in samples which are not yet processed.

The vast majority of individual items are in the natural science collections, as shown below.

Exhibit 2 - Estimated sizes of individual collections	
Collection name	Collection size (M)
Cultural collections	
Anthropology	0.120
Archaeology	1.067
Natural science collections	
Arachnology (spiders)	0.367
Entomology (insects)	6.024
Herpetology (reptiles and amphibians)	0.172
Ichthyology (fish)	1.620
Malacology (molluscs such as clams, oysters, octopus and mussels)	4.269
Mammalogy (mammals)	0.047
Marine invertebrates (such as worms, lobsters, anemones)	4.010
Mineralogy (rocks and gems)	0.076
Ornithology (birds)	0.088
Palaeontology (fossils)	0.151
Total	**18.012**

Source: Australian Museum estimate December 2008

Of the almost 17 million items held in the natural science collections, around 11,000 are identified as unique 'holotypes' (this being the first specimen on which an author based his description).

Prioritising   While the Museum's collections are increasing in size, there is a finite limit to its resources. It is not possible, and not necessary, to provide the same level of protection and care to each of the mammals, fish, reptiles, insects and other items that make up total of 18 million. Looking after some items, such as stuffed lions and a stuffed rhinoceros, inevitably comes at the expense of looking after something else.

However, the Museum has not graded or otherwise prioritised its collections in terms of their use or importance. In April 2010 it completed a significance assessment of the items housed at its Maddox Street store. The Museum advised it is developing a system of three categories for security purposes. Beyond this, there is no obvious framework for prioritising the collections, recognising that some items are more valuable than others and that some need more care than others.

Without having prioritised its collections, the Museum is poorly placed to:

- apply a risk management approach to storing, conserving, documenting, protecting and checking its collections

- ensure that its limited collection management resources are being used in the most efficient and effective manner.

By way of comparison:

- US National Parks Service requires stringent controls over what it defines as 'controlled museum property'. This includes objects valued at $1,000 or more, objects that are especially vulnerable to theft, loss or damage, and natural history specimens of high scientific value

- Sydney's Powerhouse Museum, although not a natural history museum, divides its collections into three categories by significance.

Recommendation   The Museum needs to grade or otherwise prioritise its collections in terms of their use or importance, in order to better protect the collections and improve the use of its resources.

Are objects accessioned and catalogued in timely fashion?

Conclusion   Many items have been acquired, but not registered. Many items are registered, but not otherwise catalogued. The Museum draws no distinction between registration and cataloguing. While it has set minimum information requirements for registration, it has stipulated no minimum requirements for cataloguing its collections, such as the maximum time permitted to elapse between the acquisition of an object and the completion of a catalogue record and the expected content of a typical 'full' catalogue record for different types of object.

Accountability requirements   Possession of collections incurs legal, social, and ethical obligations to provide proper physical storage, management, and care for the collections and associated documentation. This typically involves:

1. acquiring an item, such as from a donation or collection of items in the field

2. accessioning the item, usually by 'registering' it, where the museum assumes formal ownership and responsibility

3. cataloguing the item by creating a record of specific information about it, including description, history, significance, condition, conservation, loan and location history.

These represent the primary property accountability records for museum objects.

Accessioning   The Museum's *Collection Management Policy* says that *objects acquired by the Museum will have an accession procedure in place to document and track the object, including some type of accession number or field number.* The Museum does not define its requirements further, other than adding that all new material within the collection should be registered within a 'reasonable' period of time.

Priority for registration is understood to be specimens that are being sent on loan, being studied in Museum research projects, cited in a scientific publication, or required for public display. Registration practices vary between collection managers, who have adopted different conventions and procedures. Formats and numbering systems are different. Some items are only recorded and tracked by field numbers, and may not be registered for many years.

The Policy includes guidance, but no financial limits or other controls to limit the quantum of items for which the museum is assuming formal ownership and responsibility. However, since August 2009 a *Cultural Collections Acquisition Committee* has been established as a formal means of controlling accessions in that particular area. It is currently only dealing with ethnographic material, but by the end of 2010 it is expected to also deal with archaeological material.

Cataloguing   The Museum draws no distinction between registration and cataloguing. It has set no targets for the timeliness of accessioning and cataloguing and does not routinely monitor performance in this respect.

Exhibit 3 - Beetles in a drawer

Source: Australian Museum

The Museum's electronic cataloguing system 'EMu' has been in place for 7 years, but the process of incorporating separate collection databases has only recently been completed. The system has the capacity to record comprehensive data on object classification, accessions, storage locations and movements of items, inventory, valuation, insurance, condition and repair of items. The degree to which any of these individual areas of data storage in EMu have been utilised varies between collections. There is a continuing effort to increase the amount of information stored.

For registration purposes, new items must satisfy minimum information requirements such as storage medium, taxonomy, collection and physical location. However, many items are registered but not otherwise catalogued. The Museum has stipulated no minimum requirements for cataloguing its collections, such as the maximum time permitted to elapse between the acquisition of an object and the completion of a catalogue record and the expected content of a typical 'full' catalogue record for different types of object.

The UK's Museum Documentation Standard SPECTRUM explains that: 'organisations should have clearly defined levels of cataloguing to ensure that consistency is maintained, making reference to the status of the collection and the type and size of collection being catalogued. In some cases (e.g. a significant complex object with much associated contextual information) it will be desirable and possible to catalogue objects at item level and develop extensive records. In other cases (e.g. large collections) it will be more appropriate, or only possible, to catalogue at the level of collection or group, and the inventory level may suffice.'

Exhibit 4 - Storage of an Emu bird

Source: Australian Museum

Assessing progress	The percentage of the 'registered' collection on EMu ranges from 10% for mineralogy to 100% for ornithology. But much of the collection is not 'registered'. Various collection pieces remain unidentified and unsorted, in the state in which they were collected from the field. The amount of records in such unregistered collection items is unknown.
	The Museum is unable to establish how much of the collection is registered or catalogued. It does not report on how long it is taking from when items are acquired to when they are registered or catalogued, and how much of the catalogued collection contains core inventory information including object number, name, description, location and condition.
	While the Museum reports each year on the number of manual records converted to electronic records, it does not report on the nature and extent of its cataloguing backlog.
	The *State Records Act 1998* requires public offices to 'make and keep full and accurate records'. It also requires that policies and plans for records management be implemented systematically throughout the public office.
Recommendation	The Museum needs to set specific standards for timeliness and cataloguing content (not only for new items, but also for the great bulk of items already in its care).

Will a search accurately show holdings and locations?

Conclusion	Most items either do not have their location specified, or else it is not specified more closely than to a gallery or area. As a result, most items can be located by the curator (or subject specialist) and staff, but not by anyone else. Unlike other museums we contacted, there is no oversight and reporting role, independent of responsibilities for field work and the short term needs of particular collections, to ensure an impartial and consistent approach to collection management and safe-keeping.
Specifying location	In 2003 ICAC recommended that each specimen should be assigned a dedicated and identified physical location in the Museum and that the Museum should use the database system to record the movement of specimens from their assigned physical location to other locations within the Museum. In 2005 the Museum reported that the ICAC recommendation had been 'implemented'.
	We found that collection staff currently search for items by using a mix of electronic records, including those on the EMu system, and paper records which pre-date computers and computer databases. The proportion of registered items on the EMu database ranges from 10 per cent in mineralogy to 100 per cent in ornithology.
	Most items are not able to be located beyond the level of an area or gallery, except by the curator (or subject specialist) and staff.

Different systems are used for determining location in different collections. For example, in the tissue collection and some microscope slide collections, the location is recorded in the database by storage units. In other parts of the collection, a system based on the name, taxonomic relationships, form of the specimen or provenance is utilised.

As they rely on such systems to locate items within a collection, the Museum's collection staff see no need to pin-point, track and record the movement of items within a designated storage area or room.

An analysis of location data in EMu showed that 60 per cent of items had a location specified, 40 per cent had no location specified. Of those that had a location specified, less than 25 per cent had it specified more closely than to a gallery or area level.

Some movements are recorded in the EMu database, or in collection log books. There is no requirement for all movements to be tracked in the EMu database or any requirement that all recorded movements be maintained to provide an 'audit trail' as part of an object's history.

Loans
The Museum has several thousand items on extended loan, as shown below. Some items have been on loan for up to fifty years. Although most items on loan have been on loan for many years, there is no requirement for the physical item to be sighted on a periodic basis.

Exhibit 5 - Length of active loans
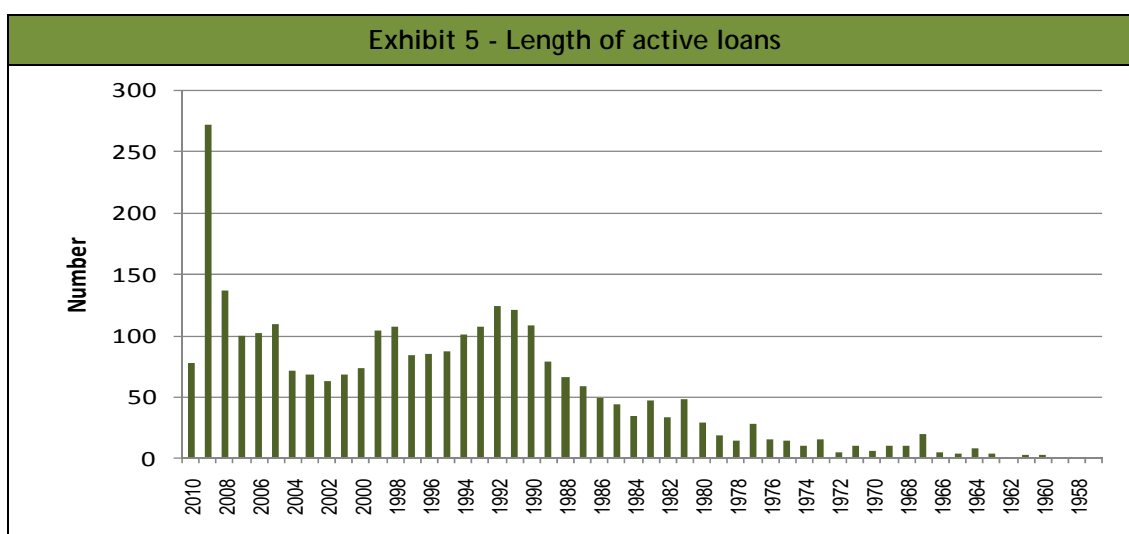
Source: Australian Museum, EMu database, March 2010

Oversight
We found that there is no oversight and reporting role independent of curatorial responsibilities, such as field work and the needs of particular collections.

The Museum's *Collections Manager* positions include both curatorial and collections management responsibilities. Progress with collections management activities can be affected by local priorities, field work and shorter term considerations. We found that other museums had moved to separate these roles to varying degrees to ensure a more impartial, consistent and focused approach to collection records management, inventory control, loans, insurance and storage. The UK's Museum Documentation Standard refers to *a system manager as distinct from a content manager*. We identified specific examples of such roles at National Museums Scotland, Museum Victoria, Australian National Insect Collection, and Powerhouse Museum.

The *State Records Act 1998* requires a public office to assign responsibility for oversight of its records management program to a senior officer, with organisation-wide influence and appropriate strategic and managerial skills to be able to direct the records management program. We found that the Museum had nominated the *Manager, Archives and Records* to satisfy the requirements of the Act, but that that individual is not in a position to exercise that role in relation to the collection records.

Recommendations The Museum needs to clearly identify the location of all objects within the collection, recognising the need for different levels of specificity, ranging from full for high value or high risk items to partial for lower risk items.

The Museum needs to establish an independent oversight and reporting role to ensure an impartial, consistent and more focused approach to collection records management, inventory control, loans, insurance and storage.

Can objects be accessed in a way suited to their use?

Conclusion As with other natural history museums, only a very small proportion of each collection is on public display. This is estimated overall to be less than half of one per cent. The primary use of the collections is for scientific research. The Museum has an extensive legacy of non digital information resources. Development of digital content and images should allow the Museum to greatly increase access to its collections. It needs a specific management policy and plans for retrospective documentation and digitisation.

Key objective A key objective of the Australian Museum is to propagate knowledge about the natural environment of Australia.

As with other natural history museums, only a very small proportion of each collection is on public display. This is estimated overall to be less than half of one per cent. The majority of objects are considered not aesthetically suitable for display, at risk of damage by display, or potentially of risk to the public by being on display. Also, long-term preservation of objects and specimens requires environmental conditions that preclude public display for long periods.

Use of information resources

The primary use of the natural science collections is for scientific research. For example, in 2008 the Museum sent 336 loans comprising 61,199 specimens to scientists around the world. The cultural collections are also used by indigenous Australian and Pacific Islander communities, as well as researchers. Objects from all collections are used in public programs, by artists and photographers, and by teachers and students.

The Museum's information resources are currently paper-based, computer-files, photographs, digital images, video and machine-readable records.

The Museum's archives are estimated to contain around 200,000 photographs, only 8,000 of which are digitised. The library collection includes up to 10,000 rare books, most of which are still recorded only on card catalogue.

We were advised that the Museum is concentrating on increasing access through digitisation, rather than increasing public display, by placing information on the internet, and possibly setting up a multi media centre. For example, almost none of the Pacific collection is on display. The Museum is developing an interactive web-based access tool, the 'Virtual Museum of the Pacific', to improve the access of this collection to Pacific Island community members, researchers, and the public.

The Museum has also been collaborating with NSW Juvenile Justice to help Pacific youth reconnect with their respective cultures. The aim of this program is to provide new positive experiences, achieve meaningful engagement and promote positive changes in behaviour.

The Museum has also been providing data for projects such as *On Line Collections of Australian Museums* and the *Global Biodiversity Information Facility*, where it can be accessed nationally and internationally by scientific users.

Digitisation

In 2003 ICAC recommended that the Museum develop a plan with time frames, accountabilities, resource allocation etc that will progress it towards the following outcomes:

- all specimens for which the Museum is responsible, whether in the collections, on display, in storage or elsewhere should be identified and recorded on the computer database
- each specimen should be assigned a dedicated and identified physical location in the Museum
- each specimen's assigned physical location should be noted on the computer database.

Development of digital content and images should allow the Museum to greatly increase the accountability and the accessibility of its collections. Yet, in common with other museums, it has an extensive legacy of non digital information resources.

In 2005 the Museum reported that the ICAC recommendation had been 'implemented'. Despite this, we have not found specific management policy and plans for retrospective documentation and digitisation.

The Museum has previously sought additional resources to support the task of data basing collections. The Museum is currently working with other cultural agencies in Communities NSW to seek support for digitisation through the Total Asset Management plan.

Premier's memorandum no. 2009-11 *NSW Standard on Digital Recordkeeping* requires public offices to define their digital record requirements and ensure they are captured into a digital recordkeeping system by June 2012.

Recommendation   The Museum needs to develop specific management policy and plans for retrospective documentation and digitisation including:

- its understanding of the backlogs it has
- its timescales for reducing the backlogs
- levels of resources allocated to the task
- the number of objects/records to be addressed
- the standard of documentation required
- progress reviews on a regular basis.

Are the value and significance of objects assessed and periodically updated?

Conclusion   Although the collections are periodically re-valued overall, for accounting and insurance purposes, less than one per cent of individual items have a statement of value or significance. An overall financial value of $767 million was assessed in 2008 based on market value (where it could be assessed), or alternatively the estimated cost of re-collecting items.

Purpose of   Museums may assess the value and significance of objects to:
assessment
- promote knowledge and understanding
- determine value for accounting and insurance purposes
- choose which objects need to be more highly controlled
- justify protection and preservation actions
- determine loss in case of damage or theft.

Important items include rare books, photographs, drawings, gold, diamonds, gems, meteorites, fossils, skeletons of extinct animals, rare or historic specimens and items of special cultural significance.

For accounting and insurance purposes, an overall financial value of $767 million was assessed in 2008 as below for the collections based on market value (where it can be assessed), or alternatively the estimated cost of re-collecting items. The collections are re-valued every five years.

Exhibit 6 – Collections re-valued every 5 years	
Collections	Valuation (2008) $M
Archives	12.4
Research library	32.5
Archaeology/ Anthropology	150.0
Arachnology	14.5
Entomology	295.0
Herpetology	13.0
Ichthyology	53.1
Malacology	104.1
Mammalogy	17.9
Marine invertebrates	35.8
Mineralogy	7.5
Ornithology	17.2
Palaeontology	14.1
Total	767.1

Source: Australian Museum, 2008

Carved emu egg

Examples of individual items assigned a high market value include:

- Thylacine Pouch Young in Spirit ($2,160,000)
- 'Eric' the Opalised Pliosaur ($825,000)
- Diprotodon Optatum Skeleton ($430,000)
- Henbury Iron Meteorite ($123,600)
- John Gould's Bird and Mammal Books ($2,400,000)
- Frank Hurley Photograph Collection ($5,000,000)
- Cook Journals ($80,000).

Individual assessment

Most items are not assigned a value. Less than one per cent of individual items have a statement of value or significance. A statement of significance is a summary of the values, meaning and importance of an item or collection. It is an argument about how and why an item or collection is of value. There is a tab on EMu for value, but it is rarely used.

In an isolated but good example of setting criteria for value and significance, the Museum's disposal committee has determined that the following should be referred to it prior to disposal:

- objects which have a commercial value in excess of $1,000
- anthropological objects, sacred material and ancestral remains
- type material
- specimens of species regarded as threatened or endangered
- objects of exceptional scientific value.

We did not find a consistent set of criteria to facilitate accurate assessment of the significance of each object and collection.

Nor did we find a policy covering the assessment of value, significance and use of objects across the range of collection objects to ensure that:
▪ such information is available as required to support the Museum's needs in prioritising acquisitions, cataloguing, conservation
▪ procedures used for valuation are approved and applied consistently
▪ assessments are updated as and when required.

Recommendations   The Museum needs to adopt criteria with which to establish the value, significance and use of each object (or group of objects) and collection.

The Museum needs to ensure that the value and significance of objects are assessed and periodically updated.

Do regular inventory checks confirm actual holdings?

Conclusion   The Museum conducts limited inventory checks. These provide limited assurance to confirm actual holdings and the information held on those holdings. The Museum needs a more systematic approach, recognising the need for different levels of inventory control to reflect the degree of risk involved. But it needs first to retrospectively undertake an inventory of the existing collection to provide a baseline for future inventory control.

Regular checks   Regular inventory checks are important in helping to deter and aid in the early detection of loss or theft of the collection.

The Museum's *Collections Management Policy* requires each collection manager to conduct quarterly inventory checks of 200 'high priority' objects. The aim of the inventory is 'to sight' the specimen or to establish where it is. The part of the collection to be checked is selected by (but not witnessed by) a person other than the collection manager or staff working in the collection. There is no reverse check to see if the physical inventory is correctly recorded in EMu.

Exhibit 7 - Storage of fish in small jars

Source: Australian Museum

Additional checks

Additional checks are undertaken during the course of a year, for example in the course of locating items to issue loans or when collections are re-organised. Analysis of EMu data indicates more than 24,000 checks in 2009, with a little over 300 items reported missing, as shown below.

Exhibit 8 – Analysis of items checked and missing		
Collection	Number checked 2009	Number found missing 2009
Anthropology and Archaeology	2,861	37
Arachnology	874	0
Entomology	790	0
Herpetology	4,322	0
Ichthyology	547	2
Malacology	1,455	0
Mammalogy	2,029	38
Marine invertebrates	2,128	224
Mineralogy	348	0
Ornithology	4,696	0
Palaeontology	4,673	31
Total	24,723	332

Source: Australian Museum, EMu database, March 2010

In an overall sense, the Museum each year checks only one in every thousand items and has a detected loss rate of around one percent. Missing items have included animal skulls, skeletons, a stuffed lion, birds and rare books. It is likely that much of this arises as a result of errors arising from practices and relocations of collections over the last 140 years.

Exhibit 9 - Storage of fish in large jars

Source: Australian Museum

Specifying requirements to counter risks

We did not find policy and procedures outlining varying inventory control requirements of objects in each collection including:

- different levels of inventory control, ranging from full for high value or high risk items to partial (but statistically representative) for lower risk items
- frequency, nature and extent of inventory checks for each collection based on size, value, significance, use and level of risk as above
- remedial action to be taken following discovery of missing objects, wrongly or inadequately documented objects, or undocumented objects
- required security measures for the inventory, such as ensuring checks are conducted or witnessed by a person not responsible for their custody or record-keeping.

Establishing a baseline

Until the collections are thoroughly checked, the Museum cannot tell if items now reported as unable to be located were lost recently, or at any time over the last 140 years. If it does not know what it has, how does it know what it does not have? We did not find any project to retrospectively undertake an inventory of the existing collection to provide a baseline for future inventory control and future assurance against the risks of loss and theft. Such a project would need to include:

- the number of specimens and objects to be checked
- whether the collection can be grouped for high-level inventory
- time, resource and funding requirements.

Nor did we find evaluation of the use of barcodes, barcode readers and hand-held computers for more efficient checking of parts of the museum, as used by some other museums. Such action had been recommended by ICAC in 2003 and was reported as 'investigated' by the Museum in 2005.

Recommendations

The Museum needs to more clearly define the inventory control requirements of objects in each collection, including objects on loan, recognising the need for different levels of inventory control, ranging from full for high value or high risk items to partial (but statistically representative) for lower risk items, and the need to identify triggers that warrant additional checks.

The Museum needs to develop and manage a project to retrospectively undertake an inventory of the existing collection to provide a baseline for future inventory control and future assurance against the risks of loss and theft.

The Museum needs to identify and evaluate ways of making inventory checking more efficient – such as by use of bar-coding and hand-held computers, and by the assistance of volunteers.

The Museum needs to introduce spot checks by external parties, such as auditors, to ensure a degree of independence in the inventory checking process.

Is the condition of holdings known, assessed and periodically updated?

Conclusion

Most items do not have their condition recorded. A conservation unit monitors the environmental conditions of different storage areas. We did not find identification and assessment of high value or high significance objects at risk from their condition or surrounding environment.

Condition assessment

An assessment would consider the potential risk to the object from its present location (theft, flood, fire, vandalism, inappropriate environmental conditions). It may lead to plans for minimising the risk, such as by conservation, additional protection, improved climate control or relocation.

Condition checks

Information on condition does not appear to be accessible by the object number. There is a condition tab in EMu, but it seems to be rarely used. The bulk of items have no condition record. Categories of condition risk do not appear to have been established. There are no requirements as to the frequency of condition checks or standard of checking for objects in different categories of risk. There has been no systematic assessment of objects at risk from their condition or surrounding environment.

The Museum considers that it is more cost-effective to manage the risks for a whole storage area. For the most part it relies on environmental and pest monitoring of storage space to minimise the risks to the whole collection, rather than isolating individual sections.

A conservation unit monitors the environmental conditions of different storage areas. A database contains records of past conservation efforts, particularly in relation to the anthropology collection. The conservation unit intends to survey the collections next year to find out what has been damaged or needs work, rather than just being driven by day to day needs.

While we did not expect the Museum to assess and record the condition of every item, we did expect that it would routinely assess items or groups of items based on risk. Some sections of collections have been given special protection based on their importance. These include the Cook Collection in Anthropology and type specimens in some natural science collections. However, we also observed many items held in rented off-site storage in poor conditions with no climate control.

We did not find identification and assessment of high value or high significance objects at risk from their condition or surrounding environment including:

- potential risk to the object from its present location (theft, flood, fire, vandalism, inappropriate environmental conditions)
- potential risk to the object from its present condition including building condition and maintenance
- monitoring of risk by sampling to minimise risks.

Recommendation

The Museum needs to regularly audit the condition of high value or high significance objects at risk from their surrounding environment.

Appendix

About the audit

Audit Objective   The objective of the audit is to assess how well the Australian Museum knows its collections.

Audit Criteria   In reaching our opinion against the audit objective, we used the following audit criteria (the 'what should be') to judge performance. We based these standards on our research of current thinking and guidance on better practice. They have been discussed and agreed with those we are auditing:

- are collections are defined and classified?
- are objects accessioned and catalogued in timely fashion?
- will a search accurately show holdings and locations?
- can objects be accessed in a way suited to their use?
- are the value and significance of objects assessed and periodically updated?
- do regular inventory checks confirm actual holdings?
- is the condition of holdings is known, assessed and periodically updated?

Audit scope   The audit focused on the Australian Museum's information on its natural science and cultural collections. It included archives and the research library as part of the information system, although each has its own historical collections.

The audit did not:

- review other aspects of collection management, including acquisitions and disposals policies and procedures
- duplicate reviews already conducted in relation to this topic (as, for example, by ICAC)
- question the merits of Government policy objectives.

Audit approach   We acquired subject matter expertise through:

- interviews and examination of relevant documents including guidelines, reports, studies, reviews relating to museum information systems and collection management
- discussions with relevant staff of Australian Museum
- discussions with representatives of key stakeholders
- comparisons where appropriate with other states and countries
- government and best practice guidelines relevant to the above.

Audit selection   We use a strategic approach to selecting performance audits which balances our performance audit program to reflect issues of interest to Parliament and the community. Details of our approach to selecting topics and our forward program are available on our website.

Audit methodology	Our performance audit methodology is designed to satisfy Australian Standards on Assurance Engagements, ASAE3500 on performance engagements, and to reflect current thinking on performance auditing practices.
	Audits are produced under the Office's quality control policies and practices, including a quality management system certified to International Standard ISO 9001. Our processes have also been designed to comply with the *Public Finance and Audit Act 1983*.
Acknowledgements	We gratefully acknowledge the cooperation and assistance provided by the Australian Museum. In particular we wish to thank our liaison officers and staff who participated in interviews and provided material relevant to the audit.
	We were also assisted by discussions with a number of government agencies and external bodies including the Powerhouse Museum, Museum Victoria, National Museums Scotland, CSIRO National Insect Collection, the Independent Commission Against Corruption, State Records NSW, and the NSW Treasury. We also spoke to the NSW Public Sector Association.
Audit team	Our team for the performance audit was led by Chris Yates. Sean Crumlin provided direction and quality assurance.
Audit cost	Including staff costs, printing costs and overheads, the estimated cost of the audit is $102,000.

Performance Audits by the
Audit Office of New South Wales

Performance Auditing

What are performance audits?

Performance audits determine whether an agency is carrying out its activities effectively, and doing so economically and efficiently and in compliance with all relevant laws.

Performance audits may review a government program, all or part of a government agency or consider particular issues which affect the whole public sector.

Where appropriate, performance audits make recommendations for improvements.

If you wish to find out what performance audits are currently in progress, visit our website at www.audit.nsw.gov.au.

Why do we conduct performance audits?

Performance audits provide independent assurance to Parliament and the public that government funds are being spent efficiently and effectively, and in accordance with the law.

Performance audits seek to improve the efficiency and effectiveness of government agencies so that the community receives value for money from government services.

Performance audits also assist the accountability process by holding managers to account for agency performance.

What are the phases in performance auditing?

Performance audits have three key phases: planning, fieldwork and report writing.

During the planning phase, the audit team will develop audit criteria and define the audit field work.

At the completion of field work we will meet with agency management to discuss all significant matters arising out of the audit. Following this, we will prepare a draft performance audit report.

We meet with agency management to check that facts presented in the report are accurate and that recommendations are practical and appropriate. Following this, a formal draft report is provided to the CEO for comment. The relevant Minister is also provided with a copy of the final report. The final report, which is tabled in Parliament, includes any comment made by the CEO on the conclusion and the recommendations of the audit.

Depending on the scope, performance audits can take several months to complete.

Copies of our performance audit reports can be obtained from our website or by contacting our Office.

How do we measure an agency's performance?

During the planning phase, the team develops the audit criteria. These are standards of performance against which the agency or program is assessed. Criteria may be based on best practice, government targets, benchmarks, or published guidelines.

Do we check to see if recommendations have been implemented?

Agencies are requested to report actions taken against each recommendation in their annual report so that we can monitor progress.

The Public Accounts Committee (PAC) may conduct reviews or hold inquiries into matters raised in performance audit reports. These inquiries are usually held 12 months after the report is tabled.

Who audits the auditors?

Our performance audits are subject to internal and external quality reviews against relevant Australian and international standards. This includes ongoing independent certification of our ISO 9001 quality management system.

The PAC is also responsible for overseeing the activities of the Audit Office and conducts a review of our operations every three years.

Who pays for performance audits?

No fee is charged for performance audits. Our performance audit services are funded by the NSW Parliament and from internal sources.

Further information

Further information can be obtained from our website www.audit.nsw.gov.au or by contacting us on 9275 7277.

Performance Audit Reports

No	Agency or Issues Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
203	Australian Museum	*Knowing the Collections*	September 2010
202	Industry & Investment NSW Homebush Motor Racing Authority Events NSW	*Government Investment in V8 Supercar Races at Sydney Olympic Park*	23June 2010
201	Department of Premier and Cabinet	*Severance Payments to Special Temporary Employees*	16 June 2010
200	Department of Human Services - Ageing, Disability and Home Care	*Access to Overnight Centre-Based Disability Respite*	5 May 2010
199	Department of Premier and Cabinet NSW Treasury WorkCover NSW	*Injury Management in the NSW Public Sector*	31 March 2010
198	NSW Transport and Infrastructure	*Improving the Performance of Metropolitan Bus Services*	10 March 2010
197	Roads and Traffic Authority of NSW	*Improving Road Safety: School Zones*	25 February 2010
196	NSW Commission for Children and Young People	*Working with Children Check*	24 February 2010
195	NSW Police Force NSW Department of Health	*Managing Forensic Analysis – Fingerprints and DNA*	10 February 2010
194	Department of Premier and Cabinet Department of Services, Technology and Administration NSW Treasury	*Government Advertising*	10 December 2009
193	Roads and Traffic Authority of NSW	*Handback of the M4 Tollway*	27 October 2009
192	Department of Services, Technology and Administration	*Government Licensing Project*	7 October 2009
191	Land and Property Management Authority Maritime Authority of NSW	*Administering Domestic Waterfront Tenancies*	23 September 2009
190	Department of Environment, Climate Change and Water NSW Environmental Trust	*Environmental Grants Administration*	26 August 2009
189	NSW Attorney General's Department NSW Department of Health NSW Police Force	*Helping Aboriginal Defendants through MERIT*	5 August 2009
188	NSW Department of Health	*Tackling Cancer with Radiotherapy*	23 June 2009
187	Roads and Traffic Authority of NSW	*Improving Road Safety - Heavy Vehicles*	13 May 2009
186	Grants	*Grants Administration*	6 May 2009
185	Forests NSW	*Sustaining Native Forest Operations*	29 April 2009

No	Agency or Issues Examined	Title of Performance Audit Report or Publication	Date Tabled in Parliament or Published
184	NSW Police Force	*Managing Injured Police*	10 December 2008
183	Department of Education and Training	*Improving Literacy and Numeracy in NSW Public Schools*	22 October 2008
182	Department of Health	*Delivering Health Care out of Hospitals*	24 September 2008
181	Department of Environment and Climate Change	*Recycling and Reuse of Waste in the NSW Public Sector*	11 June 2008
180	Follow-up of 2003 Performance Audit	*Protecting Our Rivers*	21 May 2008
179	NSW Office of Liquor, Gaming and Racing; NSW Police Force	*Working with Hotels and Clubs to reduce alcohol-related crime*	23 April 2008
178	Greyhound and Harness Racing Regulatory Authority	*Managing the Amalgamation of the Greyhound and Harness Racing Regulatory Authority*	3 April 2008
177	Office of the Director of Public Prosecutions	*Efficiency of the Office of the Director of Public Prosecutions*	26 March 2008
176*	Better Practice Guide	*Implementing Successful Amalgamations*	5 March 2008
175	Department of Commerce Department of Primary Industries	*Managing Departmental Amalgamations*	5 March 2008
174	Department of Education and Training	*Ageing workforce – Teachers*	13 February 2008
173	NSW Police Force	*Police Rostering*	5 December 2007
172	Department of Primary Industries	*Improving Efficiency of Irrigation Water Use on Farms*	21 November 2007
171	Department of Premier and Cabinet Department of Commerce	*Government Advertising*	29 August 2007
170	RailCorp	*Signal Failures on the Metropolitan Rail Network*	15 August 2007
169	NSW Police Force	*Dealing with Household Burglaries*	27 June 2007
168	Ministry of Transport	*Connecting with Public Transport*	6 June 2007

* Better Practice Guides

Performance audits on our website

A list of performance audits tabled or published since March 1997, as well as those currently in progress, can be found on our website www.audit.nsw.gov.au.

If you have any problems accessing these reports, or are seeking older reports, please contact our Office Services Manager on (02) 9275 7116.