concern at the core

Managing Smithsonian Collections

Executive Summary

April 2005

office of policy and analysis study team

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acronyms

AAA	Archives of American Art (Smithsonian Institution)
AHHP	Architectural History and Historic Preservation (Smithsonian Institution)
AM/CAAHC	Anacostia Museum/Center for African American History and Culture (Smithsonian Institution)
CFCH	Center for Folklife and Cultural Heritage (Smithsonian Institution)
C-HNDM	Cooper-Hewitt, National Design Museum (Smithsonian Institution)
CIS	Collections information system
FSG	Freer Gallery of Art and Arthur M. Sackler Gallery
FTE	Full-time equivalent
FY	Fiscal year
HMSG	Hirshhorn Museum and Sculpture Garden (Smithsonian Institution)
HSD	Horticulture Services Division (Office of Facilities Engineering and Operations, Smithsonian Institution)
HumRRO	Human Resources Research Organization
NASM	National Air and Space Museum (Smithsonian Institution)
NCP	National Collections Program (Smithsonian Institution Archives, Smithsonian Institution)
NMAfA	National Museum of African Art (Smithsonian Institution)
NMAH	National Museum of American History (Smithsonian Institution)
NMAI	National Museum of the American Indian (Smithsonian Institution)
NMNH	National Museum of Natural History (Smithsonian Institution)
NPG	National Portrait Gallery (Smithsonian Institution)
NPM	National Postal Museum (Smithsonian Institution)
NZP	National Zoological Park (Smithsonian Institution)
OCIO	Office of the Chief Information Officer (Smithsonian Institution)
OP&A	Office of Policy and Analysis (Office of the Secretary, Smithsonian Institution)
SAAM	Smithsonian American Art Museum (Smithsonian Institution)
SCMRE	Smithsonian Center for Materials Research and Education (Smithsonian Institution)
SD 600	Smithsonian Directive 600, Collections Management
SIA	Smithsonian Institution Archives
SIL	Smithsonian Institution Libraries

collections management terms and definitions

The following terms are used in the Executive Summary as defined here. These definitions are generally consistent with those found in Smithsonian Directive 600, Collections Management (SD 600).

ACCESS — the ability of the general public, scholars, and Smithsonian staff to use Smithsonian collections and related information.

- Physical access denotes the ability to have direct contact with collections.
- Intellectual access means the ability to obtain information about collection items, either onsite or electronically.

ACCESSION COLLECTION — a collection category that contains items that a unit legally owns, has formally accessioned, and intends to retain for an indefinite period of time.

ACCESSIONING — the formal process for recording the addition of an item or group of items to a unit's accession collections.

ACCOUNTABILITY — formal responsibility for ensuring that collections management is carried out consistent with Smithsonian and professional policies, practices, and standards and that performance objectives are accomplished.

ACQUISITION — (a) the act of gaining legal title to a collection item or group of items that may subsequently be accessioned or designated for non-accession status (such as educational, study, or consumptive use); or (b) an item that a collecting unit has obtained and added to its collections.

ARCHIVES — (a) the noncurrent records of an organization or person, preserved because of their continuing value; or (b) the office responsible for acquiring, preserving, and providing access to such records.

CATALOGUE — a set of records that identifies, names, classifies, numbers, and describes each item (or sometimes group of items, such as a lot) in a unit's collections. Catalogue records contain enhanced (enriched) information (such as social, cultural, and historical context, provenance, scientific characteristics, and significance) that goes beyond the documentation in registrarial records (see also Registration).

CATALOGUING — a methodical classification of collection items, usually with descriptive detail, that systematically integrates intrinsic physical and museum-generated transaction information with cultural, historic, and scientific information.

CIS — see Collections information system.

COLLECTING PLAN — a framework for guiding acquisition and disposal decisions. Typically the plan addresses factors such as the desired size and composition of collections relative to a collecting unit's mission, resources, and use priorities.

COLLECTING UNIT — an entity that acquires and manages collections. Per SD 600: a Smithsonian museum, archive, library, or research office that has been specifically delegated the authority to acquire and manage collections.

COLLECTION — a group of items with a common base of association (such as geography, theme, donor, or culture).

COLLECTIONS CARE — activities intended to protect the long-term integrity of collection holdings and their associated documentation. Typical activities include identifying, recording, and locating collection items; storing them in safe environments; conserving or restoring them when necessary; ensuring safe and responsible use; and routinely assessing their condition. See also Conservation, Condition assessment, Inventory, Maintenance, Preservation, and Profiling.

COLLECTIONS CARE STAFF — personnel responsible for Collections care. Examples of collections care job titles are archivist, librarian, conservator, registrar, museum registration specialist, museum/library/archives specialist (conservation), museum/library/archives technician (conservation), and museum technician (general).

COLLECTIONS DOCUMENTATION — see Collections information.

COLLECTIONS INFORMATION — documentation of the intellectual significance, physical characteristics, and legal status of collection items and the collections management processes and transactions they undergo. Documentation of collections is an ongoing process, with information residing in a combination of manual files, electronic information systems, and media formats. In this report, the terms "collections information" and "collections documentation" are used interchangeably, unlike in SD 600, which gives them distinct definitions.

There are two broad categories of collections information:

- Registrarial, which encompasses administrative information on both owned collection items and items temporarily in a unit's custody (see Registration).

- Catalogue, which encompasses information that goes beyond registrarial documentation (see Catalogue).

COLLECTIONS INFORMATION SYSTEM (CIS) — a central, computerized system (including hardware, software, and databases) for maintaining organized information on the collections of one or more collecting units for purposes of collections management. The system also enables access to this information by Smithsonian staff, outside scholars, and/or the public.

COLLECTIONS MANAGEMENT — the deliberate acquisition, maintenance, preservation, documentation, provision of access, and disposal of collections. Collections management includes the universe of collections-specific functions, ranging from routine physical care through development of high-level collections policy.

COLLECTIONS MANAGEMENT PLAN — an operational document that sets forth how a unit will carry out its collections management policy and the collections-related elements of its strategic plan. The plan covers the universe of collections-specific functions and presents short- and long-term strategies, priorities, initiatives, performance targets and measures, and timelines.

COLLECTIONS MANAGEMENT POLICY — a detailed written statement that identifies the purpose, goals, and collecting scope of a collecting unit, explains how these influence the unit's collections activities, and outlines standards of accountability for care, access, and other functions.

COLLECTIONS RESEARCH — a process through which items are studied, identified, and organized according to discipline-specific principles. The objectives of this process are to verify, augment, and enrich (enhance) existing documentation for these items, as well as to increase knowledge within a discipline more generally. See also Cataloguing.

COLLECTIONS RESEARCH STAFF — personnel with primary responsibility for documenting collections, as well as performing some supervisory functions. Examples of collections research job titles are archaeologist, museum curator, botanist, zoologist, museum specialist (anthropology), museum technician (anthropology), and museum specialist (general).

CONDITION ASSESSMENT — a systematic, regular determination of the physical state of collection items or groups of items, including the nature and extent of damage, deterioration, and risk conditions.

CONSERVATION — an examination of the condition of items, assessment of treatment options, provision of physical and chemical treatment, and complete documentation of such activities (see also Collections care).

COST RECOVERY — a fee established by a service provider that is intended to recoup all or part of the costs of providing a service, without generating a profit. The costs in question can be direct (for example, postage fees) or indirect (for example, labor costs).

DEACCESSIONING — a process used to formally approve and record the removal of a collection item or group of items from a unit's accession collections (see also Accession collection).

DIGITAL RECORDS — documentation stored on and retrievable only through electronic media. Synonymous with electronic records.

DIGITIZATION — the process of capturing both text and image information on collections in electronic form.

DISPOSAL — the process of physically removing deaccessioned or other non-accession collection items from a collecting unit, often accompanied by transfer of title to another entity.

ELECTRONIC RECORDS — see Digital records.

INVENTORY — (a) an itemized listing of a unit's collection items, groups, or lots and their current physical location; or (b) the process of developing and maintaining such an itemized listing. An inventory must provide sufficient information to permit a unit to maintain physical control over its collections. Per SD 600, the minimum inventory information that should be available for each item or group of items is an identifier number, brief identifying description, and current physical location.

ITEM(s) — any object, document, or other material acquired for accession, non-accession, supplementary, or study collections. ("Item" is also used as a unit of measure for some types of archival collections.)

LOAN — the temporary physical transfer of an item(s) for an agreed purpose and subject to specific conditions relating to care and use, all of which are spelled out in a loan agreement.

MAINTENANCE — the routine actions that support collection preservation and access, such as monitoring storage and exhibition conditions, organizing a collection in storage, and performing general housekeeping.

OBJECT(s) — three-dimensional items (such as biological specimens, historical artifacts, and works of art) that are part of accession and non-accession collections.

OPPORTUNITY COST — the implicit cost (opportunities or benefits forgone) that result from a decision to pursue a particular course of action rather than an alternative course of action.

PLAN — a formulated or organized method of accomplishing a goal or completing a task.

POLICY — a principle or set of principles that establishes directions, guides decisions, and provides a framework for plans and related actions.

PORTAL — a gateway or point of entry that provides access to databases at multiple collecting units (see also Collections information system).

PRESERVATION — protection and stabilization of collections and associated information through a coordinated set of activities aimed at minimizing chemical, physical, and biological deterioration, and at preventing loss of intellectual, aesthetic, and monetary value.

PROFILING — a systematic evaluation of a unit's collections using a set of variables such as condition, arrangement, and level of documentation. Profiling yields quantifiable measures of the status of collections care, documentation, and access.

PUBLIC TRUST — a fiduciary relationship whereby a trustee holds property that must be administered for the benefit of the public. In the case of collections at the Smithsonian, the trustees are either the Smithsonian Institution or the individual collecting units.

REGISTRATION — (a) the process of developing and maintaining an immediate and permanent means of identifying, locating, and tracking the transactions and movements of an item for which a collecting unit is responsible; or (b) the logical and systematic organization of documentation and provision of access to that information. Examples of registration information are acquisition details, legal status, brief physical description sufficient for identification, location, condition, and processes and transactions undergone since acquisition.

SIGNIFICANCE ASSESSMENT — determination of the relative importance of collection items or groups of items to a unit's mission and/or programs. The assessment can be conducted independently or as a variable in Profiling.

SPECIMEN — a biological organism (or part of one) or naturally occurring material.

STANDARD — a measure agreed upon within the museum, library, or archive profession to which collecting units are expected to conform, and by which professional practice can be assessed.

STEWARDSHIP — sound and responsible management of collections entrusted to a collecting unit's care. Collections stewardship is carried out through the systematic development, implementation, and review of policies, plans, procedures, and practices to meet the goals and purposes of the collecting unit and its collections.

THESAURUS — a list of common subject headings, terms, words, or descriptors that collecting units use in their electronic databases to facilitate searches by users across multiple databases.

INTRODUCTION

The museums, archives, libraries, and research facilities of the Smithsonian Institution hold one of the world's largest collections of artifacts, specimens, documents, and other materials.

According to Smithsonian National Collections Program (NCP) figures for fiscal year (FY) 2002,[1] museum collections held over 143.5 million objects; archive collections included about 164 million items and almost 7 million feet of film; and library collections comprised almost 1.5 million volumes. Among the Smithsonian's collections are treasures of inestimable value to science, culture, and the American people: unique biological type specimens, the Hope diamond, original manuscripts by Isaac Newton and Albert Einstein, works of art spanning modern West to ancient East, the Apollo 11 command module, the 1814 Star-Spangled Banner flag, the Wright Flyer — the list could go on and on.

Stewardship of these collections is arguably the Smithsonian's most fundamental responsibility. In the fall of 2000, Secretary Lawrence Small asked the Office of Policy and Analysis (OP&A) to conduct a study of Smithsonian collections. The purpose was to gather information, reach conclusions, and offer recommendations to support sound collections policy and management in several areas, including:

- The role of collections at a "national" institution such as the Smithsonian
- Use and access
- Collections care
- Acquisition and disposal
- Resources.

The study team also looked at other aspects of collections management such as planning and accountability.

Following the research phase of this study, completed in the summer of 2003, the OP&A study team looked for common issues that appeared across much of the Institution. The resulting conclusions and recommendations are necessarily broad and do not apply equally to every collecting unit at the Smithsonian.[2] However, they do offer ideas that all units, regardless of the current state of their collections, can use to assess and improve their collections management policies, planning, and processes.

[1] Units designated as collecting units by NCP are the following: Anacostia Museum/Center for African American History and Culture (AM/CAAHC); Architectural History and Historic Preservation (AHHP); Archives of American Art (AAA); Center for Folklife and Cultural Heritage (CFCH), archives division; Cooper-Hewitt, National Design Museum (C-HNDM); Freer Gallery of Art and Arthur M. Sackler Gallery (FSG); Hirshhorn Museum and Sculpture Garden (HMSG); Horticulture Services Division (HSD); National Air and Space Museum (NASM); National Museum of African Art (NMAfA); National Museum of American History (NMAH); National Museum of the American Indian (NMAI); National Museum of Natural History (NMNH); National Portrait Gallery (NPG); National Postal Museum (NPM); National Zoological Park (NZP); Smithsonian American Art Museum (SAAM); Smithsonian Institution Archives (SIA); and Smithsonian Institution Libraries (SIL). Several other units hold collections "unofficially."

[2] In addition, there have been developments since the completion of the research that are not reflected in this report.

NATIONAL COLLECTIONS

For Smithsonian collecting units, identifying their core national purpose can both provide a basis for assessing the appropriateness of current collections, and guide future collecting.

Yet there is surprisingly little clarity, either within the Smithsonian or the wider museum community, about what a "national" role is or entails.

In the course of the OP&A study team's research, three dominant conceptions of a "national museum" emerged, each associated with a different concept of "national collections" (based on Wilson 1984, 54-58):

- Encyclopedic national museums are international in scope. They hold the great public collections that offer a sweeping view of humanity's cultural achievements and scientific knowledge. Examples of these museums include the British Museum, State Hermitage Museum, and Louvre.

- National identity museums are explicitly national in scope. They hold collections that symbolically represent the history, culture, and values of a particular nation. Examples include the Hungarian National Museum, National Museum of Helsinki, and National Museum of Ireland.

- Subject specialist national museums serve an international audience, but have a narrower scope than encyclopedic museums. They hold outstanding collections in specific areas of the arts, sciences, or culture. Examples are the National Archaeological Museum in Athens, National Museum of Ethnology in Osaka, and Victoria and Albert Museum in London. An important function of such museums is to support high-level scholarship.

Awareness of how each Smithsonian collecting unit fits into such a schema can provide broad guidance for such tasks as developing collections, understanding core audiences, and prioritizing uses. The OP&A study team's suggestions for classifying Smithsonian collecting units are presented in Table 1. In part, the classifications are based on the units' own mission statements and interviews with senior management at each unit.

The breadth and depth of Smithsonian collections in their entirety make the Institution as a whole one of the world's great encyclopedic national collecting units. However, each collecting unit must articulate its own core national purpose within the larger system. Some units do appear to have an understanding of their national purpose, and manage their collections accordingly. But others follow a less clear path — whether because they are uncertain as to their primary role, or because they are under pressure by stakeholders to move in multiple directions.

Table 1. Smithsonian Collecting Units Classified by Type

Encyclopedic	National identity	Subject specialist
Smithsonian Institution	AM/CAAHC	AAA
NMNH	NMAH	C-HNDM
NZP	NMAI	FSG
SIL	NPG	HMSG
	SAAM	NASM
		NMAfA
		NPM
		SIA

Source: OP&A study team analysis.

USE
AND ACCESS

In general, collections are used in four principal ways:

1. Display and exhibition
2. Research and reference
3. Education and interaction
4. Symbolism

At the Smithsonian, the relative importance of these uses varies, depending on the collecting unit. In line with differences in the primary uses of their collections, units have different user profiles. For example, SIL collections mainly serve internal staff; NMNH collections are oriented toward the global scientific research community; and other units' collections are oriented to the visiting public.

Although collecting units have implicitly taken different positions with respect to the principal uses of their collections, most have not developed explicit statements of priorities. The OP&A study team sees this as a matter for concern, because when priorities are not spelled out, scarce resources may be misallocated, and there is no formal basis for resolving conflicts (such as the tradeoff between lending and preservation). Is it appropriate, for example, for a collecting unit with a predominantly research mission to shift substantial resources from collections care and research to public programs?

The identification of priorities among uses also affects how units develop their collections. For example, in a reference collection, practically anything that can be identified within the chosen subject area is a candidate for inclusion. By contrast, if exhibition or symbolism is the primary use for a unit's collections, acquisitions can be more selective, focusing on obtaining a few of the finest or most representative items.

Use and access are inextricably related: the primary uses of a collection determine the appropriate means of providing access. Providing access can be very expensive — particularly the space to display collections, the intellectual enhancement of collection records, and the provision of effective electronic access. Thus, careful planning is essential, taking into account the units' missions and user profiles and the personnel, storage, and digital resources available for
the job.

The digitization of collections and the creation of central electronic collections information systems (CISs) are critical steps toward wider, more user-friendly access, as well as improved collections management, and merit particular attention. The following points should be noted in this connection:

- The scale of potential digitization is vast, and the process of digitization is still in its early stages at many units. In some cases the units have approached digitization unsystematically; they have not developed formal plans with clear goals and priorities, tied to users' needs. To digitize without such plans
  risks squandering resources on tasks of limited relevance, while more important ones go unmet. Some Smithsonian units have made progress in this direction — such as NMNH, where management has assigned unambiguous priority to type collections.[3] All units would benefit from *prioritization* concerning which items to digitize, as well as practical guidelines on what information to include in digital records.

- Electronic access to collections remains limited at the Institutional level and uneven across units. Overall, electronic records exist for less than one fifth of the Institution's collections, and less than one tenth are electronically accessible to the public. While some units — particularly the art museums — have made great progress in digitizing their collections, others remain far from the goal of a full set of electronic records with basic, up-to-date information on what is in their collections. Further, progress in the development of a comprehensive, well-functioning CIS has been uneven across units. Indeed, at the time the research phase of this study was completed, digitization at one unit (NMAH) had practically come to a halt, and the unit was contemplating shutting down its CIS because of fears the system was becoming corrupted in the absence of adequate maintenance.

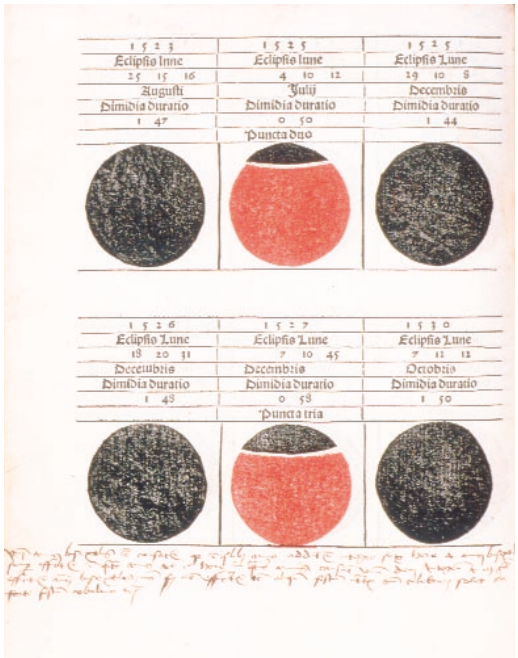
- Online users of collections information are ill-served by the lack of a single point of entry, or portal, through which to access information across all Smithsonian collections. Electronic access via the Web has been complicated by the confusing welter of websites created by individual units and offices.[4]

- Digitization and CIS development have had trouble competing for resources with other activities, such as exhibitions, education, and research. If unit and central leadership do not make a clear commitment to pushing digitization and central CISs forward, resources will continue to go to more visible, longer established, or better articulated priorities, and progress is likely to be slow.

[3] Type collections contain specimens originally used to define species.

[4] Since completion of the research for this study, the Office of the Chief Information Officer issued an Institution-wide online strategy intended in part to address this matter.

❖ Although each unit must ultimately fashion its own digitization plan, opportunities exist for collaboration and leveraging of resources across units and with outside entities. The units have generally not taken advantage of these opportunities. Because digitization and electronic access can be very expensive, the units may be forgoing large benefits.



An important first step is for the central administration to clarify, through policy and the Smithsonian's strategic and annual performance plans, where digitization and CIS development fall on the list of Institutional priorities. The central administration also needs to provide guidance on the goals of digitization, including what sort of online presence the Smithsonian should have. Not only are the units more likely to develop and adhere to plans in these areas if directed to do so and held accountable for results, but the absence of clear guidance from the top may be interpreted as suggesting that digitization and CIS development are low priorities. Because of the importance of digitization and CIS development for both access and general collections management, the OP&A study team favors increasing the emphasis on them at this time, even if doing so requires some units to shift resources from other programs until they can demonstrate substantial progress in these areas.

The OP&A study team also believes that a single portal that provides access to collections information across the Smithsonian should be a priority, because it would significantly enhance access by all types of users. Aside from the technological requirements, implementing a single portal will require development and use by all units of a common Institution-wide thesaurus to facilitate database searches across all Smithsonian collections databases.

COLLECTIONS CARE

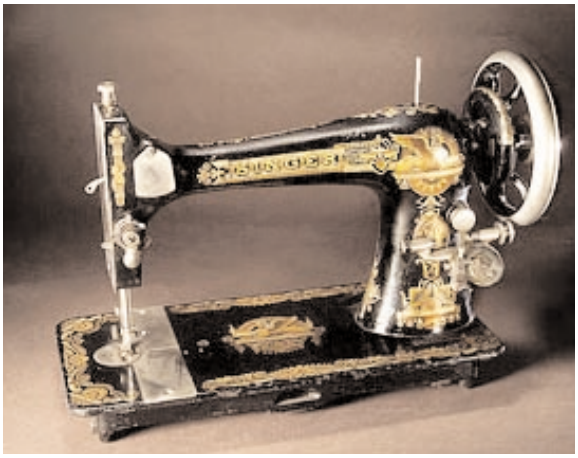
Proper care of collections and associated documentation is fundamentally important to their health, longevity, and usefulness.

However, collections care is also relatively invisible. Because of this invisibility, the OP&A study team saw evidence that a faulty rationalization has taken hold in some units: it is acceptable to defer collections care activities in favor of activities with greater public visibility, because it will always be possible to return to the deferred tasks later. This rationalization appears plausible because skipping routine inventories or condition assessments, storing collections more densely, and generally cutting corners on collections care typically have no immediate negative effects and do not result in public outcry. In reality, however, the opportunity to return to deferred tasks rarely arises, and eventually the deferred work reaches a level that is overwhelming. Moreover, the longer collections care falls below optimal levels, the more difficult it is to know what the effects are. For example, if a unit does not have a complete inventory or has not carried out a condition assessment for a decade, it has no objective way of knowing what is happening to its collections.

At the Smithsonian, the state of collections care is mixed. Within the broad parameters of Smithsonian Directive 600 (SD 600) — the principal policy guiding collections management — units are free to set their own standards and allocate resources. The SD 600 Implementation Manual, in draft form at the time the research phase of this study was completed, is comprehensive and meticulous in its listing of issues to be considered, but it, too, offers the units wide latitude in interpretation. Thus, the level of attention devoted to collections care largely comes down to the priorities of unit directors.

The OP&A study team sees a need for NCP, working with representatives of the units, to clearly define minimum standards of care for compliance with SD 600 for particular types of collections, and for NCP to monitor whether the units are maintaining those standards. Those standards would usefully include parameters for inventories, profiling, and significance assessments.[5] Further, if a unit cannot maintain a collection at the minimum standard, the study team believes it is appropriate to ask whether that collection should be transferred to an organization better able to care for it.

In general, improving the state of collections care needs to start with full knowledge of what is in the collections — a complete inventory — and a system of triage whereby a unit can focus resources on areas of greatest urgency or importance. The Smithsonian is currently participating in the first Heritage Health Index survey, sponsored by Heritage Preservation and the Institute for Museum and Library Services. Intended to gather baseline data on the state of museum, library, archive, and historical society collections nationwide, the survey promises to provide useful information about the condition and preservation needs of Smithsonian collections, relative to similar collections at other organizations.



[5] "Profiling" refers to the systematic evaluation of a unit's collections using a set of variables such as condition, arrangement, level of documentation, and state of processing. It yields quantifiable measures of collections care needs, documentation status, and accessibility, on the basis of which resource allocation priorities may be set. A significance assessment — a determination of the relative importance of collection items or groups of items to a unit's mission and/or programs — may be incorporated into a profiling effort.

Profiling is a valuable tool that some Smithsonian units have used to assess the state of their collections and identify which objects are most in need of resources. Even where resources are too tight to permit profiling all of a unit's collections, it may be possible to focus initially on the "hot spots" — the collections where problems are most numerous or severe. NMNH has been a leader in developing practical methods of profiling, and its system is now considered best practice. The NMNH profiling system, which it initiated 20 years ago with the entomology collections, aims to obtain a measure that allows objective comparison of care needs across collections, so that collections care resources can be efficiently allocated. The principle areas of measurement are:

- ***Conservation*** (whether the physical state of items is unstable; degraded but stable; stable and not degraded; or optimal).

- ***Processing*** (whether items are unprocessed; sorted but not accessioned and/or labeled; or fully processed with accurate and complete archival labels).

- ***Storage*** (whether a building/room or storage equipment is substandard or museum-quality).

- ***Arrangement*** (whether items are not arranged; arranged but needing improvement; or fully arranged).

- ***Identification*** (whether items are not identified; identified to the gross level; identified to a useful level; identified to an accepted standard;
  or identified by an expert).

- ***Inventory*** (whether items are not inventoried; inventoried at the collection level; or completely inventoried).

The Smithsonian Center for Materials Research and Education (SCMRE) has also experimented with a profiling system, the Preservation Priority Data Base. SIA has refined SCMRE's system to include seven physical parameters, together with significance and use. SIA has become the leader for profiling within the Institution's archives community.

The OP&A study team believes it is unacceptable for the Smithsonian to allow collections care at any of its units to deteriorate to the point where collections are in jeopardy. However, the study team found that some collecting units face acute and sometimes longstanding problems in two principal areas of collections care: information (a lack of complete and accurate information on the content and condition of collections) and storage (including space shortages and poor quality space, equipment, and supplies). Among Smithsonian museums, the most troubling case is NMAH. The study team is concerned that the problems at NMAH have reached a magnitude that transcends patchwork solutions and requires serious attention in the near term.

ACQUISITION AND DISPOSAL

The purpose of collections development is to shape collections that support a unit's mission, goals, and programs. The traditional tools of collections development are acquisition and disposal.

The size of collections at some units presently exceeds the capacity of the unit to provide adequate care and access. Continued expansion of collections, even at a low rate, will exacerbate the problem unless resources for collections are substantially increased, which is not likely in the foreseeable future. Further, collections at a number of units are not well-configured to support these units' other programs or goals.

The Smithsonian culture that underpins collections development has compounded these problems. Two elements of this culture are worth noting. First, there is a strongly held perception at many units that disposal is to be avoided. Second, academic insularity is evident in many Smithsonian departments and divisions. The latter has created a tendency to collect based on individual, departmental, and divisional agendas, inhibited the integration of collections with other programs, and hindered both cross-disciplinary collections development and collaboration on collecting with other departments, units, and external organizations.

The OP&A study team identified two main areas where changes might serve to strengthen collections development as a management tool: guidance and decision making. In addition, the study team believes that a number of units would likely benefit from a realignment of their collections relative to current missions, goals, programs, and resources.

guidance

Unit-level collections development policies and planning are inadequate for guiding acquisition decisions in a resource-constrained environment. They tend to be either narrowly focused on detailed operational procedures or impractically broad brush. (In fairness, collections development policies and plans have traditionally not been intended to provide anything more than a general framework.)

The collecting plan detailed in the draft SD 600 Implementation Manual contains many of the elements that the OP&A study team regards as essential to effective collections development planning, such as elaborating how collections should be integrated with other programs, reviewing opportunities for collaboration with internal and external collecting organizations, and calling for regular reviews and updates of plans. Other key elements of a unit-level collecting plan include:

- Clarifying a unit's predominant museum type and the role of its collections, to provide context for decision making;
- Identifying a viable size and composition of collections, relative to resources;
- Identifying the collections that are core to a unit's mission and goals, as well as those that are less relevant or suitable, and might be divested;
- Reviewing the holdings of other Smithsonian and external collecting units to avoid duplication and identify opportunities for collaboration;
- Considering greater use of alternatives to traditional collecting, such as long-term loans and shared ownership; and
- Setting priorities and targets for acquisitions and disposals, and creating performance measures to gauge progress.

Additional central Smithsonian guidance on collecting would be useful in some areas. For example, there appears to be an urgent global need to collect natural history specimens extensively in the face of the destruction of biodiversity. This issue might argue for a temporary shift of resources within NMNH — or an infusion of resources from the central administration — to allow the museum to collect more aggressively. The OP&A study team also believes the mandate that the Smithsonian serve as the repository for federal natural history collections merits discussion and updated policy guidance. Given the scarcity of resources, if the Congress wants the Smithsonian to be the steward of federal collections, it needs to provide more explicit guidance on natural history collecting by federal agencies, and to ensure a level of funding commensurate with the role it wants the Smithsonian to play. Such policy guidance is more urgent in the current environment, in which natural history collections may have a direct relationship to national interests such as security and the economy.

decision making

Smithsonian collecting units have made noteworthy efforts to establish more rigorous processes for decision making on collections development.

However, there is room for further improvement. Decision making benefits from a detailed unit collecting plan that addresses the shaping of a unit's collections through both acquisitions and disposals. Key considerations in a unit collecting plan are:

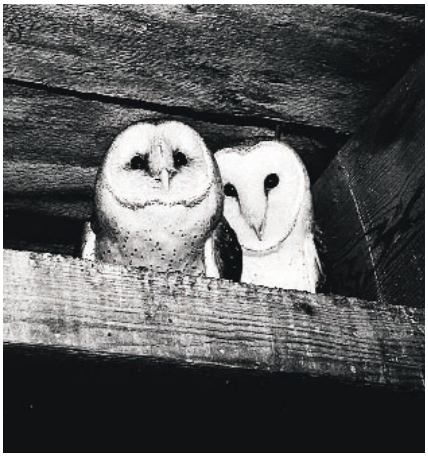
- The results of a complete inventory of collections, which is the necessary foundation for good decisions. A strong case can be made for suspending most collections development activities until such an inventory is complete.
- Collections uses, particularly research and exhibitions.
- Clear, unit-specific criteria with which to assess the relative significance of existing holdings and potential acquisitions.
- Alternative and nontraditional means of accomplishing an end. In an environment of scarce resources, arrangements other than outright ownership may often prove attractive.
- Assessment of whether particular items should be part of accession collections, held in non-accession collections, or divested, based in part on such factors as the items' significance, use, and life-cycle resource requirements.

Decision making on collections development would also benefit from an opportunity cost approach,[6] which accounts for the full life-cycle costs of acquiring and maintaining new objects, as well as holding inappropriate objects, and on alternative uses of the funds.

[6] "Opportunity cost," a concept drawn from economic theory, refers to the *value of available alternatives that are sacrificed by the decision to commit resources to a particular course of action*. Thinking in terms of opportunity costs means taking *all* the costs of a choice into account when calculating its net effects, including implicit, indirect, and foreseeable future costs.

a one-time realignment effort

The decline in the rate of acquisitions at many units — which reflects an increasingly rigorous approach to acquisitions — is a positive trend.



Nevertheless, there will always be a need for deaccessioning and disposal. The OP&A study team believes disposal is a positive tool for collections development and that the approach of ongoing collections refinement used at many art museums has merit.

Not surprisingly, given decades of collecting and changes in collecting philosophies over time, some Smithsonian units have holdings that are not well-suited to their current missions and programs. In some cases, these holdings may be substantial — a case in point being the 7.3 million revenue stamps the National Postal Museum is processing for disposal. The opportunity costs of maintaining unsuitable materials can be large, and may include restricting the acquisition of more desirable items and hampering care of core collections by consuming space and other resources.

The OP&A study team believes the time is right for units to carefully review their holdings with an eye to identifying materials that are less significant or less relevant to their missions, programs, and patterns of collections use. In light of available resources for collections care and access, some units may find they would benefit from a one-time divestiture that brings collections into closer alignment with current needs and circumstances. In addition, the transfer of holdings to organizations around the country that can provide better care and access is surely preferable, if the alternative is maintaining these holdings in unacceptable conditions or inaccessible storage at the Smithsonian.

The study team recognizes that realigning collections with current missions, priorities, programs, and resource realities will be a costly, long-term undertaking for some units. Where units find that a major realignment would be advantageous from the perspectives of access and responsible collections management, the Smithsonian may need to request a block of special funds for this task, to be available over a number of years — similar to what is currently being provided for facilities maintenance. If sufficient congressional appropriations and private donations are not forthcoming, units might consider a temporary reallocation of resources from other activities or the transfer of secondary collections to less expensive, long-term offsite storage.
Such a realignment and divestiture will generate controversy. Opponents might argue that it amounts to an abrogation of the public trust and would tarnish the Smithsonian's reputation

among donors. However, evidence from both the Smithsonian and other museums — notably The Henry Ford in Michigan and Glenbow in Canada — suggests that the public, donors, and other stakeholders are willing to accept major disposals when the process is grounded in a legitimate rationale, carefully explained to stakeholders, conducted openly and in accordance with professional standards, and, where appropriate, used to transfer collections to other organizations that offer public access. One reason for this acceptance of disposals is a general recognition that museums must manage scarce resources wisely to ensure future viability and continued service to the public.

It can be further argued that public accountability not only allows, but requires such a realignment and divestiture. In the judgment of the OP&A study team, holding collections that are irrelevant to a unit's mission, priorities, and programs, that cannot be properly cared for or made accessible, or that drain resources from core collections and programs — especially when other public trust organizations might have an interest in holding these collections — may also be an abrogation of the public trust.

A one-time realignment involving a significant number of collection holdings will require a strong and long-term commitment from central and unit leadership — particularly if the initiative requires major reallocations of resources or generates controversy.

RESOURCES

Professional standards for collections care rise over time,
in part as a result of advances in knowledge and technology
and of shifts in the uses of collections.

This constant change in standards, combined with the continuing growth of collections, means that the level of resources — funds, human capital, storage facilities, information technology, and supplies and equipment — required for sound collections management is always a moving target. However, it is possible to identify areas where a lack of resources is having detrimental effects on Smithsonian collections and their management.

finances

Although the Smithsonian spends more on collections care than on other programmatic activities except research, funds at many units fall short of what is needed to maintain collections adequately.

It is unlikely that the Congress will provide all the funds required to bring ongoing collections management up to desired levels. Indeed, the Congress may not even provide sufficient funds for priority projects such as the completion of basic inventories and collections profiles, development of unit central CISs, and review and realignment of collections.

Additional funds must therefore come from fundraising in the private sector, and from cost recovery measures — that is, user fees that cover some part of the costs of providing access to collections. The OP&A study team believes that there is significant potential for private sector fundraising for specific collections management projects, despite a widely-held myth to the contrary. However, neither the central administration nor the individual collecting units have engaged in major efforts to solicit philanthropic funds for collections management, other than for acquisitions.

The extent to which cost recovery might generate an income stream for collecting units has not been well-studied. While lending is a seemingly logical area in which to recover costs, collecting units typically are reluctant to charge fees other than those required to cover direct expenses, because they benefit from a quid pro quo when they borrow. Fees for services such as photographing artifacts or copying documents are more common, but the potential for generating revenue through such fees is not clear. A related issue at the Smithsonian is that the fees for similar services vary significantly across units, leading to confusion and perceptions of arbitrariness and inequity. A question is whether the Smithsonian should have an Institution-wide policy on collections-related fees.

The OP&A study team's greatest concern in the area of collections resources is the number of collections management personnel.

If units carry out the one-time realignment of collections discussed above, some may have items of sufficient value to justify disposal by sale. The Smithsonian's policy is that both the principal generated by sales of collection items, and any interest accruing from that principal, must be used exclusively for acquisitions — that is, they may not be used for other collections management activities such as care.[7] Some non-Smithsonian museums, however, do use the interest (but not the principal) from such sales for collections care. The OP&A study team sees merit in reviewing Smithsonian policy on the use of such interest revenue for collections care.

In recent years some units have experienced a steep decline in the number of those personnel, especially for collections care, despite steady or growing workloads. Collections care personnel in lower grades account for most of the decline. The cutbacks have forced remaining staff to scramble to stay on top of their primary work, while taking on new responsibilities from departing staff. In some cases, the result has been that staff have not been able to undertake important activities — such as processing outgoing loans, providing onsite access to collections for visiting researchers, and addressing backlogs in collections processing and documentation — in timely fashion, if at all.

The OP&A study team believes day-to-day workloads, let alone accumulated work that has remained undone for many years, may be reaching unsustainable levels for many personnel. There are only two broad options for addressing this problem in the long run: increasing staff resources (employees, contract staff, and volunteers); or reducing workloads (with implications for paring collections, providing fewer services to users, or accepting lower standards of collections care). Given the importance of the Smithsonian's collections to the nation and its obligation to protect them and make them accessible, the former course is clearly preferable.

The OP&A study team estimates that Smithsonian collecting units have an immediate need for approximately 100 additional full-time equivalent (FTE) collections care staff (both employees and contract staff, as needed), at an annual cost of approximately $4.0 million,[8] to bring collections up to an appropriate standard of care. By FY2010, the units will need approximately 65 additional FTEs, at an annual cost of approximately $2.6 million (2003 dollars). Some of the priority collections management projects discussed

[8] The cost estimate is based on the assumption that the average new FTE will have a salary of $29,894 with 30 percent benefits, and will use $800 worth of equipment and supplies per year. The salary calculation assumes that 60 percent of new employees will be grades GS 5-7, 30 percent will be GS 8-10, and 10 percent will be GS 11-13. *Source:* Smithsonian Institution, Committee on Compensation and Human Resources, *The Smithsonian Workforce: Challenges for the 21st Century,* n.d.

[7] Units may use proceeds to cover the costs of deaccessions and disposals where they relate to future acquisitions.

above may require additional research and information technology staff as well — although in some cases, existing staff can be reassigned to these tasks. Some increases in information technology staff for CIS improvements have already been planned.

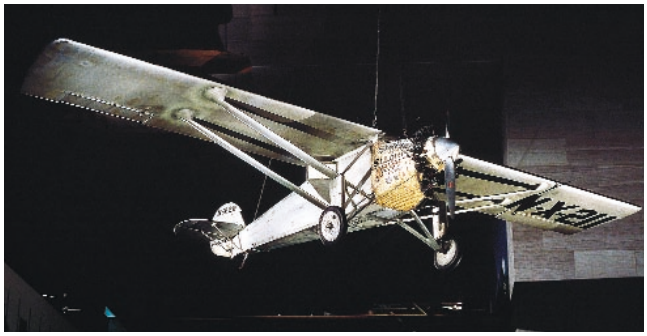
Maintaining collections care staff at appropriate levels will require a reduction in the rate at which collections care personnel are choosing to leave their jobs, which can only be achieved by improving the professional status of collections care workers. Currently, there is limited potential for promotion and advancement within the collections care area, in comparison with the collections research area. The OP&A study team believes that the federal personnel grading system contributes to this situation, and that the growing professionalization of the collections care field requires changes to this system. Options such as "broadbanding" and creating new job classifications might be considered, even if they would mean major changes in the Smithsonian personnel system. It would be worthwhile to consider requesting from the Office of Personnel Management the authority to develop and apply job classifications and series for federal employees specific to Smithsonian collections management functions. Such categories could then be applied to trust employees as well.

Not only do several units need more collections management personnel, but the required skill sets have changed as technology has changed. The Smithsonian has generally not offered formal training in database management and other skills that are rapidly becoming part of the collections management profession. Formal training — rather than the informal training that currently predominates — would better assist staff in coping with the blurring of work roles now characteristic of collections management jobs. This is especially so in light of the impending loss of institutional memory that will occur as a large cohort of senior personnel begins to retire in the next few years.[9]

Loans from Smithsonian collections are currently a priority of the central administration, and staff shortages have slowed the units' ability to process requests. Loans to affiliates raise special issues because of the additional time, effort, and resources they typically require. The OP&A study team questions whether the units can accomplish the goal of getting more of the Smithsonian's objects out into America's museums and communities without additional personnel. It must also question whether this goal, however worthy in its own right, should at this time have higher priority than pressing tasks such as developing CISs, inventorying and profiling collections, and bringing collections care up to a higher standard.

[9] In May 2004, Human Resources Research Organization (HumRRO), located in Alexandria, Virginia, completed a study entitled "Smithsonian-Specific Strategic Human Capital and Workforce Re-structuring Plan (SHCWRP): Project Roadmap." The objective of the effort was to develop a guide for strategic human capital and workforce structuring. Although the study did not single out collections staff per se, it discussed the need to conduct workforce and gap analyses of mission-critical functions. It also recommended the development of a compensation system better aligned with the Smithsonian's strategies and needs, and elaborated on the necessity of strengthening training policies and programs. These and other recommendations are closely related to issues addressed in this study.

OP&A data from FY2000 revealed, troublingly, that Smithsonian units overall judged approximately one third of their storage space to be below acceptable quality.



The extent of the problem, however, varied significantly among the units, and for some, the situation had improved by the time of the follow-up OP&A FY2003 survey. In addition, the Smithsonian was working on several near-term options at the time the research phase of this study was completed, such as the Pod 5 facility[10] at Suitland, to accommodate recognized storage needs.

One option that was *not* under formal consideration — but which the OP&A study team considers worthy of serious attention — is the development of a state-of-the-art federal interagency natural history research and collections facility on the Beltsville, Maryland property of the Agricultural Research Service of the US Department of Agriculture. Such a facility, which has been under discussion for decades within the federal natural history collecting community, would provide consolidated storage for NMNH collections (as well as the collections of other federal agencies), integrated with laboratories and work space. The quality and quantity of scientific space in this proposed facility would far exceed what is possible in the Smithsonian's Natural History Building and Suitland facilities, even with the proposed extensive renovations to the former and the addition of Pod 5 to the latter. (In particular, the configuration and national landmark status of the Natural History Building preclude, or render prohibitively expensive, some highly desirable upgrades of the collections and research space there.) A side benefit of an interagency facility would be to free up quality storage space at Suitland that could be used to serve the needs of other Smithsonian units. Moreover, such a project fits well with the emphasis the executive and legislative branches are now placing on greater collaboration among federal agencies. The OP&A study team recognizes that such a project would involve lengthy and complex negotiations among federal agencies, and would demand flexibility, analytical support, and educational efforts aimed at policy makers, potential users, and the public.

In general, long-term storage needs can be met in three ways:

- Continued improvements in the efficiency with which existing space is used (such as compact shelving);
- Acquisition of additional space (either new construction, purchase of existing space, or leasing); and/or
- Management of acquisitions and disposals so that the space requirements of collections grow at a manageable rate.

All three of these strategies will surely figure in any long-term plan for collections storage. However, it should be stressed that the OP&A

[10] "Pod" is a term used with reference to certain buildings at the Smithsonian's Suitland, Maryland complex. Pod 5 is specifically designed to house NMNH collections that are stored in alcohol.

study team does not consider leasing to be a desirable long-term solution. Unfortunately, when leasing is used as a short-term fix — which often happens, owing to budgetary realities — the leases tend to stretch into the longer term. Not only does evidence suggest that leased facilities are typically the most costly option when considered over a 30-year life cycle, but leased space is almost always of lower quality than Smithsonian-owned space, even after costly upgrades. The Smithsonian needs to make a business case to the Congress and donors for the cost-effectiveness of constructing new storage facilities or purchasing suitable existing facilities.

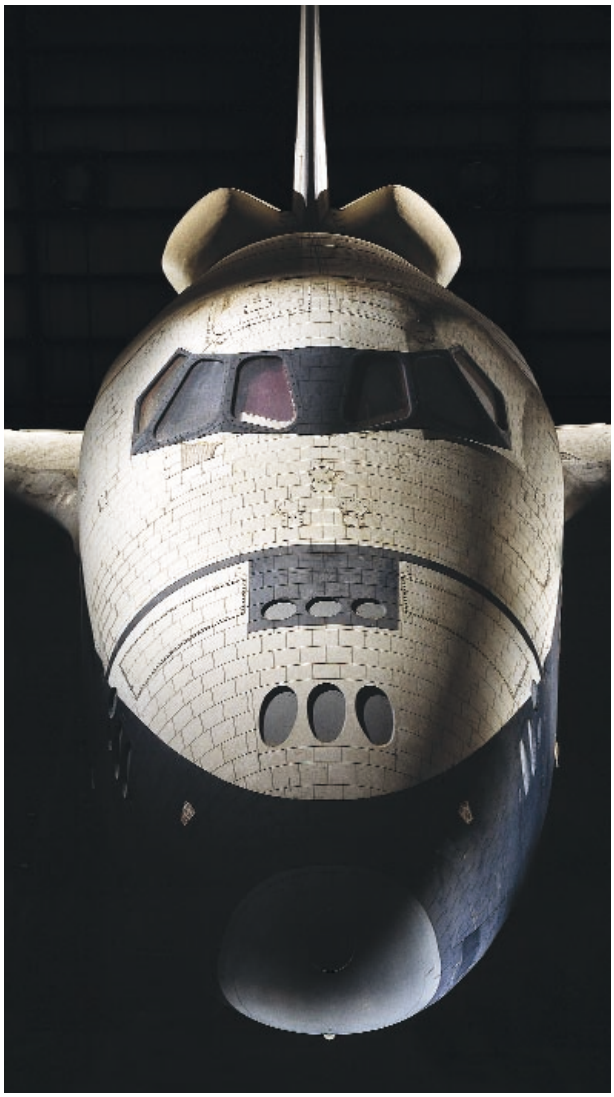
In the course of this study, the OP&A study team noted that the Smithsonian often deferred decisions about storage space until a foreseeable need had become a crisis, a strategy that greatly narrows options and raises costs. There is a need for more long-term, proactive Institution-wide planning of storage space that allows priorities to be set, common interests to be identified, multiple options to be considered, and timely, cost-effective solutions to be found.

information technology

Establishment of the Office of the Chief Information Officer (OCIO) and preparation of the Smithsonian Information Technology Plan (SITP) for FY2002–FY2007 have led to major advances in rationalizing investment in information technology at the Smithsonian.

Smithsonian collecting units have recognized the importance of information technology to collections management and access, and many have made progress in developing a central electronic CIS with at least basic records. Others, however, have been struggling to implement a central CIS. As noted, the OP&A study team considers the development of such a system at all units to be a high priority.

OVERALL CONCLUSIONS



Two of the principal questions this study seeks to answer are how well the Smithsonian has done with its collections obligations, and what the answer means for collections management in the future.

The study team's findings suggest a range of answers.

- ***Access*** presents a mixed picture. As noted, some units with smaller collections have virtually complete electronic catalogues, often with enriched documentation. Others have not yet developed an accessible central electronic catalogue or even a complete inventory of their holdings.

- With respect to ***care of collections***, some units have performed admirably — most notably the art museums. However, others have performed less well, even taking into account differences in scale and current efforts to resolve difficulties.

- In the case of ***collections development***, most units could be doing more to ensure the relevance of collections to their mission and programs. Too often, the rationale for holding particular collections is unclear or unpersuasive, and linkages between collections and other programs are not always obvious. Some units appear to have holdings that are not suitable, given current standards, missions, programs, and resources. Further, units have not adequately explored alternatives to the norms of independent collecting and sole ownership.

- At many units, ***resources*** (most notably staff) are not adequate to meet day-to-day collections management responsibilities or to address accumulated problems in areas such as cataloguing, conservation, and access.

Collections must continue to be a core priority for the Smithsonian. But other important priorities exist, too, especially research and exhibitions. Nevertheless, ***the OP&A study team believes that Smithsonian management has an obligation not to permit conditions to reach a point where collections are placed in jeopardy***. Some units may already be in that situation, or soon will find themselves there. Although Smithsonian management is moving on many fronts to address the problems, it will need to do more.

Many of the current problems with Smithsonian collections cannot be laid at the doorstep of current management. The problems have been building for decades. Current management is, however, responsible for their redress, and its request for this study was a critical, necessary first step. The results can serve as a guide for further steps toward management excellence in the collections arena. Some problems will require considerable resources to address; others can be tackled through better management of resources.

strategic guidance

Inadequate guidance lies at the heart of many collections problems. The OP&A study team identified three key areas of collections management that would benefit from clearer guidance from central Smithsonian leadership.

First, ***there is confusion over the meaning and therefore the nature of national collections at the Smithsonian overall and, to varying degrees, at the individual collecting units***. What are the collecting roles of the Smithsonian's national museums, archives, and libraries? Are they the primary custodians of the nation's cultural and natural heritage, or should they see themselves as part of a network of organizations that collectively ensure the preservation of that heritage? What should the Smithsonian acquire? One particular concern of the OP&A study team is the continued ability of the Smithsonian to serve as the repository for federal natural history collections in the absence of adequate congressional funds or internal resources to manage them. Given the rate at which species are disappearing, what is the Smithsonian's role in ensuring adequate collecting to preserve evidence of vanishing species? Similarly, what is its responsibility for collections orphaned by other US collecting units?

Second, ***the importance of collections at the Smithsonian relative to other programs and activities is not clear***. Units will likely be reluctant to focus on deficiencies in collections management without a clear indication that this is a high Institutional priority.

Third, in an environment of constrained resources — a situation that the OP&A study team does not expect to change in the foreseeable future — it is no longer possible to continue conducting business as usual. ***The Smithsonian will need to pursue less traditional approaches, such as sharing collecting and stewardship responsibilities with other organizations***. Guidance on how best to leverage opportunities for sharing collections management responsibilities is necessary.

long-term planning by the units

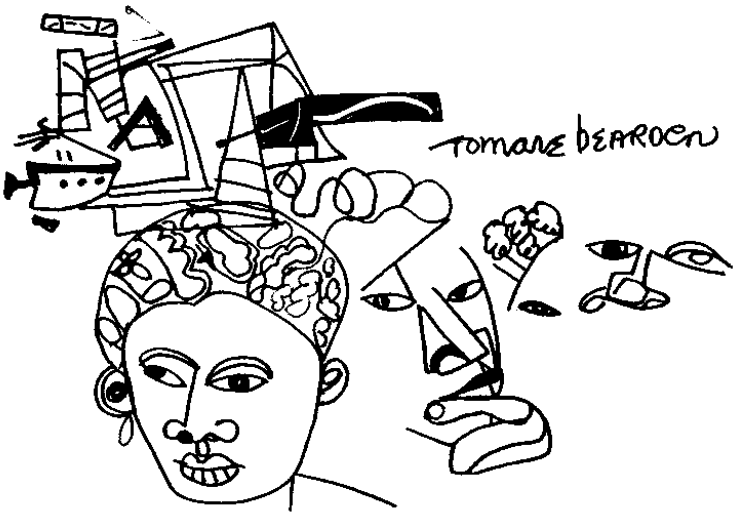
Every Smithsonian collecting unit has collections policies and plans, but they generally do not provide practical guidance, such as clear priorities. In some cases, they have not been updated for many years. The latest revision of SD 600 requires long-term collections management planning, and implementation of this requirement is a top priority.

The OP&A study team believes each unit should formulate a comprehensive collections management plan that covers the universe of collections-specific functions such as collections development, care, documentation, provision of access, staffing, and development of policy. Other more detailed plans specific to particular functions, such as digitization, cyclical inventories, and preservation, should flow from and support the comprehensive unit collections management plan.

The following are necessary elements in an effective collections management plan:

- Overarching conceptual directions that frame and integrate all programs within individual units.
- Definition of the role and priority of collections relative to a unit's mission and other programs.
- Resolution of longstanding collections management deficiencies — such as inventory and cataloguing backlogs, items awaiting disposal, and inadequate storage — and creating procedures for preventing their recurrence.
- Formulation of long-term responses to resource shortfalls — or, to put it another way, developing collections management plans that are consistent with resources.
- Delineation of specific, prioritized performance objectives; practical unit performance measures to gauge progress; and a realistic timetable for achieving milestones, particularly the resolution of identified problems.

decision making



The OP&A study team believes some characteristics of decision making on collections management at the Smithsonian have contributed significantly to the problems.

- Difficult and perhaps unpopular decisions needed to accommodate resource realities often have not been made in a timely manner, if at all. Although collections responsibilities have clearly exceeded the resources available to support them for many years, new programs have routinely been initiated that exacerbate the situation. As part of planning, collecting units should realistically assess their collections management priorities and ensure that the resources required to carry them out are available, even if this means putting other activities on hold so that resources can be shifted.

- A lack of the information essential for sound decision making has been commonplace. Most critically, some units have not developed full inventories of their holdings, or conducted condition assessments to inform them about the content and conservation needs of their collections.

- Stove-piped decision making has tended to further the interests of individual curatorial/scientific departments and staff, rather than the collecting unit or the Smithsonian as a whole.

- A focus on immediate needs and issues without due consideration for long-term implications has contributed to the imbalance between collections management responsibilities and resources. An example is the leasing of storage space as a solution to pressing storage needs, which typically results in lower quality, higher cost space. Collections management involves long-term obligations that require a long-term perspective.

organizational structure

The OP&A study team does not believe most collections management problems are the result of the existing organizational structure, so much as how that structure is managed.

In particular, insularity has resulted in missed opportunities to leverage resources through joint activities, both within the Smithsonian and with external organizations. The major exception is the Smithsonian's science museums and research centers, whose internal and external collaboration offers a model for units in other fields.

At the same time, the OP&A study team believes the structure of pan-Institutional collections management support can be strengthened, because issues do arise that merit deliberation at both the central and unit levels. One example is shared storage space, particularly with regard to specialized facilities such as cold storage.

NCP occupies a key pan-Institutional position that bears enhancing in three areas. Its ***information-sharing role*** can usefully be reinforced to include a comprehensive central repository of information on collections management practices and resources, pulled from both Smithsonian and external sources. Its ***internal advocacy role*** for collections can be augmented to enable it to better identify Institution-wide concerns and coordinate initiatives to address them. And its limited ***monitoring role*** can be expanded to include formal reviews of unit collections management policy and plans, verification of information from the units, collection of additional information, and oversight of the remediation of problems. Given the diversity of the units in terms of missions, collections, programs, and collections management needs, NCP would need to work closely in the above roles with the Under Secretaries and the units. Changes in the roles of NCP could usefully be included in SD 600 and the accompanying Implementation Manual.

Finally, collections management across the Smithsonian would benefit from the establishment of a Smithsonian Collections Advisory Committee to formalize coordination and communication among the units and to address pan-Institutional issues. Optimally, the committee would be composed of senior unit representatives, such as the associate directors for collections, and would be chaired and administered by the NCP coordinator. Such a committee is set forth in the draft SD 600 Implementation Manual, and the OP&A study team believes it is worth establishing.

professional culture

Many of the Smithsonian's collections management weaknesses stem from a professional culture ill-suited to present realities.

This culture places a far higher priority on scholarship and research than on care and access. Further, there is an insistence upon autonomy that allows departments to operate with minimal attention to one another, the unit or the Smithsonian as a whole, and the wider collecting community.

Further, the professional culture at the Smithsonian embraces two prominent myths that strongly contribute to resistance to change: "the public and donors will not tolerate disposals" and "no one will give money for collections management." To the contrary, the findings of this study indicate that stakeholders are receptive to well-reasoned and transparent disposals that support sound unit management overall, and that donors will support collections management when an effective case is made.

accountability

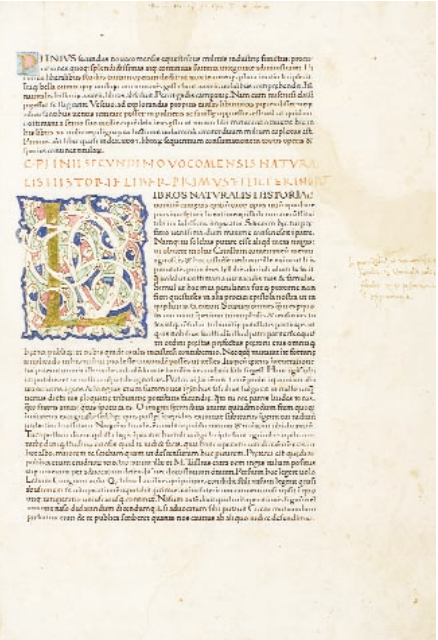
Accountability for collections management is weak at the Smithsonian, in part because no single entity at the central level oversees this area.

NCP is currently limited to informal advising and reporting. While the Under Secretaries have greater authority, collections management has not been a high priority at this level. Ideally, accountability would entail central review of unit collections-related plans, as well as the performance of senior management. Performance could also be bolstered by creating incentives for senior managers to meet or exceed targets.

RECOMMENDATIONS

national roles

For Smithsonian collecting units, identifying their core national purpose can both provide a basis for assessing the appropriateness of current collections, and guide future collecting. Yet there is surprisingly little clarity, either within the Smithsonian or the wider museum community, about what a "national" role is or entails.



- In accordance with SD 600,[11] each unit director, using the unit's collections management policy and collecting plan, shall have responsibility for defining the unit's national collection role, within the Institution's national collecting roles. As situations require, Smithsonian senior management (Deputy Secretary, Under Secretaries, and directors of collecting units) will interpret SD 600 for additional guidance, consistent with accreditation and professional standards. The following questions may apply:

  – The meaning of "national" with respect to the unit's collections. For example, what is the unit's national collecting role? What cultural, artistic, natural, and other evidence should it protect for future generations? What is its responsibility for collecting rapidly vanishing species and for collections orphaned by other US collecting units? What is its context with relation to other similar or complementary collecting entities?

  – The relative priority of collections and their management with respect to other unit major programs and activities.

use and access

- Smithsonian senior management (Deputy Secretary, Under Secretaries, and directors of collecting units) shall:

  – Establish a Smithsonian-wide policy for electronic access to collections information consistent with SD 600.

  – Assign responsibility to OCIO to develop a central portal for access to collections information across Smithsonian collecting units.

  – Develop related goals, objectives, and performance measures, and incorporate them into the Smithsonian strategic and annual performance plans.

[11] The term "SD 600" is used to include Smithsonian Directive 600 and its companion SD 600 Implementation Manual.

- Each collecting unit shall establish, within the framework of central policy on digitization and electronic access, a unit collections digitization plan, based on uses and users. The plan shall include priorities, guidance on the information content appropriate to different users, goals and objectives for electronic access, targets for digitization, and a timeline for implementation. The plan shall be consistent with the unit strategic plan and with SD 600.

- The Smithsonian shall foster collaboration on electronic access, internally and externally. Specific priorities include:

  – Creation of a single Smithsonian portal to facilitate searches across all Smithsonian collections databases.

  – Participation in cooperative arrangements with consortia and interagency forums such as biodiversity networks.

  – Linkages with external databases and participation in portals that connect the Smithsonian and external organizations.

collections care

- The Smithsonian shall implement minimum standards for inventories, profiling, and significance assessments in SD 600, to serve as a framework for the development of unit- specific standards.

- To ensure preservation of its collections, each unit shall, in accordance with the minimum Smithsonian standards established for each task:

  – Establish and implement an inventory process and written cyclical inventory plan appropriate to the character and size of the unit's collections.

  – Profile its collections, and prepare an action plan to address deficiencies and to prevent their recurrence.

  – Conduct a significance assessment of its collections and categorize collections by level of significance with respect to appropriate parameters, such as the unit's purpose, mission and programs, its users, and the ability of collections to support its interpretative goals.

acquisition and disposal

- Each unit shall develop a long-term collecting plan that provides a framework for making acquisition and disposal decisions. The collecting plan shall:
  - Flow from the unit's mission and strategic plan.
  - Be practical, operational, and aligned with resources.
  - Be based on comprehensive collections information, including inventory, profiling, and significance assessment information.
  - Clarify the priorities for collection uses.
  - Identify strengths, weaknesses, and gaps in existing collections to guide acquisition and disposal decisions.
  - Identify specific implementation strategies (including linkages with the unit's other programs, opportunities for collaboration, and alternatives to traditional collecting), with target end dates, milestones, existing and required resources, and performance measures.

resources

Finances

- The Office of External Affairs and unit development offices shall raise funds in the private sector for collections management.
- OP&A shall conduct a study of collections management-related cost recovery to include consideration of a central cost reco very policy.

Human Resources

- As part of the response of the Office of Human Resources to the HumRRO report, a critical skills analysis for collections management (to include identification of critical functions, required core competencies, and staffing requirements) shall be conducted in conjunction with the units.
- The Smithsonian shall increase the human resources devoted to the management of collections as soon as possible.
- Training for collections management staff shall be aligned with the requirements of unit strategic plans, technology, professional standards, job descriptions, and assigned tasks.

Long-Term Planning

❖ Each unit shall address collections in its strategic plan, including:

- Role(s) of collections.
- Priority of collections management relative to the unit's other programs and functions.
- Linkages and role of collections with the unit's other programs and functions.
- Ties with other Smithsonian and external organizations, including partnerships and collaborative arrangements.
- Performance measures for collections management.

Organization

❖ The Secretary shall strengthen pan-Institutional support for collections management by:

- Expanding NCP's role as advisor to senior management on collections management matters, as well as information sharing, internal advocacy, and monitoring of compliance with SD 600. NCP's monitoring role shall include assessment of unit self-evaluation reports to established goals and performance indicators, and follow-up through senior management to address identified deficiencies in collections management.
- Establishing the Smithsonian Collections Advisory Committee, to be led by the National Collections Coordinator, to assist senior management in establishing a framework for setting Institutional priorities and meeting collections stewardship responsibilities.

Accountability

- Consistent with the unit strategic plan, unit directors shall actively manage the development, care, and accessibility of their collections, to include short- and long-term strategies, priorities, and initiatives, and set performance measures, targets, timelines, and end dates. Priority objectives shall include: (1) aligning collections management with resources; (2) achieving compliance with SD 600, as revised to reflect minimum compliance standards; (3) addressing legacy and current problems; and (4) achieving performance goals.

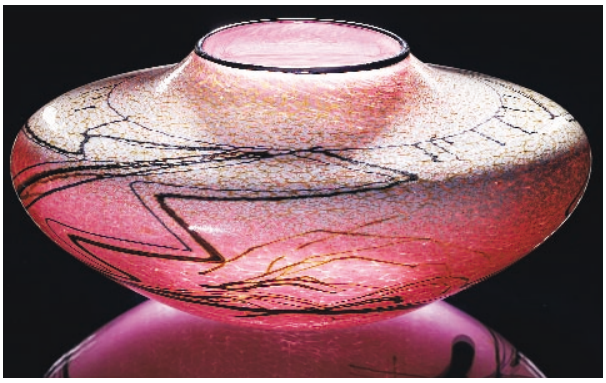
- Each unit shall adhere to minimum Institution-wide standards of collections management required for compliance with SD 600 (including a current collections management policy, collecting plan, inventory plan, and digitization plan) and develop related performance measures.

- The Secretary shall ensure that collections management at all units meets professional standards and complies with SD 600 by incorporating collections-specific measurement standards into the Smithsonian strategic and annual performance plans and into the performance plans of senior management (Deputy Secretary, Under Secretaries, and directors of collecting units).

APPENDIX A.

LIST OF ORGANIZATIONS CONTACTED

The OP&A study team conducted in-person or telephone interviews with staff of these museums and organizations.



Agricultural Research Service, US Department of Agriculture (Beltsville, Maryland)*
American Museum of Natural History (New York, New York)*
Anacostia Museum/Center for African American History and Culture (Smithsonian Institution)*
Archives of American Art (Smithsonian Institution)*
Association of Art Museum Directors (New York, New York)
British Museum (London, Great Britain)*
Canadian Conservation Institute (Ottawa, Ontario)*
Canadian Heritage Information Network (Gatineau, Quebec)
Canadian Museum of Civilization (Gatineau, Quebec)*
Canadian Museum of Nature (Ottawa, Ontario)*
Center for Folklife and Cultural Heritage (Smithsonian Institution)*
Cooper-Hewitt, National Design Museum (Smithsonian Institution)*
Experience Music Project (Seattle, Washington)*
Freer Gallery of Art and Arthur M. Sackler Gallery (Smithsonian Institution)*
Glenbow Museum (Calgary, Alberta, Canada)
Henry Ford Museum & Greenfield Village (Dearborn, Michigan)*
Henry R. Luce Foundation (New York, New York)
Hirshhorn Museum and Sculpture Garden (Smithsonian Institution)*
Historical Society of Washington, D.C. and City Museum of Washington, DC*
Horticulture Services Division (Smithsonian Institution)*
International Art Museum Division (Smithsonian Institution)*
Library of Congress (Washington, DC)*
Los Angeles Zoo (Los Angeles, California)*
Mingei International Museum (San Diego, California)
Monterey Bay Aquarium (Monterey, California)*
Museum of Anthropology at the University of British Columbia (Vancouver, British Columbia, Canada)
Museum of Contemporary Art San Diego (San Diego, California)*
Museum of Flying (Santa Monica, California)*
Museum of Jurassic Technology (Los Angeles, California)*
Museum Program, US Department of the Interior (Washington, DC)*

* The study team also visited these organizations.

National Air and Space Museum (Smithsonian Institution)*
National Archives and Records Administration (Washington, DC)*
National Collections Program (Smithsonian Institution)*
National Gallery of Art (Washington, DC)*
National Museum of African Art (Smithsonian Institution)*
National Museum of American History (Smithsonian Institution)*
National Museum of Australia (Canberra, Australia)*
National Museum of Natural History (Smithsonian Institution)*
National Museum of the American Indian (Smithsonian Institution)*
National Museum of Women in the Arts (Washington, DC)*
National Museums of Scotland (Edinburgh, Scotland)*
National Park Service Biological Resource Management Division, US Department of the Interior (Beltsville, Maryland)*
National Portrait Gallery (Smithsonian Institution)*
National Postal Museum (Smithsonian Institution)*
National Zoological Park (Smithsonian Institution)*
Natural History Museum (London, Great Britain)*
Natural History Museum of Los Angeles County (Los Angeles, California)*
Office of Affiliations (Smithsonian Institution)*
Office of Facilities Engineering Operations
Office of Physical Plant, Facilities Services (Smithsonian Institution)*
Office of the General Counsel (Smithsonian Institution)*
Patuxent Wildlife Research Center, US Geological Survey, US Department of the Interior (Beltsville, Maryland)*
Powerhouse Museum (Sydney, Australia) *
Re:Source — The Council for Museums, Archives, and Libraries (London, Great Britain)
Royal British Columbia Museum (Victoria, British Columbia, Canada)*
Royal Museum, Museum of Scotland, and Granton Centre (Edinburgh, Scotland)
Royal Ontario Museum (Toronto, Ontario, Canada)*
Ruben H. Fleet Science Center (San Diego, California)*
Samdok (Stockholm, Sweden)
San Diego Museum of Man (San Diego, California)*
San Diego Zoo (San Diego, California)*
San Francisco Museum of Modern Art (San Francisco, California)*
Seattle Art Museum (Seattle, Washington)*
Smithsonian American Art Museum (Smithsonian Institution)*
Smithsonian Business Ventures (Smithsonian Institution)*
Smithsonian Center for Materials Research and Education (Smithsonian Institution)*
Smithsonian Institution Archives (Smithsonian Institution)*
Smithsonian Institution Libraries (Smithsonian Institution)*
Smithsonian Institution Traveling Exhibition Services (Smithsonian Institution)*
Space Telescope Science Institute (Baltimore, Maryland)*
Te Papa, National Museum of New Zealand (Wellington, New Zealand)*
Texas Memorial Museum (Austin, Texas)
Visitor Information and Associates' Reception Center (Smithsonian Institution)*
Wing Luke Asian Museum (Seattle, Washington)*

APPENDIX B.

BIBLIOGRAPHY

Ainslie, Patricia. 1997. The deaccessioning strategy at Glenbow, 1992-97. In *A deaccession reader*, 125-42. ed. Stephen Weil. Washington, DC: American Association of Museums.

———. 1999. Deaccessioning as a collections management tool. In *Museums and the future of collecting*. ed. Simon Knell. Brookfield, VT: Ashgate Publishing Co.

American Association of Museums. 2000. Collections. In Code of ethics for museums 2000. Washington, DC: American Association of Museums.

———. 2001a. The accreditation commission's expectations regarding collections stewardship. http://www.aam-us.org.

———. 2001b. American Association of Museums guidelines concerning the unlawful appropriation of objects during the Nazi era. Washington, DC. Issued November 1999 and amended April 2001.

———. 2003a. AAM launches online collections exchange center. Press release. Washington, DC. October 23.

———. 2003b. Collections planning: Strategies for planning & implementation. Information Center fact sheet (American Association of Museums-National Museum of American History Collections Planning Colloquium, November 15-16, 2002). Washington, DC.

———. 2003c. Considerations for AAM accredited museums facing retrenchment or downsizing. AAM Accreditation Commission. Washington, DC. August 28.

———. 2003d. Creating an intellectual framework for collections planning. Information Center fact sheet (American Association of Museums-National Museum of American History Collections Planning Colloquium, November 15-16, 2002). Washington, DC.

———. 2003e. Outline for a collections plan. Information Center fact sheet (American Association of Museums-National Museum of American History Collections Planning Colloquium, November 15-16, 2002). Washington, DC.

———. 2003f. University natural history museums and collections. AAM position statement. Washington, DC. November.

Art museums appoint renowned conservator. 2001. *Harvard University Gazette* (January 24). http://www.news.harvard.edu/gazette/2001/01.24/12-conservator.html.

Association of Art Museum Directors. 2001a. Professional practices in art museums. New York.

———. 2001b. *Salary survey*. New York: AAMD.

Babbidge, Adrian. 2000. UK museums: Safe and sound? *Cultural trends* (London, Policy Studies Institute) 10:37.

Baca, Murtha, Tony Gill, and Anne Gilliland-Swetland. 2000. Introduction to metadata: Pathways to digital information. Getty Research Institute. http://www.getty.edu/research/conducting_research/standards/intrometadata/index.html.

Bank, Gretchen G. 1988. Determining the cost: Architect George Hartman's formula. *Museum News* (May/June):74.

Barnard, Matt. 2002. The fire escape. News analysis. *Museums Journal* (July):14-15.

Barr, David W. 1997. Legacies and heresies: Some alternatives in disposing of museum collections. In *A deaccession reader*, 99-106. ed. Stephen Weil. Washington, DC: American Association of Museums.

Behind the scenes access, photography, or filming of museum objects. Museum of Anthropology, University of British Columbia. n.d. www.moa.ubc.ca/pdf/Behind_the_scenes.pdf.

Behind the scenes at the museum. 2000/2001. Science and Technology. *The Economist* 357 (8202)(23 December 2000-5 January 2001):115-16.

Bell, Steven J. 2003. Is more always better? *American Libraries* 34 (1)(January):44-46.

Bensard, Éva. n.d. France moves towards the devolution of cultural heritage. *TheArtNewspaper.com*. (Accessed January 20, 2004.)

Bergevoet, Frank. n.d. Guide to the deaccessioning of museum objects in the Netherlands. Netherlands Institute for Cultural Heritage.Amsterdam. (Photocopy.)

Besterman, Tristram. 1991. The ethics of emasculation. *Museums Journal* (September):25-28.

———. Disposals from museum collections. Ethics and practicalities. *Museum Management and Curatorship* 11:29-44.

Björklund, Anders, and Éva Silvén-Garnert, eds. 1996. *Adressat okänd. Framtidens museiföremil* [Addressee Unknown. Tomorrow's Museum Artefacts]. Stockholm: Carlsson.

Blumenstyk, Goldie. 1999. Matchmaker to the art world. *Chronicle of Higher Education*. May 21.

Borg, Alan. 1991. Confronting disposal. *Museums Journal* (September):29-31.

British Library. n.d. *Adopt a book*. http://www.bl.uk/about/cooperation/adopt.html.

Butts, David. n.d. Fellowships in museum practice. Washington, DC: Smithsonian Institution. http://museumstudies.si.edu/Fellowships/DavidButts.htm.

Cameron, Fiona. The next generation — 'knowledge environments' and digital collections. Museums and the Web 2003. Papers. University of Sydney, Australia. http://www.archimuse.com/mw2003/papers/cameron/cameron.html.

Canadian Museums Association. 1999. CMA ethical guidelines 1999. http://www.museums.ca/cma1/about/cma/ethics/ethicstoc.htm.

———. 2001. Wired collections: The next generation. *Museum Management and Curatorship* 19 (3):309-15.

Commission on the Future of the Smithsonian Institution. 1995. *E pluribus unum: This divine paradox*. Washington, DC: Smithsonian Institution.

Conforti, Michael. 1997. Deaccessioning in American museums: II — some thoughts for England. In *A deaccession reader*. ed. Stephen Weil. Washington, DC: American Association of Museums.

Cunliffe, Danielle, et al. 2001. Tell me what you want, what you really, really want. Usability evaluation for museum websites. *Museum Management and Curatorship* 19 (3):229-52.

Dunkin, Zach. 2003. Museum boom resounds in city. *Indianapolis Star.* December 14.

Dunn, Richard. 1999. The future of collecting: Lessons from the past. In *Museums and the future of collecting*. ed. Simon Knell. Brookfield VT: Ashgate Publishing Company.

Fenton, Alexander. 1995. Collections research: Local, national and international perspectives. In *Collections management* (Leicester Readers in Museum Studies). ed. Anne Fahy. New York: Routledge.

Financial Accounting Standards Board. 1993a. Statement of financial accounting standards no. 116: Accounting for contributions received and contributions made. *Financial Accounting Series* (June).

———. 1993b. Statement of financial accounting standards no. 117: Financial statements of not-for-profit organizations. *Financial Accounting Series* (June).

Financial Accounting Standards Advisory Board. 2003. Heritage assets and stewardship land: Reclassification from required supplementary stewardship information, proposed statement of federal financial accounting standards. (Exposure draft.) August 20.

Fleming, David. Changing the disposals culture. *Museums Journal* (UK) (September):36-37.

Gardner, James B., and Elizabeth Merritt. 2002. Collections planning: Pinning down a strategy. *Museum News* (July/August): 31-33, 60, 61.

Garfield, Donald. 1990. Unusual obstacles: Natural history museums and keepers of living collections face deaccessioning dilemmas distinct from those of other institutions. *Museum News* (March/April):52-54.

Gilboe, Roberta Frey. 1997. Report to the Deaccessioning Task Force of the Registrars Committee of AAM. In *A deaccession reader*, 205-44. ed. Stephen Weil. Washington, DC: American Association of Museums.

Greenaway, Frank. 1983. National museums. *Museums Journal* 82 (4) (March):7-12.

Greene, Mark. 2000. "The surest proof": A utilitarian approach to appraisal. *American archival studies: Readings in theory and practice*, 301-42. ed. Randall C. Jimerson. Chicago: The Society of American Archivists.

Greene, Mark A., and Todd J. Daniels-Howell. 1997. Documentation with an attitude: A pragmatist's guide to the selection and acquisition of modern business records. *The records of American business*, 161-229. ed. James M. O'Toole. Chicago: The Society of American Archivists.

Hallett, Martin. 2003. The objects of science and technology — working with "things." Proceedings of the "Recovering Science" Conference. http://www.asap.unimelb.edu.au/.

Hayes, Seay, Mattern, and Mattern, Inc. 1997. Smithsonian Institution History and Art Center: Facility prospectus and back-up documentation. November.

Henry Ford Museum & Greenfield Village. 1999. Collections 21 Task Force report. Dearborn, MI.

———. 2001. Henry Ford & Greenfield Village policy and procedure memorandum no. 10c. Collections policy. Dearborn, MI. January.

———. 2002a. Henry Ford, quoted in the *New York Times Magazine*. April 5, 1931. As quoted in History principles for Henry Ford Museum & Greenfield Village. October 16.

———. 2002b. Themes for rural life after World War II. Dearborn, MI. (Draft.)

Heritage Collections Council (Australia). 1998. *Managing collections*. reCollections: Caring for collections across Australia. Canberra: Heritage Collections Council.

———. 2001. *(significance) A guide to assessing the significance of cultural heritage objects and collections*. Canberra: Heritage Collections Council.

Heritage Preservation. 2003. *Heritage health index*. http://www.heritagepreservation.org/PROGRAMS/HHIhome.HTM.

Higgins, Charlotte. 2003. Behind the scenes at the museum. *The Guardian*. November 27.

Hilberry, John D. 2002. Behind the scenes: Strategies for visible storage. *Museum News* (July/August):34-40.

History of museums. 2002. *Encyclopedia britannica*. http://search.eb.com/eb/article?eu=127668.

Holo, Selma Reuben. 1999. *Beyond the Prado: Museums and identity in democratic Spain*. Washington, DC: Smithsonian Institution Press.

Hooper-Greenhill, Eilean, ed. 1995. *Museum, media, message*. New York: Routledge.

Hull, C. Bryson. 2002. Enron ethics manual to be enshrined at Smithsonian. Yahoo!Finance, February 26. http://biz.yahoo.com/.

Institute of Museum and Library Services. 2002. Status of technology and digitization in the nation's museums and libraries 2002 report. May. http://www.imls.gov/reports/techreports/intro02.htm.

International Council of Museums. 2001. ICOM code of ethics for museums. http://icom.museum/ethics.html.

Janes, Robert R. 1995. *Museums and the paradox of change: A case study in urgent adaptation*. Alberta, Calgary, Canada: Glenbow Museum.

Jha, Alok. 2003. Welcome to the real Natural History Museum. *The Guardian*. October 9, 2003.

Kavanagh, Gaynor. 1999. Collecting from the era of memory, myth and delusion. In *Museums and the future of collecting*, 79-87. ed. Simon Knell. Brookfield, VT: Ashgate Publishing Company.

Keene, Suzanne. 1994. Less is more. *Museums Journal* (November):34-37.

———. 2002. Museums, collections, and people. *Managing conservation in museums*, chapter 2. 2d ed. Oxford: Butterworth Heinemann.

Kelly, Lynda. 1999. Developing access to collections through assessing user needs. Paper presented at Museums Australia Conference, Albury, Australia, May.

Kennard, Desmond. 2002. Contemporary collecting. *Newsbrief* (Museums and Galleries Foundation of New South Wales) 4 (4)(September):2.

Kinzer, Stephen. 2002. Museum's goal: Save the world's wild places. *New York Times*. November 5.

Knell, Simon J., ed. 1999a. *Museums and the future of collecting*. Brookfield, VT: Ashgate Publishing Company.
——— . 1999b. What future collecting? In *Museums and the future of collecting*, 3-35. ed. Simon Knell. Brookfield, VT: Ashgate Publishing Company.

LeBlanc, F. 2003. Field trip report. The Getty Conservation Institute. http://www.icomos.org/~fleblanc/projects/p_gci_ftr_2003chile-argentina.pdf.

Levin, Miriam R. 2002. Museums and the democratic order. *Wilson Quarterly* 26 (1) (Winter). http://web18.epnet.com/citation.

Lord, Barry, Gail Dexter Lord, and John Nicks. 1989. *The cost of collecting*. London: Her Majesty's Stationery Office.

Lubar, Steven, and Kathleen M. Kendrick. 2001. *Legacies: Collecting America's history at the Smithsonian*. Washington DC: Smithsonian Institution Press.

Madden, Mary. 2003. America's online pursuits: The changing picture of who's online and what they do. Pew Internet & American Life Project. December 22. http://www.pewinternet.org/index.asp.

Malaro, Marie C. 1997. Deaccessioning — the American perspective. In *A deaccession reader*, 39-49. ed. Stephen Weil. Washington, DC: American Association of Museums.

———. 1998. *A legal primer on managing museum collections*. Washington, DC: Smithsonian Institution Press.

Mangerie, Tony A. 2003. Digital asset management presentation to the Office of the Chief Information Officer and others. Smithsonian Institution, Washington, DC. September 22.

Mayo, Edith. 1981. In *Twentieth-century popular culture in museums and libraries*. ed. Fred E. H. Schroeder. Bowling Green: Bowling Green University Popular Press.

Miller, Steven H. 1997. Selling items from museum collections. In *A deaccession reader*, 51-61. ed. Stephen Weil. Washington, DC: American Association of Museums.

Müller, Klaus. 2002. Going global: Reaching out for the online visitor. *Museum News* (September/October):46-53.

Munday, Val. 2002. Guidelines for establishing, managing, and using handling collections and hands on exhibits in museums, galleries and children's centres. http://www.mla.gov.uk/action/stewardship/00stew.asp.

Muse. 1990. Issue on the great deaccessioning debate. 8 (2)(August.)

Museums Journal (UK). 1991. Issue on disposal. (September.)

———. 1996. Issue with several articles on disposal. (July.)

Museum News. 1990. Issue on the debate over deaccessioning. (March/April.)

Nairne, Sandy. 2002. Collaboration and rationalisation. Submitted to Re:Source, June 10, 2001. London. www.mla.gov.uk.

NASA seeks advice about displaying pieces of Columbia. 2003. DallasNews.com from Associated Press. August 26.

National Academy of Public Administration. 2001. Study of the Smithsonian Institution's Repair, Restoration, and Alteration of Facilities Program. Washington, DC: National Academy of Public Administration.

National Museum Directors' Conference (NMDC). 2002. *International dimensions*. London: National Museum Directors' Conference.

———. 2003. *Too much stuff? Disposal from museums*. London: National Museum Directors' Conference.

National Museum of Australia. 1996. Collections development framework. Canberra, September. (Photocopy.)

Natural Science Collections Alliance. 2003. *Alliance Gazette* (Spring):2-4.

Neal, Arminta. 1980. Collecting for history museums: Reassembling our splintered existence. *Museum News* (May/June):24-27, 29.

Niemeyer, Alex, Minsok H. Pak, and Sanjay E. Ramaswamy. 2003. Smart tags for your supply chain. *The McKinsey Quarterly* (4).

Pearce, M. Susan. 1992. *Museums, objects, and collections: A cultural study.* Washington, DC: Smithsonian Institution Press.

Perry, Richard L. 1988. Dipping into the current: Collecting artifacts of the recent past. In my opinion. *History News* 43 (1) (January/February):31, 33-34.

Pes, Javier. 2002. Open storage special: Reserve judgement. *Museum Practice* 19 (7):50-55.
Pew Internet and American Life Project. 2003. *Internet use by region in the United States*. August 27. http://www.pewinternet.org/reports/.

Price, Laura, and Abby Smith. 2000. *Managing cultural assets from a business perspective*. Washington, DC: Council on Library and Information Resources.

Re: Source [formerly Museums and Galleries Commission, and as of 2004 The Museums, Libraries, and Archives Council, www.mla.gov.uk]. 1995. Registration scheme for museums and galleries in the United Kingdom. Registration guidelines. 1.2: Use of the title 'national' museum. London.

——— . 2003a. The designation scheme for museums, archives and libraries. Draft for consultation. London.

——— . 2003b. Registration scheme for museums and galleries: Registration standard. Draft for consultation. London. March.

Rewald, John. 1997. Should Hoving be deaccessioned? In *A deaccession reader.* ed. Stephen Weil. Washington, DC: American Association of Museums.

Rubenstein, Harry. 1985. Collecting for tomorrow: Sweden's contemporary documentation program. *Museum News* (August).

Ruiz, Cristina. 2003. Profile of Andrew Lloyd-Webber, as his collection goes on show. News section. http://www.theartnewspaper.com/.

Saffo, Paul. 1994. It's the context, stupid. *Wired* 2.03 (March). http://www.wired.com/wired/archive/2.03/context.html.

Scoble, Malcolm J. 1997. Natural history museums and the biodiversity crisis: The case for a global taxonomic facility. *Museum International* 49 (4).

Shelton, Sally. 2000. Report of FY2000 collections profiling project. National Museum of Natural History, Smithsonian Institution. Washington DC.

Silvén, Éva. 1998. Samdok. Contemporary research in Swedish museums. Samdok. Stockholm. April 1.

Silvén-Garnert, Éva. 1995. Objects in the world and objects in museums. *Nordisk Museologi* 2:123-30. http://www.umu.se/nordic.museology/NM/952/ESGarnert.html.

Simmons, John. 1993. Natural history collections management in North America. *Journal of Biological Curation* 1 (N3/4, 1991-92):1-17.

Smithsonian Institution. 1947. *Proceedings of the annual meeting of the Board of Regents of the Smithsonian Institution, 17 January, 1947*. Washington, DC: Smithsonian Institution.

———. 1977a. CPM report. Vol. 1 Findings and recommendations. Report on a collections policy and management study. Washington, DC. August 31.

———. 1977b. CPM report. Vol. 2 Background information. Report on a collections policy and management study. Washington, DC. August 31.

———. 1977c. A report on the management of collections in the museums of the Smithsonian Institution. Washington, DC. September 26.

———. 2001. Smithsonian Directive 600 collections management. Washington, DC.: October 26.

———. 2003a. *Building a Smithsonian for the future. Smithsonian Institution strategic plan 2004-2008*. Washington, DC: Smithsonian Institution, March.

———. 2003b. Smithsonian Institution performance plan fiscal year 2005. Washington, DC. September. (Draft.)

Smithsonian Institution. Authorized collecting units. Various dates. Collections management policies.

Smithsonian Institution. Committee on Compensation and Human Resources. n.d. The Smithsonian workforce: Challenges for the 21st century. Washington, DC.

Smithsonian Institution. Cooper-Hewitt, National Design Museum. 2001. Strategic plan for collections 2001-2005. New York. November 29.

Smithsonian Institution. National Museum of American History. 2003. Collections analysis — phase I draft of June 12, 2003. Washington, DC. (Photocopy.)

Smithsonian Institution. National Museum of Natural History. 1984. Collections management policy. Washington, DC. February 15.

Smithsonian Institution. Office of the Chief Information Officer. 2003. Smithsonian information technology plan FY2003-FY2008. Washington, DC. April. http://prism.si.edu/ocio/sitp.htm.

Smithsonian Institution. Office of Equal Employment and Minority Affairs. Various years. *Equal employment reports*. Washington, DC.

Smithsonian Institution. Office of Facilities Engineering and Operations. Office of Facilities Services. 2000. Smithsonian space use by category and building. Washington, DC. September.

Smithsonian Institution. Office of Policy and Analysis. 2002. *21st century roles of national museums: A conversation in progress*. Washington, DC: OP&A.

Smithsonian Institution. Smithsonian Center for Materials Research and Education. 2002. RELACT reference materials. http://www.si.edu/scmre/relact/relact2.htm.

Smithsonian Institution. Smithsonian Institution Archives. National Collections Program. 2003a. *Collections management assessment report.* Washington, DC: National Collections Program. May.

———. 2003b. Smithsonian Directive (SD) 600 Collections management. Implementation manual. Washington, DC. October 22. (Draft.)

———. 2003c. *2002 collections statistics*. Washington, DC: National Collections Program.

Smithsonian Institution Council. 1997. 1996 Smithsonian Institution Council report. Smithsonian Institution Archives, Washington, DC. January 28. (Photocopy.)

———. 2003. Office of Policy and Analysis staff notes from Smithsonian Institution Council meeting of October 30-31, 2003. Washington, DC.

Sola, Tomislav. 1999. Redefining collecting. In *Museums and the future of collecting*, 187-96. ed. Simon Knell. Brookfield, VT: Ashgate Publishing Company.

Statutes at large of the United States of America, 1789-1873. 17 vols. Vol. 9, 102-06. *An act to establish the "Smithsonian Institution," for increase and diffusion of knowledge among men*. Boston: Little, Brown and Co.

Stone, Ann. 2002. *Treasures in the basement? An analysis of collection utilization in art museums*. Diss. Santa Monica, CA: RAND Graduate School.

Suarez, Andrew V., and Neil D. Tsutsui. The value of museum collections for research and society. *BioScience* 54 (1)(January).

Suchanic, Angela C. 1993. *Smithsonian Institution initial needs assessment: Collections management*. Prepared for the Office of Planning and Budget. December 29. (Photocopy.)

Tait, Simon. 2003. Maritime museum floats the idea of tactical dispersal. *Times* (London), August 25. http://80-Web.lexis-nexis.com.proxygw.wrlc.org/universe/printdoc.

Talley, M. Kirby, Jr. 1999. The delta plan: A nationwide rescue operation. *Museum International* (1) (January-March):11-15.

Taylor, Lonn W., ed. 1987. *A common agenda for history museums*. Conference proceedings. February 19-20. American Association for State and Local History and the Smithsonian Institution. Nashville, TN: American Association for State and Local History.

Thomson, Keith S. 2001. Collections and research. Submitted to Re:Source May 15, 2001. http://www.resource.gov.uk/information/policy/collectionrsch.asp.

Today for tomorrow. Museum documentation of contemporary society in Sweden by acquisition of objects. 1980. Samdok. Stockholm: Nordiska Museet.

United Kingdom. Department for Culture, Media and Sport. 1999. *Collection storage excellence study*. Efficiency and effectiveness of government-sponsored museums and galleries. Measurement and improvement. London: DCMS. September.

United Kingdom Maritime Collections Strategy (UKMCS). 2002. UKMCS Working Group Minutes. http://www.ukmcs.org.uk/directors/16.01.2002_ukmcs_working_group_minutes.htm.

United States. Department of the Interior. 2003. *FY 2002 Performance and accountability report.* http://www.doi.gov/pfm/par2002.

———. 2004. *FY 2003 performance and accountability report*. http://www.doi.gov/pfm/par2003.

United States Congress. House of Representatives. 2004. H.R. 2691. An act making appropriations for the Department of the Interior and related agencies for the fiscal year ending September 30, 2004 and for other purposes. 108th Congress, 1st sess.

University of Nebraska State Museum. n.d. Mission statement. www.museum.unl.edu/mission/html.

van der Weiden, Wim. 2003. Opinion. *Museum Practice* (Summer):11.

Villano, Matt. 2003. Dewey goes digital. *Digital Libraries* (June 2003). http://www.universitybusiness.com.

Vogel, Carol. 2002. Museums team up to foot the bill and find the space. *New York Times*. October 17. http://www.nytimes.com/.

Wadum, Jørgen. 2003. Conservation at the crossroads. *Focus* (2).

Washburn, Wilcomb. 1968. Are museums necessary? Opinion. *Museum News* (October):9-10.

Weil, Stephen E. 1990. Rethinking the museum. *Museum News* (March/April):57-61.

——— . 1995. Introduction. *In A cabinet of curiosities: Inquiries into museums and their prospects,* xiii-xxii. Washington, DC: Smithsonian Institution Press.

——— . 1997a. Deaccessioning in American museums: I. *In A deaccession reader*, 63-70. ed. Stephen E. Weil. Washington, DC: American Association of Museums.

———. 1997b. The deaccession cookie jar. In *A deaccession reader*, 87-91. ed. Stephen E. Weil. Washington, DC: American Association of Museums.

———. ed. 1997c. *A deaccession reader*. Washington, DC: American Association of Museums.

Wheeler, Quentin D., Peter H. Raven, and Edward O. Wilson. 2004. Taxonomy: Impediment or expedient? *Science* 303 (January 16).

Whiting, Rick. 2002. Museums exhibit sharing tendencies. *Information Week*. March 11. http://www.informationweek.com/story/IWK20020307S0010.

Wilson, David M. 1984. National museums. In *Manual of curatorship: A guide to museum practice*. London: Butterworths.

Wright, David. 2002. On the right track. *Museum Practice* 19 (March):52-55.

Wright, Thomas. 1996. Collections and attractions: Whence collections in the age of the 'experience.' In *Clio in museum garb: The National Museum of American History, the Science Museum and the History of Technology*. Science museum papers in the history of technology No. 4. Session given at SHOT '96. London.

PHOTO CREDITS

❖ *Cover*: Key Marco Cat, Southwestern Florida, AD 1450, National Museum of Natural History, photo by Victor Krantz, 1977. ❖ *p. v*: *George Washington "Lansdowne Portrait"* by Gilbert Stuart, oil on canvas, 1796, National Portrait Gallery, Smithsonian Institution, acquired as a gift to the nation through the generosity of the Donald W. Reynolds Foundation. ❖ *p. viii*: Abhimanyu Hunting in a Forest, from a Mahabharata, South Asian, ca. 1885, opaque watercolor on paper, Arthur M. Sackler Gallery, purchase, S1990.73. ❖ *p. 1*: Thomas Alva Edison light bulb, National Museum of American History. ❖ *p. 2*: Dinosaur skull (*Dunkleosteous*), National Museum of Natural History, photo by Chip Clark, 1986. ❖ *p. 3*: George Washington's uniform, National Museum of American History, photo by Jeff Tinsley, 2000. *p. 5*: Malachite (from Shaba, Democratic Republic of Congo), National Museum of Natural History, photo by Laurie Minor-Penland, 1995. ❖ *p. 7*: *Calendarium*, Joannes Regiomontanus (1463-76), woodcuts of lunar eclipses, Incunabula Collection, Smithsonian Institution Libraries. ❖ *p. 8*: *L'art de la coëffure des dames françoises* [The art of coiffure for French ladies], Sieur Legros, nouvelle edition, Paris: Chez Anotoine Boudet, 1768, Cooper-Hewitt, National Design Museum, TT956.L519 1768, CHMRB. ❖ *p. 9*: Magnolia, Mark Catesby (1682-1749), *The Natural History of Carolina, Florida and the Bahama Islands, London*: for the author, 1731-43 [1729-48], 2 vols., Smithsonian Institution Libraries, gift of Marcia Brady Tucker. ❖ *p. 10*: Singer sewing machine, 1890-1910 Egyptian design, National Museum of American History, photo by Richard Strauss, 2003. ❖ *pp. 11-12*: *Sheep and Goat* (detail), Zhao Mengfu (1254-1322), Chinese, ca. 1300, handscroll, ink on paper, Freer Gallery of Art, purchase, F1931.4. ❖ *p. 13*: Antique cash register, National Museum of American History, photo by Laurie Minor-Penland, 1989. ❖ *p. 14*: Hunkpapa Lakota eagle-feather headdress, North Dakota, worn by Chief Rain in the Face, 1884-85, National Museum of the American Indian, photo by Walter Larrimore, 20/1419. ❖ *p. 15*: *Red Group (3 vessels)*, Dante Marioni, blown glass, 1995, Renwick Gallery of the Smithsonian American Art Museum, gift of the James Renwick Alliance. ❖ *p. 16*: Owls in the Castle tower, 1977, Smithsonian Institution Archives, Record Unit 371, Box 2, folder June 1977, #96-929. ❖ *p. 17*: *Waves at Matsushima*, Towaraya Sotatsu, fl. ca.1600-43, Japanese, Edo period, 17th century, screen, ink color, gold, and silver on paper, Freer Gallery of Art, gift of Charles Lang Freer, F1906.231. ❖ *p. 18*: Flamingo, National Zoological Park, photo by Jessie Cohen. ❖ *p. 19*: Man with Overcoat and Cane, 1933, Conrado Massaguer, graphite and ink, Abril Lamarque papers, Archives of American Art. ❖ *p. 20*: Iris Louise McPhetridge Thaden, Louise McPhetridge Thaden Collection, National Air and Space Museum (SI 89-22007). ❖ *p. 21*: Head (*wankenge*), Lega peoples, Democratic Republic of Congo, early-mid-20th century, ivory, resin, cowrie shells, National Museum of African Art, bequest of Eliot Elisofon, 73-7-315, photo by Franko Khoury ❖ *p. 22*: *Raven Steals the Sun*, blown glass, Preston Singletary, Tlingit, Seattle, Washington, 2003, National Museum of the American Indian, photo by Ernest Amoroso, 26/3273. ❖ *p. 23*: Ryan NYP "Spirit of St. Louis," National Air and Space Museum, photo by Dane A. 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Cummings. ❖ *p. 31*: *1948-C* (1948), Clyfford Still, American, 1904-80, oil on canvas, Hirshhorn Museum and Sculpture Garden, Joseph H. Hirshhorn Purchase Fund, 1992 (92.8). ❖ *p. 32* (*top*): *Historia naturalis*, beginning of Book 1, Pliny the Elder, Incunabula Collection, Smithsonian Institution Libraries. ❖ *p. 32* (*bottom*): Sumatran tiger cub, National Zoological Park, photo by Jessie Cohen. ❖ *p. 33* (*top*): Black neck swan and gosling, National Zoological Park, photo by Jessie Cohen. ❖ *p. 33* (*bottom*): 34-cent Langston Hughes stamp, Smithsonian National Postal Museum. ❖ *p. 34* (*top*): Ka'apor man's feathered headdress, Rio Gurupi, Canindé, Brazil, c. 1960, National Museum of the American Indian, photo by Ernest Amoroso, 23/3283. ❖ *p. 34* (*bottom*): Violin/banjo/fiddle beetle (*Mormolyce phyllodes*: Carabidae, SE Asia), National Museum of Natural History, photo by Carl C. Hansen, 1995. ❖ p. *35*: Kandula, born November 25, 2001, and mother, Asian elephants, National Zoological Park, photo by Jessie Cohen. ❖ *p. 36*: *Woman, a baby and a young girl*, Katsukawa Shunsho (1726-92), Japanese, Edo Period, hanging scroll, ink, color and gold on silk, Japan, Freer Gallery of Art, gift of Charles Lang Freer, F1898.104. ❖ *p. 37*: *Lightning Strikes*, blown glass, by Tony Jojola (Isleta Pueblo), New Mexico, ca. 1990, National Museum of the American Indian, photo by Ernest Amoroso, 25/4780. ❖ p. 38: *Point of Tranquility* (1959-60), Morris Louis (1912-62), American, magna on canvas, Hirshhorn Museum and Sculpture Garden, gift of Joseph H. Hirshhorn, 1966 (66.3111). ❖ *p. 39*: One-dollar colonial rush lamp and candle holder stamp, with brown candleholder inverted, 1986, Smithsonian National Postal Museum.

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