

# **THE ARCHAEOLOGICAL CURATION CRISIS IN ARIZONA: ANALYSIS AND POSSIBLE SOLUTIONS**

**A Report Prepared by the Governor's Archaeology Advisory Commission  
Curation Subcommittee**

Patrick D. Lyons, Subcommittee Chair  
E. Charles Adams  
Jeffrey H. Altschul  
C. Michael Barton  
Chris M. Roll

**14 November 2006**

## EXECUTIVE SUMMARY

This report was produced by the Curation Subcommittee of the Governor's Archaeology Advisory Commission (GAAC), a statutory body that advises the Governor and the State Historic Preservation Officer regarding archaeological issues. The goals of this document are to communicate to policymakers and to the general public the importance of archaeological curation, the crisis now threatening archaeological collections in Arizona, and possible solutions to the problem. The body of the report includes eight major sections:

- a short discussion of the scientific and ethical issues surrounding the curation of artifacts and records;
- a review of the legal context of archaeological curation;
- a history of the curation crisis and national responses to the problem;
- a status report on curation in Arizona based on a survey of major archaeological repositories in the state;
- a summary of information gathered through a series of public hearings;
- policy recommendations
- a list of references cited; and
- appendices

The information included was compiled from published sources, interviews with museum professionals, questionnaires submitted to local archaeological repositories, and oral and written testimony delivered at four public hearings held by the subcommittee, in Tucson, Phoenix, and Flagstaff, between January and September 2005.

In this report, we document a lack of adequate space and funding for curation of objects and records in the state of Arizona. A key indicator of the severity of this problem is the recent year-long moratorium on accessions by the Arizona State Museum, the official repository for archaeological materials recovered from state lands in Arizona and the only institution currently accepting collections from all areas of the state (Appendix A).

Three general policy recommendations are presented:

- Space available to repositories for curation must be increased. This can be accomplished in large measure through more efficient use of space currently suitable for this task, rehabilitation of space not suitable for curation, rental of additional space, and new construction. Limited and ethical deaccessioning of materials inconsistent with the mission of a given institution, through permanent transfer to another institution, exchange with another institution, or return to a donor, is also recommended.
- Funding for curation must be increased, through the use of interest-bearing accounts (endowments) and fee structures that realistically meet the costs of curation in perpetuity (including annual fees). In addition, federal agencies and the other entities that own the collections curated in Arizona's repositories must be convinced to take financial responsibility for materials accessioned in the era before curation standards and curation fees were developed.
- Collections growth must be effectively and aggressively managed through long-term strategic planning by repository staffs and the archaeologists who create collections. Each repository must determine the types of collections it will accept and under what conditions. The archaeological community must develop standards for in-field analysis and encourage non-destructive alternatives to excavation. Such alternatives include avoidance of archaeological sites, better use of remote-sensing technologies, and encouraging or even requiring more use of existing collections rather than new fieldwork. Under some circumstances, collections should be culled before accession, based on professional standards to be developed locally. Excavation plans that incorporate more limited but representative sampling (i.e., preserving more material from fewer contexts and/or from smaller portions of sites) must be encouraged.

## **ETHICAL AND SCIENTIFIC IMPETUSES TO CURATE**

The Register of Professional Archaeologists (RPA), the Society for American Archaeology (SAA), the Society for Historical Archaeology (SHA), and a number of other professional organizations have developed standards of conduct driven by the "ethical obligation to preserve...data...for future generations" (Society for Historical Archaeology 1993; Appendices B, C, and D; see also Childs 2001, 2002). Objects and records have values beyond archaeology, however. These include spiritual connections with descendant communities and educational opportunities for the general public.

Federal and state laws, and some county and municipal ordinances, require archaeological survey, surface collections, and/or excavations prior to ground-disturbing activities involving the use of public lands, public funds, and/or permits granted by government agencies (as discussed in detail below). The goal of these statutes is the preservation of our shared historical and archaeological heritage, through a process referred to as cultural resource management (CRM). Under relevant laws and regulations, the objects that archaeologists recover as a result of CRM projects, and their associated records, are equal to the scientific significance of the archaeological site that will be impacted or even destroyed by construction or some other activity. The sample of material recovered may be all that is left once the rest of the site is destroyed. Unfortunately, inadequate space and funding for curation have led to the deterioration of museum collections, and this problem continues to worsen as residential and commercial development increase and new collections arrive at already stressed repositories. The quotes below serve to underscore the frustrating difficulty of this situation:

It is unimaginable that objects once saved from the ravages of the bulldozer at great public expense confront a second threat in the one institution expected to preserve a nation's cultural heritage for the future – the museum (Ford 1984:136).

Archaeological recovery [of artifacts] is ironic without responsible curation and preservation for the future (Fitzhugh 1977:18).

Allowing collections to deteriorate or discarding archaeological objects due to space limitations undermines the protection of archaeological sites and the ability to obtain funding to do so.

From a strictly scientific standpoint, SHA (see also, Butler 1979; Christenson 1979; Childs 1995) asserts that "the discarding of archaeological materials...is not recommended... because current levels of knowledge may not adequately recognize the research value of certain artifact classes." This statement reflects the fact that changing research foci and ever-improving analytical methods in archaeology necessitate returning to existing collections. New techniques are rapidly developed, allowing more precise determination of the ages of artifacts and sites, how artifacts were made and used, and where artifacts were made. These techniques allow archaeologists to return to old collections and ask new questions or to revisit old questions from new perspectives (e.g., Barker 2004). As a result, researchers are now able to conclusively document trade and migration, among other processes.

Given the rapid pace of change in the discipline, it is quite difficult to anticipate the needs of future researchers. Indeed, it is impossible, given the constraints of money and time in the world of cultural resources management, for researchers to conduct all the different types of analyses that are currently available:

Cultural resource management is often considered to end when endangered resources are collected or excavated. Actually, this is an early step in the process. An increasing proportion of our preserved cultural heritage is being managed in museums, and it is in museums that much future archaeological

research will have to be done (Christenson 1979:161)

Although published and unpublished reports document the conclusions of archaeological research, these conclusions represent inferences based on material traces of behavior. Museum collections represent the empirical data underlying these inferences – the proof of archaeological discoveries:

If curation resources are not adequate, then reinterpretation and reproduction of results – fundamental tenets of science – become impossible (Trimble and Marino 2003:100)

In this sense, museum collections are like books in a library; researchers constantly return to them as knowledge expands (Christenson 1979; Farnsworth and Struever 1977; Lindsay et al. 1979). Nonetheless,

Without rehabilitation, many collections are inaccessible and useless for study and interpretation. Some already have lost research integrity, and more will do so as time passes and materials continue to [accumulate and] deteriorate (Childs and Sullivan 2004:14).

Therefore,

...immediate attention must be given to the post-excavation aspects of public archaeology which, in the long run, will provide the basis for scholarly study and preservation of the past and will be far more expensive (Fitzhugh 1977:18).

Objects recovered by professional archaeologists using proper techniques are more valuable, in terms of information potential, than objects recovered otherwise. They have the value of provenience and association added to them (i.e., precise documentation of the locations in which they were found and what other types of evidence were found nearby). Taxpayers have invested them with additional value by recovering, documenting, and curating them properly. Indeed, "curated collections...represent a growing resources whose long-term integrity and utility is enhanced...by responsible use (Barker 2003:71). This is because collections research is an additive process. As new analytical techniques are developed and applied (i.e., methods not available when a given collection was recovered and initially studied) and as more data accumulate, more and higher quality information is associated with curated objects.

## **THE LEGAL CONTEXT OF ARCHAEOLOGICAL CURATION**

A number of previous studies have reviewed in depth the federal statutes and regulations that both serve as the foundation of cultural resource management in the United States and represent the templates used to craft state and local ordinances (e.g., Carnett 1991, 1995; Lindsay and William-Dean 1980; Lindsay et al. 1979, 1980; Nepstad-Thornberry 2002; Sullivan and Childs 2003). Brief sketches of relevant federal and Arizona state laws and regulations are provided in this section.

## **Federal Statutes and Regulations**

The Antiquities Act of 1906 mandated that artifacts should be “properly cared for” after excavation (Thompson 2000). For most of the 20<sup>th</sup> century, curation was not a problem with universities and museums easily able to accommodate new collections. It was not until the passage of the National Historic Preservation Act (NHPA) of 1966 and the National Environmental Policy Act (NEPA) of 1969 that curation of new collections became an issue. These acts allowed the excavation of archaeological sites important enough to be eligible for the National Register of Historic Places to be considered a mitigating action of proposed destruction of these sites caused by federal undertakings. Curation of the recovered collections was an important component of data recovery. The costs of curation, however, were never adequately addressed by repositories. In practice, these costs were underestimated, and federal agencies were loath to recognize this fact.

The Archaeological and Historic Data Preservation Act (AHDPA) was enacted by the federal government in 1974. This legislation required that the Secretary of the Interior make efforts to determine ownership and the most appropriate repository for recovered artifacts and to issue regulations concerning the curation of federal archaeological collections. Unfortunately, the AHDPA had no sanctions associated with it and was largely ignored by federal agencies. In 1979, the Archaeological Resources Protection Act (ARPA) set forth procedures for obtaining permits for conducting archaeological fieldwork on federal lands. Federal ownership of artifacts excavated from federal lands was acknowledged, and the Act required the deposit of the resulting archaeological collections in federally compliant repositories pursuant to a formal written agreement between the involved federal agency and the repository. ARPA also required the Secretary of the Interior to issue regulations concerning the care and management of such archaeological collections (Carnett 1991).

The General Accounting Office (GAO) issued a report in 1987 entitled “Cultural Resources: Problems Protecting and Preserving Federal Archaeological Resources”, which pointed out numerous problems concerning curation of federal collections. As a result, Code of Federal Regulations Title 36 Part 79 (36 CFR 79), entitled “Curation of Federally-Owned and Administered Archaeological Collections,” was issued in 1990, providing guidelines (Appendix E). The areas covered include repository staffing, inventories, inspections, physical security, conservation, access, and use.

Also in 1990, the Native American Graves Protection and Repatriation Act (NAGPRA) was passed by Congress. This legislation required the inventory and repatriation of Native American human remains, together with funerary and other objects, held both in federal and federally funded repositories. NAGPRA included deadlines for compliance and penalties for noncompliance.

Subsequent to the issuance of 36 CFR 79 and NAGPRA, many federal agencies have recognized their responsibilities for the care and maintenance of archaeological collections. Some have built their own curation facilities, while others have partnered with federally recognized Native American tribes and Indian communities. Many agencies have not demonstrated such foresight. These agencies, most notably the Department of Transportation, rely heavily on state institutions. Such agencies have paid one-time fees for curation, knowing full well that these costs must be subsidized by the states.

## **State Statutes and Regulations**

The Arizona legislature enacted the Arizona Antiquities Act in 1927, amending it in 1960, 1973, and again in 1990. This act provided protection against the removal of archaeological artifacts from land owned or controlled by the State of Arizona, without a permit issued by the Director of the Arizona State Museum. Arizona Revised Statute (ARS) Section 41-841, et seq.

ARS Section 41-842 proscribes the mechanism for obtaining permits for excavation or collection of artifacts on state lands. Only institutions, organizations or corporations that the Director determines are qualified may obtain such permits and they must “undertake to propagate the knowledge to be gained and to preserve permanently all objects, photographs and records in public repositories under their own supervision or control, or the supervision or control of other similar institutions, organizations or corporations” (ARS Section 41-842(C)).

In 1990, disturbance of burials, or the removal of associated artifacts, was made contingent upon the permission of the Director of the Arizona State Museum and comprehensive provisions for the repatriation of sensitive Indian material were enacted (ARS Section 41-844, 41-865). ARS Section 41-844(A) currently requires that a person in charge of any excavation on state land report to "the Director of the Arizona State Museum the existence of any archaeological, paleontological or historical site or object that is at least fifty years old," and take reasonable steps to secure and preserve the object. The Arizona State Museum is responsible for the curation of such artifacts. ARS Section 41-844(I) requires that the expense of the curation resulting from a construction or similar project be borne by that project.

ARS Section 15-1631(A) established that “(t)here shall be a state museum for the collection and preservation of the archaeological resources, specimens of the mineral wealth and the flora and fauna of this state.” Subsection (B) of this section provides that “(t)he Arizona board of regents shall direct and manage the museum and shall set apart sufficient space to accommodate it.” In order to assist the Arizona State Museum in properly administering the Arizona Antiquities Act and state laws concerning the discovery of human remains, the Arizona Board of Regents have adopted rules implementing ARS Section 41-865, Section 15-1631 and Section 41-841, et seq. These rules are found in Chapter 8 of the Arizona Board of Regents Policy Manual, Rule 8-204, entitled Disposition of Collections and Records (Appendix F).

## **A BRIEF HISTORY OF THE CRISIS AND NATIONAL APPROACHES TO THE PROBLEM**

Beginning in the early 1970s, archaeologists recognized what has come to be called the curation crisis (e.g., Childs 1995; Davis 1972; Lipe 1974; Marquardt et al. 1982). Federal legislation and regulations enacted during the 1960s, including the Reservoir Salvage Act (1960), the National Historic Preservation Act (1966), and the National Environmental Policy Act (1969), and similar state statutes resulted in an explosion of archaeological fieldwork and collections of artifacts and associated records requiring curation. As residential and commercial development have increased over time, with population, growth in the volume of archaeological materials recovered as a result of legally mandated fieldwork has continued to outpace increases in funding and space available for curation. For example, between 1975 and 1990, the U.S. Army Corps of Engineers spent \$165 million on archaeological field work and "virtually nothing on curation" (Childs and Sullivan 2004:7). In one of the first papers to address this problem, William Lipe (1974) proposed a comprehensive, ethics-based approach to preserving the archaeological record of sites, artifacts, and records.

### **A Conservation Model for American Archaeology**

Lipe (1974) argued that archaeological sites and artifacts represent non-renewable resources and, as such, the use of both should be guided by the principle of conservation:

At some indefinite point in the future...archaeological sites, at least of the prehistoric period, will be very rare and field work almost a thing of the past. All that will be left for the prehistorian of the future will be the reports...and

the basic records and collections that remain....Published works are likely to grow more and more obsolete through time and to receive less attention, whereas basic records and collections are likely to grow more important and to be frequently consulted...as our supply of actual sites dwindles....The only direction that the need for storage facilities will go is up (Lipe 1974:238-239).

He suggested improvements in four areas: curation space, funding for curation, reducing the flow of materials into repositories, and encouraging more use of existing collections. His recommendations regarding the first three of these areas are discussed below.

### *Space*

Lipe recommended not only increasing the amount of space available for curation, but also making wise use of what space exists currently. He proposed a space hierarchy based on frequency of collections use, such that often utilized materials would remain accessible whereas those not frequently examined would be consigned to "deep storage" (see also Ford 1984). Lipe also addressed the difficult issue of deaccessioning – the process of removing objects from a museum's collections through permanent transfer to another institution, exchange with another institution, return to a donor, or purposeful destruction. He advised that, when there is no other option but to deaccession, representative samples of each collection be preserved.

### *Funding*

Lipe addressed the issue of funding from the perspective of the storage hierarchy discussed above. He recommended situating deep storage facilities in inexpensive locations. In addition, he pointed out that if decisions regarding the packing and actual physical context of such materials were guided more by conserving space than preserving accessibility, cost savings would be realized. He also urged archaeologists to initiate dialogs with project sponsors in order to educate them about the true costs of curation and to obtain more comprehensive funding in this area.

### *Managing Collections Growth*

Lipe's recommendations in this area included an emphasis on avoidance of archaeological sites as ground-disturbing activities continue – through the redesign of projects (e.g., choosing an alternate alignment for a highway), rather than recovering data from those sites located in the original project area. He also argued for better use of sampling when excavations must occur, that is, the recovery of a representative sample (not necessarily a large sample, but a sample useful for current and future scientific research) from the site to be impacted.

## **Understanding the Crisis and Responding**

By the late 1970s, archaeologists and museum workers, through their professional organizations (e.g., the American Anthropological Association, the Society for American Archaeology) convened a number of conferences and sponsored studies focused on archaeological curation (e.g., Ford 1977; Marquardt 1977; Lindsay and Williams-Dean 1980; Lindsay et al. 1979, 1980). As noted above, the U.S. General Accounting Office (1987) also launched its own investigation in the 1980s. As a result, severe problems were documented nationwide, providing strong empirical support for the conclusions that Lipe had reached regarding the critical needs of archaeological repositories. Analysis showed that repositories

and federal agencies were addressing the issues of space and funding by proposing and applying strategies to conserve existing space, increase available space, increase funding, and stem the flow of materials into museums.

Nonetheless, these studies also pointed out that available space itself was not the main issue, so much as the quality of available space, in terms of personal safety, collections security, environmental control, and access for researchers and the public (Ford 1977; Lindsay et al. 1979; Marquardt 2004; Marquardt et al. 1982). These studies also made plain the fact that no standards were available to guide curators of archaeological collections and that the profession was in need of a system for evaluating the fitness of institutions to serve as archaeological repositories (Lindsay et al. 1979).

The continuing space and funding crunch lead to the decision by a number of institutions, including some in Arizona, to cull collections after analysis and before curation (i.e., to curate a limited number of "representative" samples) and/or to deaccession large portions of previously recovered materials, whether or not they had been analyzed (again, preserving small samples of specimens from each collection). As discussed below, archaeologists who have recently returned to these samples with new research questions and new techniques have found that the notion of what is truly "representative" changes over time as more information accumulates and archaeologists develop a better understanding of which axes of variability are important and which are not. The classification of pottery types, for example, becomes increasingly refined over time, such that previously recognized types can be split into subtypes that provide increasingly fine chronological resolution (i.e., archaeologists can date sites and portions of sites more precisely, allowing better models of change through time). Unfortunately, many of these remnant collections cannot be fully integrated with recently refined models of the past.

Another response to rising costs and a decreasing amount of space for curation has been the increased use of in-field analysis, or non-collection survey (Butler 1979), a technique that is now required by most federal agencies and the Arizona State Museum (with limited exceptions; see Appendix G). William Butler published a blistering critique of this approach in 1979 which, nonetheless, seems to have had little effect on the method's popularity. Butler's arguments against non-collection strategies boil down to two points: (1) it is impossible to record all possible information at once, let alone under field conditions; and (2) such work does not preserve research potential in perpetuity and, therefore, does not comply with relevant statutes or established ethical principles.

During the 1970s, museums first began to charge curation fees to the sponsors of the projects that resulted in the material to be curated (usually federal agencies; see Appendix H). A recent study of curation fees, based on a survey of 112 institutions, indicated a steady increase over time in the percentage of repositories charging curation fees, from 8% during the 1970s to 62% as of 2002 (Childs and Kinsey 2003). This same study resulted in the following list of tasks covered by curation fees:

- initial processing of collections (including cleaning, labeling, and cataloging, if necessary)
- appropriate (archivally stable) packaging materials
- conservation treatments
- a percentage of institutional overhead (most often a storage fee based on unit volume)
- environmental control (both temperature and humidity)
- access

Fee structures vary, but usually take the form of flat, one-time fees (per box or per unit of volume), processing fees, annual fees, or some combination of these three. Most repositories charge a one-time fee plus processing costs. Many are now considering or have already begun



to charge an annual fee in addition. Several have begun using interest-bearing accounts to generate revenue (an idea first published by Marquardt et al. in 1982).

Unfortunately, most experts agree that the fees charged, until very recently, were merely "symbolic" and did not begin to cover the true costs of curation in perpetuity. This is why the notion of annual fees is so logical and appealing. For much of the last twenty to thirty years, repositories have been using some portion of funds derived from current curation agreements to rehabilitate collections accessioned before curation fees were collected (Lindsay et al. 1979). The goal has been to rescue the research potential of these threatened resources. Although this is a laudable goal (see, e.g., Marino 2004), it has compromised the ability of repositories to meet the needs of more recently accessioned and future collections.

In 1990, 36 CFR 79 was enacted. As noted above, these regulations provided good minimal standards for curation of federal collections. Despite the fact that the regulations acknowledge federal agencies' financial responsibility for assuring the adequate care of federal collections (including "legacy" collections), maintaining 36 CFR 79 standards remains an unfunded mandate in many cases.

### **The Situation Today**

For nearly 30 years, reports on the status of archaeological curation have highlighted the lack of storage space. This problem is still with us and is worsening (Childs and Sullivan 2004:13)

The veracity of the quote above can be demonstrated by briefly examining two case studies: the Navajo Nation Museum (see Appendix I) and the archaeological repositories located in the state of Colorado. The Navajo Nation Museum, which only accepts materials recovered from the Navajo Reservation, is no longer receiving collections. The situation has become so grave that staff have resorted to storing collections in "piggyback" cargo containers used to transport goods on ships and trains. These containers do not meet curation standards: they are not climate-controlled and they often leak. Furthermore, it is impossible at the present time to allow researchers access to the materials inside them. The Navajo Nation is currently encouraging in-field analysis, as there simply is nowhere the tribe can curate any artifacts that might be generated otherwise.

At the same time, an alternative to archaeological excavation, that is in keeping with a traditional Navajo perspective on archaeological sites, has become popular. The Navajo Nation is more interested in ethnographic than archaeological data, that is, how a place (even a place that has not been occupied for 1000 years) fits into Navajo traditional history rather than how the objects found there help to tell a scientific, archaeological story. This shift in focus to the recording of present-day conceptions of the past rather than the actual material traces of that past, however, does not result in the preservation of artifacts and their associated records for access by researchers in perpetuity.

The situation in Colorado is just as dire (Appendix J). A recent assessment documented a lack of funding and curation space that has threatened the majority of collections now housed in repositories (because their care is not consistent with current standards). As of 2001, only one institution in Colorado was still accepting materials from all areas of the state. Indeed, curatorial space is at such a premium that at least one archaeological contractor has reported that a federal agency has recently been taking bids for "non-collection excavations" in eastern Colorado (Appendix I).

There is good news to report, however. The condition of collections and the quality of space used for curation have improved nationwide, and the use of existing collections for research is increasing rapidly (Cantwell et al. 1981; Childs 1995; Childs and Sullivan 2004; Marquardt 2004; Nelson and Shears 1996; Sullivan 1992). In addition, the federal government

has funded new regional curation centers, including two in Arizona, the Archaeological Research Institute (at Arizona State University) and the Gila River Indian Community's Hohokam Heritage Center.

The San Diego area's archaeological community responded to their curation crisis in 1998 by founding the private, non-profit, San Diego Archaeological Center. This institution currently employs a two-tiered per-box curation fee. One fee (\$700) is charged for each box of material to which the Center assumes title. (This is twice the amount charged by the Arizona State Museum and other repositories in our state.) An initial fee of \$180 per box and a fee of \$60 per box annually (under five-year, renewable contracts) are charged by the Center if title to the materials curated is not transferred. The Center currently meets all federal and state standards for archaeological curation.

The state legislature and the governor of Maryland reacted to local problems during the late 1990s by establishing the Maryland Archaeological Conservation Laboratory (MAC Lab) at Jefferson Patterson Park and Museum. Besides acting as a repository (which meets federal standards) and a collections research facility, MAC Lab offers fee-based conservation services and consulting to archaeological contractors. This area of MAC Lab's operations was explicitly designed to generate revenue in support of its long-term curatorial activities. Coeval with the establishment of the facility, the state's archaeological community came together to create local standards for non-collection fieldwork and culling.

## **THE LOCAL PROBLEM**

There are three major, regional repositories in Arizona, the Arizona State Museum (ASM), Arizona State University (the Museum of Anthropology and the Archaeological Research Institute), and the Museum of Northern Arizona (MNA). ASM is the only institution in Arizona currently accepting collections from all areas of the state. ASU's collections include materials from across the state but are dominated by artifacts and records generated as a result of projects in central and southern Arizona. MNA, located in Flagstaff, focuses its curatorial mission on materials recovered from the Colorado Plateau (the Four Corners region) but cares for collections from other portions of the state as well.

Other local repositories have special missions or currently curate relatively small amounts of material:

The Hohokam Heritage Center – mission limited to projects on Gila River Indian Community lands and Bureau of Reclamation (BOR) projects; funded by a BOR endowment.

Pueblo Grande Museum – located in Phoenix, the official repository for archaeological materials recovered from the City of Phoenix.

Sharlot Hall Museum – located in Prescott, accepts materials from a broad region but has very limited capacity compared to the other repositories discussed.

Western Archeological and Conservation Center – located in Tucson, a unit of the National Park Service (Department of the Interior), curatorial mission limited to federal collections.

## Survey of Regional Repositories

In order to gather specific information useful in characterizing the severity of the problem and to examine institutional responses, the commission submitted a written questionnaire to staff at the state's major archaeological repositories. Each was also asked to provide a copy of its curation policies (Appendix K). The following questions were asked:

1. What is the repository capacity of your facility? When was it built? Has it been expanded?
2. How long, at the current rate of accessions, will it take to reach capacity?
3. Is it possible for you to chart (actual data) or project/estimate annual percentage growth of collections (as measured in terms of volume) over time? If so, please tell us how collections have increased/space has decreased at your facility over time.
4. What percentage of your collections are owned by federal agencies? State agencies? Tribes? What percentage is privately held?
5. Does your facility currently meet 36 CFR 79 standards? Are there plans in the works to meet standards? Are there cost estimates available?
6. Please describe your institution's curation fee structure. Please explain the thinking behind it. If the fee structure has changed recently, please tell us why and please describe the previous rate structure and the thinking behind it.  
Does your current rate structure cover:
  - personnel to process/rehabilitate incoming collections
  - archival quality storage materials
  - repository overhead (furniture, computers, etc.)
  - collections care (including environmental control)
  - making collections accessible to researchers/students
7. What are the sources of revenue for your institution that support repository activity?
8. Please provide some measure of how often your collections (including whole vessels, repository collections, site files, archives) are used by professional researchers. Please provide a similar measure of how often these materials are accessed by students.
9. Does your institution have a formal policy regarding culling of collections prior to or after accession? If so, please provide us a copy.
10. Does your institution have a formal policy regarding the curation of digital media?
11. Can you provide a breakdown of actual costs incurred by your work unit in its curatorial mission for this year and previous years?

## Summary of Survey Results

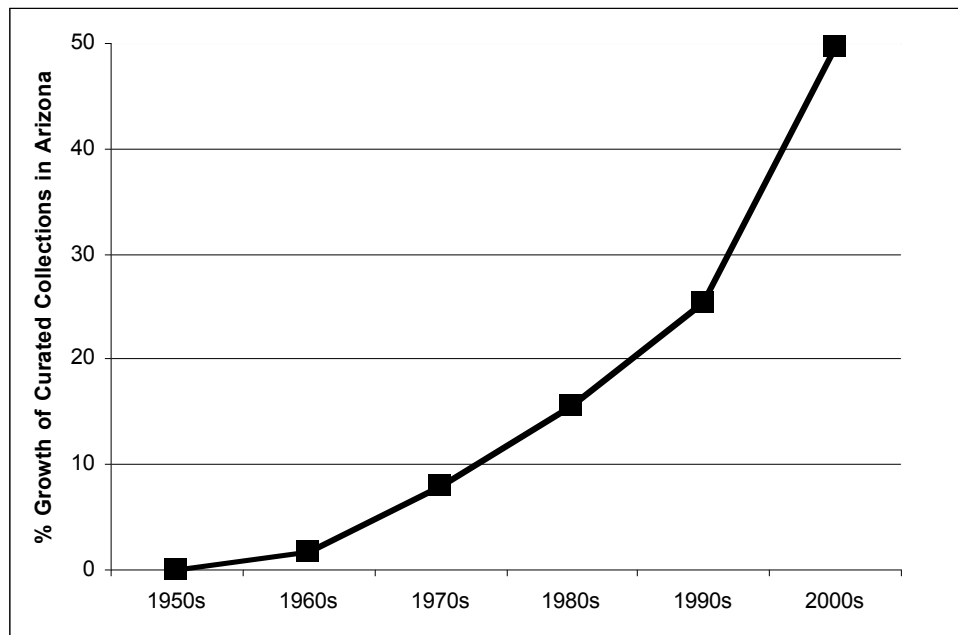
The complete text of the responses received from Arizona repositories is reproduced in Appendix K. Table 1 presents a summary of this information and Figure 1 charts percentage growth of curated collections in Arizona, by decade, beginning with the year 1950.

**Table 1.** Responses to repository survey.

<b>Question</b>	<b>ASM</b>	<b>ASU (MA, ARI)</b>	<b>MNA</b>	<b>PGM</b>
Space?	24,000 cubic feet	14,100 square feet	11,992 square feet	4000 square feet
When built?	1924-1963	1940s-1960s	1935-1970s	1995
Expanded?	See above	See above	See above	2005
When full?	6-7 years	Presently full	At least 5 years	10-15 years
Annual growth?	1200 cubic feet per year; 70s=1500; 80s=6201; 90s= 7885; 00s=5680	50s=461 cataloged specimens; 60s=17166; 70s=59732; 80s=100182; 90s=24969; 00s=685	Grew rapidly in 1960s-80s; slow recently	90s=17% increase per year; 00s=8-10% per year
Ownership %?	Federal=25-30; State=60 Tribes=10; Private<5	Federal=52; State=24 Tribes=2; Private=22	Federal Tribes=80; State <5 Private=13	Federal<1%; State<1%; Tribes<1%
Meets standards?	No (lacks humidity control)	No (lacks sprinkler system)	No	Yes
Plans to meet standards?	No plans stated except pottery vault.	No, costs too prohibitive.	2007/2008:new 15,000-square-foot facility that does; 2009/2010: another	See above
Costs for plans?	N/A	N/A	\$3-5 million	See above
Curation fee?	\$350/box; \$225 registration fee	No outside projects currently accepted; \$500-1000/box estimate for future	\$350/box; \$30/diagnostic artifact; \$5/image	\$20 per person/field-day
Covers costs?	Salaries, some overhead; not in perpetuity		All initial; not in perpetuity	Collections care, research support not covered
Sources of revenue?	Self-sustaining (salaries), facilities provided by UA	Virtually all from ASU; ARI has small BOR endowment	ONHIR <sup>1</sup> -\$400,000 endowment covers 2000 cubic feet	City funds, city bonds, museum auxiliary
How often used?	2005: research=43; loans=30; archives=530	2003-2005:94	171 in five years	Researchers:3-4 times per year; Students:2-3 per year
Culling policy?	Policies against, except some historic materials; Director must approve	Does not cull	Does not cull; must ask owning agency	Policies against, except some historic materials; committee must approve
Digital curation policy?	Has requirements, no final policy	No	No	In preparation
Actual costs?	Not given	Not given	2005 income=\$90,000; costs= \$67,500	Not given

<sup>1</sup>Office of Navajo-Hopi Indian Relocation

**Figure 1.** Percentage growth in curated collections in Arizona by decade.



## **GAAC CURATION SUBCOMMITTEE HEARINGS**

In order to gather information from the local archaeological community, museum professionals, and Native American tribal groups regarding the current status of archaeological curation in Arizona and possible responses to perceived problems, the GAAC Curation Subcommittee held a series of four public hearings:

- 19 January 2005, at ASM, in Tucson
- 15 June 2005, at ASM, in Tucson
- 15 July 2005, at the Museum of Northern Arizona, in Flagstaff
- 15 September 2005, at Pueblo Grande Museum, in Phoenix

Invitations were extended to all ASM archaeological permit holders, all federally-recognized tribes with traditional and/or reservation lands located in Arizona, representatives of all state and federal land managing agencies, the State Historic Preservation Office, and the faculty of the anthropology departments at the University of Arizona, Arizona State University, and Northern Arizona University.

A total of fifty people attended these hearings, including sixteen representatives of for-profit cultural resource management firms, eight tribal representatives, seven federal agency employees, five employees of private museums, four city museum staff members, four ASM employees, three representatives of other state agencies, two employees of nonprofit organizations devoted to the preservation of archaeological resources, and one university professor. The minutes of these hearings are included in Appendix I. The commission also received written testimony from the School of Human Evolution and Social Change (formerly the Department of Anthropology) at Arizona State University (Appendix L), and the staff of Desert Archaeology, Inc., a for-profit cultural resource management company (Appendix M). The key topics of discussion included:

- increasing available curation space
- increasing curation funding

- culling and deaccessioning
- in-field analysis/non-collection strategies

## **Curation Space**

Attendees of the Flagstaff meeting introduced the subcommittee to a plan that has long been discussed: to transfer ownership of Fort Wingate (near Gallup, New Mexico) from the Department of Defense, to the Bureau of Indian Affairs for use by the Navajo Nation and the Pueblo of Zuni. It has been proposed that the barracks could be used as a research facility, lodging for researchers, and an administrative center. The ammunition bunkers could then serve as collections storage areas. The bunkers are characterized by "passive" climate control, as a result of the fact that they are partially buried and also are ventilated. Their contents, crates of ammunition placed there in the 1940s, reportedly have been preserved amazingly well: the heads of the nails used to construct the crates were still shiny and the rope handles were still pliable (nearly 50 years later).

The attendees suggested that the space available at Fort Wingate would not only solve the Navajo Nation's current curation crisis, but also meet the curation needs of the Four Corners region for quite a while. It was suggested that a Heritage Fund grant could be obtained to help pay for the retrofitting of the facility and that there might also be the possibility of obtaining money through transportation enhancement grants, as Fort Wingate is located in the Interstate 40 corridor. A number of attendees saw this as an opportunity for the tribal communities of the northern Southwest to come together and lobby as a group to obtain access to this space. Added bonuses would include the generation of jobs for Native Americans and increased commerce in the vicinity of Gallup. It was decided that support should be mobilized among the Four Corners State Historic Preservation Offices, the Tribal Historic Preservation Offices, tribal cultural resources managers, the Intertribal Council, and Native American groups in Arizona and New Mexico.

It was also reported that the Museum of Northern Arizona has plans for a new curation facility. Ten million dollars will be required to fund the construction and a \$3-million pledge has already been received. An architect has already completed a conceptual design.

## **Funding for Curation**

Because curation is designed to continue in perpetuity, attendees agreed that endowment funding is an especially attractive model. It was suggested that the commission explore the possibility of securing money from the Arizona Heritage Fund to create a curation endowment. It was also agreed that, because curation requires care in perpetuity, public institutions rather than private sector organizations are best charged with this responsibility. In addition, it was noted that curation could never be conceived as a money-making enterprise.

Several attendees called attention to the fact that the Gila River Indian Community and the Salt River Pima-Maricopa Indian Community had both recently donated very large sums to help complete ASM's new pottery vault – a grant-funded project that represents a significant rehabilitation of curation space designed to better preserve the largest collection of Native American ceramic vessels in the world. The fact that tribes made these gifts in support of preserving their heritage lead some attendees to discuss the possibility of asking local descendant communities to contribute to a curation endowment fund. It was noted that tribes with state gaming compacts are required to donate large amounts of money each year and that curation might be seen as a worthy use of such funds.

ASM and MNA recently submitted a joint funding request to congress asking for a special appropriation of \$1.5 million through the Bureau of Indian Affairs to support long-term curation planning, the development of new archaeological sampling strategies and curation

guidelines, and the creation of an internet-based cultural resources management information network (Appendix N). Although this request was not successful, the parties plan to resubmit in the near future.

### **Culling Collections Before Curation and Deaccessioning Curated Collections**

There is strong consensus in Arizona's archaeological community against both culling and deaccessioning. Discussion of these practices resulted in the conclusion that they present the same ethical problems and that related problems are associated with in-field analysis (discussed below). Nonetheless, many attendees expressed the opinion that rising curation costs and ASM's new, per-box curation fee structure are encouraging culling and non-collection survey/in-field analysis among archaeological contractors.

It was reported that culling by contractors and the abandonment of some artifacts in the field (especially large ground-stone objects such as metates – the netherstones used to grind corn) is currently going on unsystematically, in that choices are driven by the maximization of profit rather than the preservation of the best sample and the highest quality information. These activities are, in fact, not permitted under the repository agreements signed by those who plan to submit collections for curation by ASM and Pueblo Grande Museum (see Appendices O and P). Culling/non-collection policies must be developed by the contractor in consultation with the land manager/owner and the repository.

The following quote, taken from the SHA Standards and Guidelines for the Curation of Archaeological Collections, very effectively encapsulates the opinions expressed by those who attended the hearings:

Decisions about any deaccessioning [or culling] of archeological materials should be made by or in consultation with professional archaeologists... Adequate samples should be retained of any material classes that are Deaccessioned [or subjected to culling]. Defining what is an adequate sample will vary by material and should take into account the range of variation within a particular artifact class (Society for Historical Archaeology 1993).

Additional comments regarding culling can be summarized in terms of four points:

- Although culling, or decisions about what to record/collect in the field should be made by competent professionals, in the case of historical archaeology (resources between 100 and approximately 450 years old) such experts are in short supply.
- The decision to cull is preceded by a faulty assumption: that current specialists fully understand and can accurately measure all the meaningful variability exhibited by the objects at hand (i.e., that a negligible amount of information will be lost to future generations as a result of the culling process).
- There are a few classes of material (machine-manufactured objects of the historic period such as tin cans, window glass, and bricks, assuming these have not been subsequently modified for other uses) and site types (can dumps, quarries, brick yards) that present opportunities for responsible in-field recording and culling, but these are few and far between. Even in these cases, expert input is required, and guidance in dealing with some of them has recently been provided by the State Historic Preservation Office (Sullivan and Griffith 2005).
- At all stages of archaeological research, there is sampling: survey (looking for sites) most often involves the inspection of transects rather than 100 percent coverage of an area; small test excavations are conducted to determine the nature and significance of sites; entire sites are almost never excavated even when it is decided that they are

significant and cannot be protected from proposed ground-disturbing activities; screens are used to recover artifacts and ecological evidence above a certain size, and so on.

Given all this sampling, isn't it prudent to keep the sample that is finally recovered?

A number of attendees offered thought-provoking examples of changes through time in what is or has been considered "redundant information" in archaeological collections and also classes of data not available to previous generations of researchers (there was considerable overlap between these two categories). These include but are not limited to:

- wooden timbers in archaeological sites (which were previously used to fuel the campfires of fieldworkers and which, through dendrochronology, now allow the most precise dating of archaeological sites possible)
- charcoal (which was previously discarded and is now used in radiocarbon dating and Dendrochronology; it is also examined to determine the species of plants used for food, fuel, and construction materials)
- DNA (which can now be extracted and used to identify links between ancient and modern groups)
- the mineralogical and/or chemical composition of pottery, flaked, and ground stone tools (used to document the exchange of objects between different ancient groups by matching artifacts with the sources of the raw materials from which they were made);
- usewear (the microscopic traces indicative of different motor patterns associated with different activities, allowing archaeologists to tell what an artifact was used for and exactly how it was used)
- residues (traces of foods cooked in ancient vessels or the blood of game animals found on butchering tools which can now be identified using new chemical techniques)
- pollen (not recovered regularly until the 1960s, one of the keys to reconstructing past climate patterns, agricultural production, and economic transactions)

Indeed, some attendees pointed out that there was a time when archaeologists did not customarily employ screens to recover artifacts.

Another important point was made regarding the importance of maintaining large numbers of similar specimens from any given site or context within a site. Many of the new techniques that yield important information result in the partial or complete destruction of the specimen subjected to analysis. In short, it is imperative that a large number of specimens be available so that some may be sacrificed to gain knowledge otherwise unobtainable.

### **In-Field Analysis/Non-Collection Strategies**

Despite the fact that non-collection strategies are now employed widely (Klein et al. 2005; Appendix Q), there is strong consensus in Arizona's archaeological community against these approaches. The objections most commonly raised were: (1) in-field analysis, though it is popular because of low curation costs, is most often conducted by those who know the least about artifacts, and the conditions for analysis in the field are far from ideal, resulting in poor quality data; and (2) attempts to relocate recorded objects for future study have often been fruitless as resources have been stolen or destroyed post-analysis.

Most attendees agreed that if in-field analyses are to continue, qualified specialists must be involved and that standards for training and data collection must be developed. It was suggested that a statewide committee be formed under the auspices of the State Historic Preservation Office for the purpose of creating these standards. The point was made that NAGPRA required physical anthropologists to develop standards for in-field analysis and that archaeologists should now do the same. It was suggested that standards require a system of sanctions for not adhering to them and that the Register of Professional Archaeologists might be a good partner as the archaeological community of Arizona moves forward on this issue.



## **POLICY RECOMMENDATIONS**

Although the curation crisis has been building for more than thirty years, and despite the fact that its pace is accelerating, every time a group of professionals has convened to discuss the problem, the same related themes emerge: space, funding, and managing collections growth (Trimble and Marino 2003:100). These were first identified by Lipe in 1974. Lipe's fourth area of focus, encouraging use of existing collections, has also received a great amount of discussion, and archaeologists in Arizona believe that such a policy falls under the heading of managing collections growth.

### **Space**

Arizona is the second-fastest growing state in the United States and its major repositories are due to be full again within the next five to ten years. A startling measure of the upward trend in archaeological work in the state has been provided by ASM's archaeological site files office, which reports a 250% increase over the last four years in information requests by cultural resource managers (Karl 2006)<sup>1</sup>. Increased requests for information translates into increased fieldwork and more collections to curate. Given these realities, the subcommittee makes the following recommendations regarding space (some of these measures have already been adopted or are to be implemented in the near future):

#### *Maximize Existing Space*

Repack existing collections, add compact storage, keep the most heavily used materials in the most accessible locations.

#### *Acquire New Space*

Expand into lower-rent, off-campus, warehouse space – use this location for "deep storage" of rarely used collections. ASM has adopted this strategy. It now rents an off-campus warehouse space capable of holding 13,800 cubic feet of material. The rent and associated expenses total more than \$70,000.00 per year.

#### *Retrofit Available Facilities*

Adapt Fort Wingate, NM for curation of Colorado Plateau collections.

#### *Deaccessioning*

Pursue this strategy when appropriate and legal: objects and collections that do not fit the mission of an institution and/or have not been accompanied by curation fees.

### **Funding**

Curation costs money, but then, what is the value of an irreplaceable resource (Butler 1979:798)?

The curation of legacy collections is an unfunded mandate in most cases. Repositories should continue to urge federal agencies to take responsibility for their collections (the majority of what is currently curated in Arizona). Repositories should also work with the state government to obtain more financial support for the care of state-owned collections, perhaps through use of part of the Heritage Fund or the creation of a separate curation endowment.

Curation fee rate structures must realistically reflect the costs involved:

- personnel to process incoming collections (artifacts and associated documents)
- archival quality storage materials

- repository overhead (computers, furniture, etc.)
- collections care (including environmental control)
- accessibility to researchers
- annual costs in perpetuity

Per-box rate structures encourage unsystematic culling and should be replaced or accompanied by formulas for determining the average number of boxes expected to be generated per person-field-day.

The standardized training of experts to conduct in-field analysis, particularly in historical archaeology (see below) should be funded. Financial support for curation should be solicited from fellow stakeholders, such as tribes. Archaeologists must do a better job of communicating to policymakers and to the general public the research and educational potential of collections, and the high costs involved in caring for them. The energy of avocational archaeologists should be channeled into work with existing museum collections (cataloging, analysis, rehabilitation of old collections, etc.) rather than fieldwork.

### **Managing Collections Growth**

We must not excavate new sites if research on existing collections provides the data to test new ideas....[we must] value and promote, rather than discourage, collections research for...master's and doctoral theses and other projects (Childs and Sullivan 2004:17).

Managing the growth of collections is one area that many groups, including the Colorado committee, have neglected. Our work indicated that we should:

- Support/require more use of existing collections (particularly for MA theses and Ph.D. dissertations) – this would create a labor force to improve collections conditions (rehabilitate) and improve inventories, easing future use
- Support/require more avoidance (including creative avoidance, such as site burial)
- Support/require more in-field analysis (with better training and standards established by a committee under the auspices of SHPO)
- Support/require better sampling and research designs (focus on generating information rather than artifacts, per se); archaeologists in Arizona should consider excavating less and curating everything recovered.
- Support culling in the context of statewide standards established by committees under the auspices of SHPO and curation agreements with repositories and project sponsors/land owners
- Support/require active versus passive accession policies (Burcaw 1997:56-61; Sullivan 1992); encourage conscious decision-making about what to accept (relative to institutional mission)
  - decline collections that do not meet standards and/or have low research potential (Sullivan 1992)
  - engage in long term planning regarding representativeness of extant collections relative to the local archaeological record (Sullivan 1992)

**FOOTNOTE**

1. As of October, 2006, information requests had increased 290% (Karl, personal communication).

## REFERENCES CITED

Barker, Alex W.

- 2003 Archaeological Ethics: Museums and Collections. In *Ethical Issues in Archaeology*, edited by Larry J. Zimmerman, Karen D. Vitelli, and Julie Hollowell-Zimmer, pp. 71-83. AltaMira Press, Walnut Creek, California.
- 2004 Stewardship, Collections Integrity, and Long-term Research Value. In *Our Collective Responsibility: The Ethics and Practice of Archaeological Collections Stewardship*, edited by S. Terry Childs, pp. 25-41. Society for American Archaeology, Washington, D.C.

Burcaw, G. Ellis

- 1997 *Introduction to Museum Work*. Third edition. AltaMira Press, Walnut Creek, California.

Butler, William B.

- 1979 The No-Collection Strategy in Archaeology. *American Antiquity* 44(4):795-799.

Cantwell, Anne-Marie, James B. Griffin, and Nan Rothschild (editors)

- 1981 *The Research Potential of Anthropological Museum Collections*. New York Academy of Sciences, New York.

Carnett, Carol L.

- 1991 *Legal Background of Archeological Resource Protection*. Technical Brief No. 11. Archeological Assistance Division, National Park Service, Washington, D.C.
- 1995 *A Survey of State Statutes Protecting Archeological Resources*. Archeological Assistance Study No. 3. Archeological Assistance Division, National Park Service, Washington, D.C.

Childs, S. Terry

- 1995 The Curation Crisis: What's Being Done? *Federal Archeology* 7(4):11-15.
- 2001 SAA Committee on Curation. *SAA Archaeological Record* 1(2):10-11, 37. Society for American Archaeology, Washington, D.C.
- 2002 Committee on Curation Update: Implementing SAA Ethic #7, Records and Preservation. *SAA Archaeological Record* 2(3):6. Society for American Archaeology, Washington, D.C.

Childs, S. Terry (editor)

- 2004 *Our Collective Responsibility: The Ethics and Practice of Archaeological Collections Stewardship*. Society for American Archaeology, Washington, D.C.

Childs, S. Terry, and Karolyn Kinsey

- 2003 *Costs of Curating Archeological Collections: A Study of Repository Fees in 2002 and 1997/98*. Studies in Archeology and Ethnography No. 1. Archeology and Ethnography Program, National Center for Cultural Resources, National Park Service, Washington, D.C.

- Childs, S. Terry, and Lynne P. Sullivan  
2004 Archaeological Stewardship: It's About Both Collections and Sites. In *Our Collective Responsibility: The Ethics and Practice of Archaeological Collections Stewardship*, edited by S. Terry Childs, pp. 3-21. Society for American Archaeology, Washington, D.C.
- Christenson, Andrew L.  
1979 The Role of Museums in Cultural Resource Management. *American Antiquity* 44(1):161-163.
- Davis, Hester A.  
1972 The Crisis in American Archaeology. *Science* 175(4019):267-272.
- Farnsworth, Kenneth B., and Stuart Struever  
1977 Ideas on Archaeological Curation and its Role in Regional Centers. In *Regional Centers in Archaeology: Prospects and Problems*, edited by William H. Marquardt, pp. 13-15. Missouri Archaeological Society Research Series No. 14. Missouri Archaeological Society, Columbia.
- Fitzhugh, William W.  
1977 Regional Repositories: A View from the Smithsonian. In *Regional Centers in Archaeology: Prospects and Problems*, edited by William H. Marquardt, pp. 18-19. Missouri Archaeological Society Research Series No. 14. Missouri Archaeological Society, Columbia.
- Ford, Richard I.  
1977 *Systematic Research Collections in Anthropology: An Irreplaceable National Resource*. Peabody Museum, Harvard University, Cambridge.  
  
1984 Ethics and the Museum Archaeologist. In *Ethics and Values in Archaeology*, edited by Ernestine L. Green, pp. 133-142. The Free Press, New York.
- General Accounting Office  
1987 *Cultural Resources: Problems Protecting and Preserving Federal Archaeological Resources*. GAO/RCED-88-3. United States General Accounting Office, Washington, D.C.
- Karl, Ricky J.  
2006 Notice of Change to Arizona State Museum Record Search Fees. Email message sent to Arizona State Museum Archaeological Permit holders, 11 May 2006.
- Klein, Terry H., Lynn Sebastian, Samantha M. Ruscavage-Barz, Stephanie Ford, and Joe E. Watkins  
2005 *Managing Archaeological Investigations: A Synthesis of Highway Practice*. NCHRP Synthesis 347. National Cooperative Highway Research Program, Transportation Research Board, National Research Council, Washington, D.C.
- Lindsay, Alexander J., Jr., and Glenna Williams-Dean  
1980 Artifacts, Documents, and Data: A New Frontier for American Archaeology. *Curator* 23(1):19-29.

- Lindsay, Alexander J., Jr., Glenna Williams-Dean, and Jonathan Haas  
 1979 *The Curation and Management of Archeological Collections: A Pilot Study*. American Anthropological Association, Washington, D.C.
- 1980 *The Curation and Management of Archeological Collections: A Pilot Study*. Cultural Resource Management Series. U.S. Department of the Interior, Heritage Conservation and Recreation Service, Washington, D.C.
- Lipe, William D.  
 1974 A Conservation Model for American Archaeology. *The Kiva* 39(3-4):213-245.
- McGimsey, Charles R. III  
 1979 The Once and Future Data. *American Antiquity* 44(3):583-589.
- McGimsey, Charles R. III, and Hester A. Davis  
 1977 *The Management of Archeological Resources: The Airlie House Report*. Special Publication of the Society for American Archaeology. Society for American Archaeology, Washington, D.C.
- Marino, Eugene A.  
 2004 Back from the Brink – Renewing Research Potential. In *Our Collective Responsibility: The Ethics and Practice of Archaeological Collections Stewardship*, edited by S. Terry Childs, pp. 43-51. Society for American Archaeology, Washington, D.C.
- Marquardt, William H. (editor)  
 1977 *Regional Centers in Archaeology: Prospects and Problems*. Missouri Archaeological Society Research Series No. 14. Missouri Archaeological Society, Columbia.
- Marquardt, William H.  
 2004 Epilogue: A Personal Retrospective on Archaeological Curation in the USA. In *Our Collective Responsibility: The Ethics and Practice of Archaeological Collections Stewardship*, edited by S. Terry Childs, pp. 169-174. Society for American Archaeology, Washington, D.C.
- Marquardt, William H., Anta Monet-White, and Sandra C. Scholtz  
 1982 Resolving the Crisis in Archaeological Collections Curation. *American Antiquity* 47(2):409-418.
- Nelson, Margaret C., and Brenda Shears  
 1996 From the Field to the Files: Curation and the Future of Academic Archeology. *Common Ground* 1(2):34-37.
- Nepstad-Thornberry, Tina, Curtis Nepstad-Thornberry, Melissa Stoltz, Karyn de Dufour, and Richard Wilshusen  
 2002 Addressing the Curation Crisis in Colorado: An Assessment for the Executive Committee of the Colorado Council of Professional Archaeologists. Ms on file, University of Colorado Museum, Boulder.

Society for Historical Archaeology

- 1993 Standards and Guidelines for the Curation of Archaeological Collections. *Society for Historical Archaeology Newsletter* 26(4):3-5.

Sullivan, Lynne P.

- 1992 *Managing Archeological Resources from the Museum Perspective*. Technical Brief No. 13. Archeological Assistance Division, National Park Service, Washington, D.C.

Sullivan, Lynne P., and S. Terry Childs

- 2003 *Curating Archaeological Collections: From the Field to the Repository*. Archaeologist's Toolkit Volume 6. AltaMira Press, Walnut Creek, California.

Sullivan, Michael, and Carol Griffith

- 2005 *Down in the Dumps: Context Statement and Guidance on Historical-Period Waste Management and Refuse Deposits*. Edited by Teresita Majewski. Contributions from the State Historic Preservation Office Advisory Committee on Historical Archaeology. State Historic Preservation Office, Arizona State Parks, Phoenix.

Thompson, Raymond H.

- 2000 The Crisis in Archaeological Collection Management. *CRM* 23(5):4-6.

Trimble, Michael K., and Eugene A. Marino

- 2003 Archaeological Curation: An Ethical Imperative for the Twenty-First Century. In *Ethical Issues in Archaeology*, edited by Larry J. Zimmerman, Karen D. Vitelli, and Julie Hollowell-Zimmer, pp. 99-112. AltaMira Press, Walnut Creek, California.

## **APPENDICES**

- A. Letter from Mr. Arthur Vokes, Curator of Repository Collections, Arizona State Museum
- B. Register of Professional Archaeologists Code of Conduct and Standards of Research Performance
- C. Society for American Archaeology Principles of Archaeological Ethics and Guidelines for Implementation of Ethical Principle #7 (Records and Preservation)
- D. Society for Historical Archaeology Standards and Guidelines for the Curation of Archaeological Collections
- E. "Curation of Federally-Owned and Administered Archaeological Collections," (36 CFR 79)
- F. "Disposition of Collections and Records," (Arizona Board of Regents Policy Manual, Rule 8-204)
- G. Arizona State Museum non-collection survey policy (excerpt from Arizona State Museum Permit Manual)
- H. Nation Park Service study of curation fees (Childs and Kinsey 2003)
- I. Minutes of GAAC Curation Subcommittee Public Hearings
- J. Colorado Council of Professional Archaeologists Report (Nepstad-Thornberry et al. 2002)
- K. GAAC Curation Subcommittee Arizona Archaeological Repository Survey results (data provided by the Arizona State Museum, Arizona State University, the Museum of Northern Arizona, Pueblo Grande Museum, and Sharlot Hall Museum)
- L. Letter from Dr. Sander van der Leeuw, Director, School of Human Evolution and Social Change, Arizona State University
- M. Letter from the staff of Desert Archaeology, Inc.
- N. Arizona State Museum/Museum of Northern Arizona funding request to Congress
- O. Arizona State Museum culling policy (excerpt from Arizona State Museum Repository Manual)
- P. Pueblo Grande Museum culling policy (excerpt from PGM Repository Manual)
- Q. Excerpt from federal study of in-field analysis and culling policies among state departments of transportation (Klein et al. 2005).