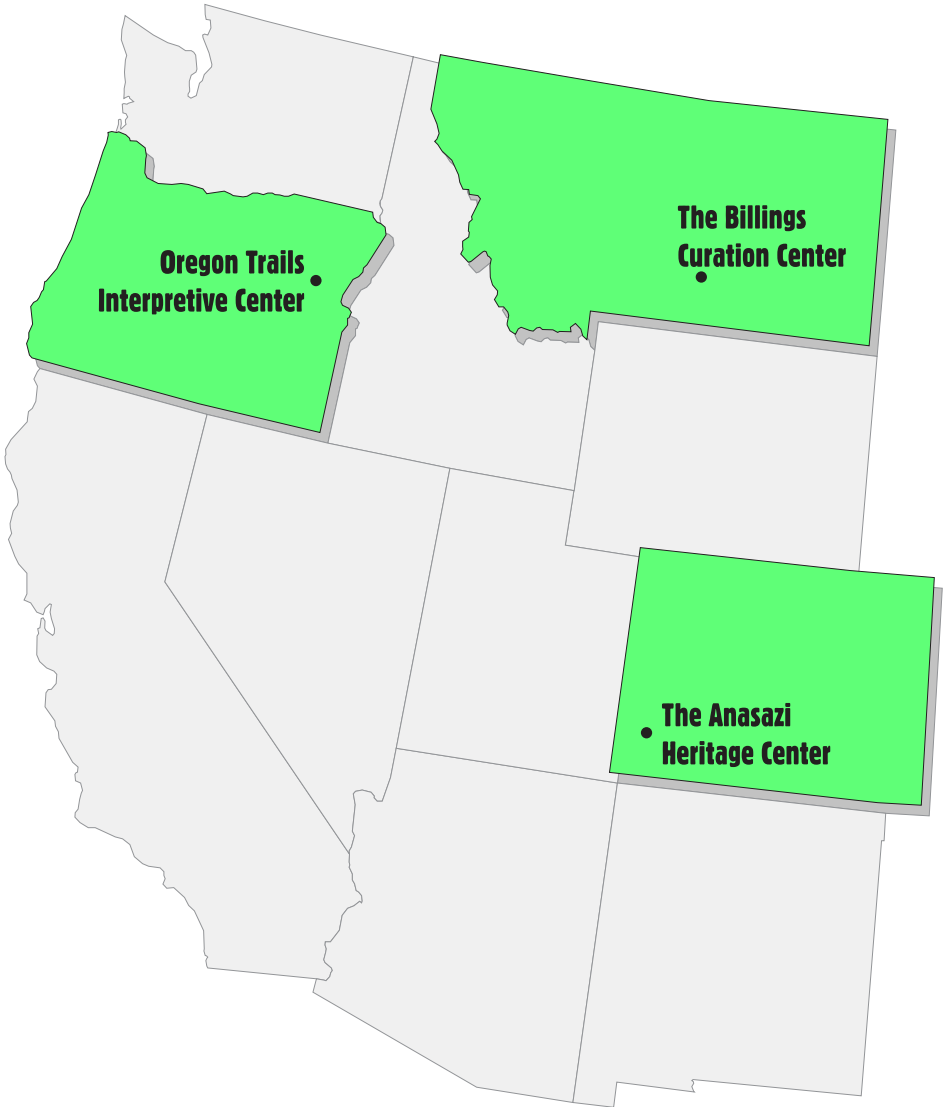
A Curation-Needs Assessment of Select Bureau of Land Management Archaeological Collections

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Archaeological Curation-Needs Assessments
Technical Report No. 25



US Army Corps of Engineers®
St. Louis District

Mandatory Center of Expertise for the Curation and Management of Archaeological Collections

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13. ABSTRACT *(Maximum 200 words)*

The Bureau of Land Management (BLM) is responsible for the management of archaeological and historical resources that are located on and recovered from BLM-owned or maintained lands. These responsibilities include the proper curation of recovered archaeological materials and associated documents. The U.S. Army Corps of Engineers, St. Louis (SLD), was asked to assist the BLM in evaluating the curation of BLM collections at three facilities: Billings Curation Center, Billings, Montana, the Anasazi Heritage Center, Delores, Colorado, and the Oregon Trails Interpretive Center, Baker City, Oregon. SLD found that only the Anasazi Heritage Center met current federal standards for curation and that, in many cases, collections require at least partial rehabilitation. In addition, staffing is not adequately funded and all facilities require additional personnel to comply with federal regulations.

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Executive Summary

Background

The Bureau of Land Management (BLM) is responsible for the management of archaeological and historical resources that are located on and recovered from BLM-owned or maintained lands. As mandated by federal law, BLM is required to ensure that archaeological materials and their associated records are properly curated in perpetuity. BLM collections are public property, the result of many years of archaeological research and the expenditure of millions of federal dollars.

A federally funded cultural resource management program provides for the recovery of materials from archaeological sites, the analysis of recovered items, the publication and circulation of a final report, and the placement of collections in storage facilities for preservation, display, or future study. In the past, however, the archaeological profession gave little attention to the maintenance of collections. Through the years, most collections have been stored free of charge by universities and museums. Inadequate funding and failing facilities now seriously hinder the ability of these institutions to adequately care for archaeological materials and associated records.

In order for BLM to address its curation concerns and to comply with legal requirements and a directive from the Department of the Interior to inventory archaeological collections housed in BLM managed facilities, a strategy was adopted by BLM to assess its archaeological collections. The strategy was incorporated in Interagency Agreement No. 1422P852-A4-0015 between BLM and the U.S. Army Corps of Engineers, St. Louis District. Previous work conducted under this agreement is described in the report entitled *Bureau of Land Management Museum Collections: Select Status Report* (Barnes 1998). Fieldwork for the present report was conducted during March and April of 1999.

The strategy consists of inspecting and evaluating three specific repositories found to hold BLM collections (Table 1), assessing BLM collections (Table 2) according to the requirements of 36 CFR Part 79 and the standards and protocols established by the St. Louis District, and preparing a report that details the condition of these BLM collections.

Table 1.
Locations of Bureau of Land Management Repositories

Repository	City	State
Billings Curation Center	Billings	Montana
Anasazi Heritage Center	Dolores	Colorado
Oregon Trails Interpretive Center	Baker City	Oregon

Table 2.
Summary of Select Repositories Curating Archaeological Collections and Associated Documentation for the Bureau of Land Management

Repository	Volume (ft^3)	Records (l.f.)
Anasazi Heritage Center	40.1	702.0
Billings Curation Center	58.3	28.2
Oregon Trails Interpretive Center	5.0	0.8
Total	103.4	731.0

Note: ft^3 refers to cubic footage of archaeological materials; l.f. refers to linear footage of associated records. Totals are based on the samples that St. Louis District personnel examined during fieldwork.

All inspections and evaluations conducted for this project included the following.

1. Physical inspection of all relevant archaeological materials and associated documentation.

2. Inspection and evaluation of relevant primary archaeological materials storage containers (e.g., boxes), including condition, method of securing, and labeling.

3. Inspection and evaluation of relevant secondary storage containers (e.g., paper, or plastic bags), including condition, method of securing, and labeling.

4. Inspection of all archaeological materials in order to determine material classes and whether the materials have been cleaned, labeled, and sorted.

5. Inspection and evaluation of the repositories included, but was not limited to, an assessment of structural adequacy, security, environmental controls, fire detection and suppression systems, and collections management infrastructures.

6. Recommendations for long-term curation needs for BLM collections.

Findings

Status of Facilities

1. *Repository Adequacy:* BLM collections are presently stored at three repositories in three states. All facilities are federally owned repositories.

2. *Repository Maintenance:* All three repositories are professionally serviced at least once a week. Collections storage areas at all three repositories are cleaned either by the curatorial staff or by supervised professionals on an as-needed basis. None of the repositories store extraneous items such as field equipment, hazardous chemicals, and personal items in collections storage areas—an unacceptable practice in professional collections repositories.

3. *Environmental Controls:* Environmental monitoring and adequate environmental control, which consists of stable temperature and humidity readings, are crucial for the long-term preservation of collections. All of the repositories inspected possess heat and central air in at least a portion of the repository. Only the Anasazi Heritage Center and the Oregon Trails Interpretive Center monitor and control humidity.

4. *Security:* Adequate security, consisting of intrusion detection and deterrent systems, is necessary for maintaining any collection. Only the Anasazi Heritage Center and the Oregon Trails Interpretive Center possess intrusion detection and deterrence systems. The Billings Curation Center is secured only through key locks on all doors and windows. All repositories possess lockable cabinets for special collections and controlled access.

5. *Fire Detection and Suppression:* Fire is a major hazard to any museum collection. All three repositories possess fire-detection and -suppression systems.

6. *Pest Management:* The Billings Curation Center and the Oregon Trails Interpretive Center have no integrated pest management programs in place other than monitoring by staff and treatment on an as-needed basis. The Anasazi Heritage Center does have a pest management program that includes monitoring and control.

Status of Artifacts

BLM collections (103.4 ft^3) at all three repositories have been adequately prepared for long-term curation. However, each repository should more actively maintain their collections by using better primary and secondary containers. For example, boxes with lids should replace all folded flap boxes that have suffered from repeated opening and closing.

Overall, primary containers are acidic cardboard boxes with folded flaps, each encompassing a variety of volumetric capacities. Many other

primary containers sampled are overpacked and coated with dust. All boxes include some type of label.

Ninety-eight percent of the collections are stored in plastic bags that are secured using twist ties or zip-locks. One percent of the collection is stored loose, without secondary containers, and another one percent is housed in paper bags. Most secondary containers are labeled; however, they are in need of replacement in order to safeguard the longevity of these collections (see Table 3).

Table 3.
Rehabilitation Required To Bring Bureau of Land Management Archaeological Collections Into Compliance With 36 CFR Part 79

	Artifacts		Records	
Repository	**Complete**	**Partial**	**Complete**	**Partial**
The Anasazi Heritage Center		X		X
The Billings Curation Center		X		X
The Oregon Trails Interpretive Center		X	X	

Note: Complete rehabilitation, as defined here, refers to the need to replace all primary and secondary containers and labels for all archaeological materials and records and the removal of all contaminants from records. Partial rehabilitation, as defined here, refers to the need to replace only primary or secondary containers, or labels, for all or part of the archaeological materials and records.

Major material classes (by volume) encountered include chipped and/or ground stone (44%), faunal remains (28%), prehistoric ceramics (13%), botanical samples (2%), glass (3%), historical-period metal (2%), flotation samples, (1%), soil samples (1%), ^{14}C samples (1%), worked bone (1%). A few miscellaneous classes were also noted (3%) and are defined in their respective chapters.

Status of Human Remains

Two of the three repositories assessed—the Billings Curation Center and the Anasazi Heritage Center—possess human skeletal remains recovered from BLM-owned or maintained land. These remains were noted in the course of the examination but were not included as part of the sample of collections assessed by the St. Louis District personnel. The remains were not assessed at the request of the curatorial staff at these repositories.

NAGPRA Compliance

NAGPRA materials are part of the collections of two of the three repositories examined. Both the Billings Curation Center and the Anasazi Heritage Center have inventoried and coalesced their NAGPRA collections.

Status of Documentation

Approximately, 731 linear feet of records associated with archaeological work conducted from BLM lands were assessed during the course of fieldwork for this report. Major classes of documentation include paper, photographs, maps, and draft reports. In many cases, paper records are not housed in acid-free folders, photographs are not isolated and stored in chemically inert sleeves, and large-scale maps are not stored flat in map drawers. Finding aids that accurately describe archival materials and invaluably increase access and retrieval to these materials are often absent. In most cases, documentation for the collections has either been misplaced over the years or simply was not curated with the archaeological materials after fieldwork was completed.

Status of Repository Collections Management Standards

All of the repositories examined keep accession records for the collections for which they are responsible. A written record of where collections are located within the repository is present at the Billings Curation Center and the Anasazi Heritage Center. All repositories are in the process of completing inventories of their collections. Detailed collections management standards, which include artifact curation, loans, minimum standards of acceptance, and records management, exist at all three repositories. The Billings Curation Center and the Anasazi Heritage Center also possess detailed field curation guidelines. None of the facilities possess a published guide to collections, but all employ some form of computer database to manage collections in their care.

Corrective Actions

A number of corrective actions are necessary to bring BLM collections and those facilities housing them into compliance with 36 CFR Part 79. General recommendations include the following.

1. Identify and systematically inventory all archaeological materials and associated documentation that have not already been completed by repository staff. An inventory backlog was present at the Billings Curation Center and the Anasazi Heritage Center. All personnel are aware of the backlog but have been unable to allocate or find additional support to abate the problem.

2. Rehabilitate and/or conserve archaeological materials, and archivally preserve documents and reports. Most of the collections examined are in adequate condition; however, partial adjustments are needed for all collections—especially in terms of primary and secondary containers and labels—to ensure their continued stability.

3. Develop and implement formal archives management programs.

4. Complete NAGPRA compliance tasks for those repositories with human skeletal remains.

Conclusions

Implementing each recommendation may not be immediately possible. However, given the fact that these collections have provided much scientific data and have helped form archaeological thought in the western United States, their continued stability is tantamount. As steward of these collections, the BLM should continue to make all necessary support available for their continued maintenance.

Recommendations

Based on the results of the curation needs assessments and the guidelines in 36 CFR Part 79, the St. Louis District recommends the following initial actions.

1. Assist the efforts of the curatorial staff at the Billings Curation Center and the Anasazi Heritage Center in identifying and coalescing BLM collections that are currently scattered throughout these geographic areas.

2. Provide funding to the Billings Curation Center and the Anasazi Heritage Center to assist in addressing the inventory backlogs that were noted during this assessment.

3. Provide support to the Oregon Trails Interpretive Center in reconfiguring their accession database.

4. Provide support for additional maintenance of collections at all repositories in order to address some of the concerns noted during the assessment, especially as they apply to the condition of primary and secondary containers.

5. Provide support and training for all curatorial personnel at all repositories, particularly in archival processes and records management practices.

6. Provide support to complete all current NAGPRA projects so that BLM repositories can be in complete compliance.

If implemented, these recommendations would bring BLM into compliance with the federal requirements for the long-term curation of archaeological materials and would assist in attaining compliance with NAGPRA. By implementing these recommendations, BLM has the opportunity to augment its current curation program so that its collections management concerns will be served well into the future.

Acknowledgments

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Billings Curation Center
Gary Smith and David Wade

Anasazi Heritage Center
LouAnn Jacobson and Susan Thomas

Oregon Trails Interpretive Center
Sarah LeCompte

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Barnes, James E.
1998 *Bureau of Land Management Museum Collections: Select Status Report.* Michael K. Trimble and Christopher B. Pulliam, series editors. U.S. Army Corps of Engineers, St. Louis District. Technical Report No. 12.

1
Introduction

The Bureau of Land Management (BLM) is responsible for archaeological materials and accompanying documentation (hereafter referred to as archaeological collections) recovered from BLM-owned or maintained land. This responsibility is mandated through numerous pieces of legislative, including the Antiquities Act (16 U.S.C 431-433), the Historic Sites Act of 1935 (16 U.S.C. 461-467), the Reservoir Salvage Act of 1960 (16 U.S.C. 469-469c), the National Historic Preservation Act of 1966 (16 U.S.C. 470-470x-6), and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-470mm). Executive Order 11593 (U.S. Code 1971) and amendments to the National Historic Preservation Act in 1980 provide additional protection for these resources. Preservation of archaeological collections is detailed in 36 CFR Part 79, Curation of Federally-Owned and Administered Archeological Collections. The Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 et seq. [NAGPRA]), which was passed into law in 1990, requires federal agencies to identify Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony in their holdings and to repatriate these remains and objects to Indian Tribes, Native Alaskans, or Native Hawaiian Organizations, when relevant. A summary of unassociated funerary objects, sacred objects, and objects of cultural patrimony was to be completed by November 16, 1993. An inventory of human remains and associated funerary objects was to be completed by November 15, 1995.

Methods

In 1999, BLM contacted the U.S. Army Corps of Engineers, St. Louis District, to discuss a means for addressing the requirements of 36 CFR Part 79 and NAGPRA. A plan was developed by BLM, after consultation with the St. Louis District, to survey its archaeological collections. The plan was incorporated into an interagency agreement that included the following: (1) an inspection and inventory of a random sample of archaeological collections in three repositories in the western United States—the Billings Curation Center, Billings, Montana; the Anasazi Heritage Center, Dolores, Colorado; and the Oregon Trails Interpretive Center, Baker City, Oregon—and (2) an evaluation of the repositories following guidelines in 36 CFR Part 79.

Field Inspection and Assessments of Repositories and Collections

Assessment of the archaeological collections and the repositories that house them involved the following tasks.

1. A survey questionnaire—requesting information on repositories, collections, and associated documentation—was completed for each repository curating archaeological collections for BLM.

2. A building evaluation form—evaluating structural adequacy, space use, environmental controls, security, fire detection and suppression, and pest

management—was completed for each repository curating archaeological collections for BLM. Data collected through discussion and observation enabled an assessment of the repositories in accordance with 36 CFR Part 79.

3. An inspection of all associated documentation was made to determine the total linear feet, the present physical condition of the documentation and their containers, and the nature of the curation environment. The types of associated documentation examined included project and site reports, administrative files, and field, analysis, curation, and photographic records. This inspection enabled a determination of each repository's compliance with the archives management requirements of 36 CFR Part 79.

4. A random sample of archaeological materials were examined and evaluated in terms of the condition of the primary and secondary containers, the degree of container labeling, the extent of laboratory processing, material classes present, and the presence/absence of NAGPRA-related items. Primary containers are the containers that enclose one or a group of archaeological materials (e.g., acidic and acid-free boxes). Secondary containers are in direct contact with archaeological materials (e.g., plastic and paper bags, cardboard boxes, aluminum foil, glass jars, film canisters, gel caps, and plastic vials).

NAGPRA-Compliance Assessment

NAGPRA-related remains and associated/unassociated objects discovered during reviews of site files and reports and inspections of collections and associated documentation are noted in this report. Recommendations for compliance with NAGPRA are included when appropriate.

Report Preparation

A detailed written report of the results of the curation-needs assessments is a requirement of the interagency agreement between the St. Louis District and BLM. This report includes estimates of the nature, size, and condition of each collection, in addition to repository descriptions and recommendations for the rehabilitation of the repositories and/or archaeological materials and associated documentation, according to standards outlined in of 36 CFR Part 79.

Chapter Synopsis

Chapters 2–4 describe the current condition of select BLM archaeological collections and the facilities curating these collections. Each chapter consists of a detailed evaluation of each repository and its collections and recommendations for the improvement of the collections and repository. Chapter 5 is a findings summary for BLM collections examined in this report.

Overall, only the Anasazi Heritage Center currently meets the minimum standards mandated by 36 CFR Part 79 for curating federal archaeological collections. However, each repository has certain deficiencies (see Chapters 2–4) that could be addressed to ensure the long-term care of BLM's archaeological collections. Additionally, many collections and groups of associated documentation require rehabilitation to meet federal standards. All facilities employ full-time curators/collections managers for archaeological collections, but each lacks adequate funding and personnel to rehabilitate archaeological materials and documentation currently in their care.

Federal agencies and repositories throughout the United States are experiencing similar problems. A national policy is needed that addresses funding, personnel, and management programs. Without such a policy the archaeological materials and documentation will continue to deteriorate until their research and educational potential are gone. BLM has taken an important first step in stabilizing these irreplaceable resources.

2

The Anasazi Heritage Center

Dolores, Colorado

Repository Summary

Volume of Artifact Collections: 40.1 ft^3

Compliance Status: Artifacts require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Linear Feet of Records: 702 linear feet

Compliance Status: Documentation require partial rehabilitation to comply with existing archival guidelines and standards.

Human Skeletal Remains: Skeletal material is present at the Anasazi Heritage Center but was not examined during this assessment.

Status of Curation Funding: Funding for curation comes from BLM funds and grants that are written by Anasazi Heritage Center personnel.

Date of Visit: April 1, 1999

Points of Contact: LouAnn Jacobson, director, and Susan Thomas, curator

Assessment

The Anasazi Heritage Center (AHC) is located in Dolores, Colorado, in a 37,000-ft^2, 13-year-old building (Figure 1). AHC was created using Bureau of Reclamation (BOR) funds that were made available during the Dolores Archaeological Project (DAP) of the 1970s. BOR secured a one-time appropriation from Congress to design and build a collections repository for all archaeological materials generated during DAP. Once constructed and the collections in place, administrative control was passed to BLM, who continues to manage all materials as well as the day-to-day operation of the facility. The primary mission of AHC is to curate the materials currently in their charge, to provide access to researchers interested in the kinds of materials they possess, and to work with BLM throughout Colorado to ensure that archaeological collections are properly curated. AHC is a multipurpose facility with a conservation laboratory, library, offices,

Figure 1. Exterior view of the Anasazi Heritage Center.

exhibit areas, theatre, special collections storage, archives, and collection storage areas. The main collections storage areas for archaeological collections, of which there are four—rooms B02 (associated documentation), B07, B08, and B09—are located in the basement of the repository; all other facilities are located on the first floor.

Structural Adequacy

The repository has a concrete foundation with concrete veneer exterior walls. The roof, which is original to the building, consists of a composite membrane covering. Some past episodes of leaking from the roof have been noted, but currently no problems exist. All utility systems are original and have undergone no major episodes of repair or upgrade. Windows are located throughout the first floor of the building but not in any of the collections areas. All windows have aluminum frames and shades. BLM personnel indicate that the wondows are airtight. St. Louis District personnel noted four entrances to the building, but only one that leads to the curation personnel area.

The four collections areas have concrete floors, interior walls, and ceilings. The collections areas are accessed from the first floor through a stairwell that leads to the basement. There are no windows in the 15,432 ft^2 collections areas (all rooms combined), which have stored materials in the following percentage of the room—B02, 30–40%; B07, 40%; B08, 70%; B09, 80%. All the collections in rooms B07–B09 are archaeological in nature.

Environment

The repository has hot water heat and central air conditioning equipped with dust filters. Temperature and humidity are monitored. A humidity control system is in place at AHC but has been malfunctioning to the point that staff have suspended its use. The building is professionally cleaned on a regular basis. All lighting is nonfiltered fluorescent.

Rooms B02, B07, B08, and B09 are serviced by the same heat and air systems in use throughout AHC. The same temperature and humidity conditions mentioned for the repository apply to collections areas. Additionally, the rooms are equipped with portable hygrothermagraphs. There are no windows in any of the collections storage areas, and all lighting is nonfiltered fluorescent. The main collections areas are cleaned biannually by professionals under the supervision of the curator. Certain chemicals are used in the conservation laboratories; fumes from these chemicals are vented outside the building through a fume hood.

Pest Management

AHC has an integrated pest management program that includes scheduled monitoring and control for pests. St. Louis District personnel did not observe any evidence of infestation during the assessment.

Security

Security measures for the repository consist of sealed windows that are wired to the security alarm, key locks, dead-bolt locks, key pads on exterior doors, key locks on interior doors, lockable storage cabinets for special collections and records, an intrusion alarm that is wired to a central monitoring office, television monitors located throughout the building, and controlled access by staff. Rooms B02, B07, B08, and B09 are accessible to researchers only through permission of the curator. The connecting doors in the stairwell leading from the first floor are locked so that one can exit from the basement to the first floor, but they cannot reenter the stairwell from the first floor without a key. This stairwell emerges into a open area that leads to the specific collections rooms. These main access doors are locked and can only be entered with a key; however, for rooms B07–B09 interior connecting doors remain unlocked.

Fire Detection and Suppression

Fire safety in the repository consists of an automatic and manual fire alarm system that is wired to the fire department. Smoke detectors and heat sensors are present throughout the building, as is a sprinkler/suppression system. Rooms B02, B07, B08, and B09 are serviced by the same fire safety systems as the rest of the repository. Additionally, fire extinguishers were noted in each room. They were located near the doors and had last been inspected in 1997.

Artifact Storage

Storage Units

Artifact collections in rooms B07 and B08 are stored on multiple sets of adjoining, immovable, enameled metal shelving units (Figure 2) that measure 36 x 24 x 86.5 inches (l x w x h). A total of 10.1 ft^3 of artifacts were examined during the course of this assessment. In addition to the shelved materials, B08 also holds special collections that are stored in lockable, metal cabinets that measure 57 x 38.5 x 38.5 inches (l x w x h) (Figure 3). Artifacts in room B09 are stored on compact shelving units that measure 217 x 24.5 x 92 inches (l x w x h) (Figure 4). Thirty cubic feet were examined from this room (Table 4).

Figure 2. Storage units at the Anasazi Heritage Center.

Figure 3. Storage units for special collections at the Anasazi Heritage Center.

Figure 4. Movable storage units used at the Anasazi Heritage Center.

Table 4.
Summary of Material Classes Present in the Sampled BLM Collections at the Anasazi Heritage Center

Material Class	%
Stone	38
Prehistoric Ceramics	33
Fauna	11
Shell (unmodified)	—
Botanical	5
Flotation	3
Soil	<0.1
^{14}C	1
Human Skeletal Remains	—
Worked Shell	—
Worked Bone	3
Brick/Masonry	—
Historic Ceramics	—
Metal	<0.1
Glass	—
Textiles	—
Other	6

Note: Other includes mineral samples, unfired clay, and nonorganic materials.

Primary Containers

Most artifact collections housed in rooms B07, B08, and B09 are stored in acidic cardboard boxes measuring 10 x 12 x 8 inches (l x w x h) (Figure 5); however, some collections (e.g., metates and whole pots) are stored directly on the shelf (Figures 6 and 7). Box flaps are secured by folding the flaps of the box. Most of the boxes have mylar sleeves, which contain the box label, attached to the front of the box. Labels

Figure 5. Primary containers used at the Anasazi Heritage Center.

Figure 6. Storage for metates at the Anasazi Heritage Center.

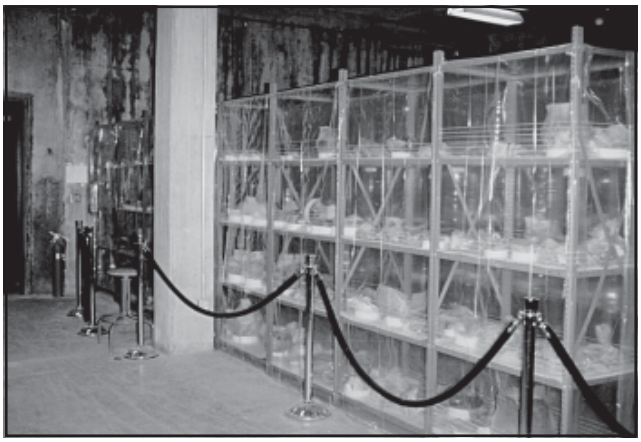

Figure 7. Storage for whole pots at the Anasazi Heritage Center.

are typed and include the project, date, site name, owner, and site and accession numbers. A portion of the collections have labels that are taped directly to the front of the box. In most cases these labels have the same or similar information as those inserted into the mylar sleeves.

Materials housed in the cabinets are stored in metal drawers that measure 55 x 36 x 3.5 inches (l x w x h). Drawers are labeled with paper insert labels that have the drawer number typed on them. In most cases, items in the cabinets are stored in small archival boxes that have preprinted adhesive labels with site, catalog, box number, provenience, site name, and project typed on them. Some of the items, however, are stored loose in the padded drawers or inside plastic bags that are placed in the drawers.

Secondary Containers

Secondary containers for the artifact collections in rooms B07, B08, and B09 consist mainly of plastic, zip-lock bags. Labels are either directly applied to secondary containers in marker or typewritten paper inserts are placed in the containers. Information variably includes data such as project names, site numbers, material classes, artifact provenience, owner, collector/investigator name(s), and date. Secondary container types are similar for those items in the cabinets; those materials that are stored loose on the shelves are likewise labeled with accession information. Whole pots have labels with pertinent site information (including the Smithsonian trinomial site number) typed on them, that are situated in front of the vessel.

Laboratory Processing and Labeling

All of the collections sampled are sorted by accession number and material class. Some of the individual items have been directly labeled in ink.

Human Skeletal Remains

Human skeletal remains are part of the AHC inventory and are located in Room B07. None of the skeletal remains were included as part of this sample; however, St. Louis District personnel did note that the boxes holding remains were covered with plastic and were being stored under water pipes (Figure 8). The curator did mention that this was a temporary condition that would be addressed in the near future.

Figure 8. Storage conditions for human skeletal remains at the Anasazi Heritage Center.

Records Storage

Storage Units

The associated documentation is, with rare exception, housed in room B02, which is adjacent to the artifact storage rooms. The back wall is occupied by a large compact-shelving system, and this location is where the paper and photographic documentation is housed. Locking, enameled steel cabinets are placed on the compact-shelving units. Two rows of six cabinets, situated back-to-back, are on each compact-shelving unit. There are seven units plus two end units (one-half unit), for a total of 96 cabinets. Each cabinet has a capacity of 16 linear feet. Therefore, this compact system alone could house 1,536 linear feet of material. At the time of the evaluation, approximately 30% of the total capacity of this system was in use.

Along the opposite wall is a series of 14 shelving units measuring 12 x 36 x 87 inches (l x w x h), arranged back-to-back in rows of seven. Each unit contains five shelves, for a total potential capacity of 15 linear feet per unit. These shelving units are currently being used for report storage, encompassing approximately 190 linear feet. Because the reports are arranged in an internal numbering system, the evaluation team did not include these materials in the assessment.

The other two walls are interspersed with eight locking, standard five-drawer, legal-sized file cabinets; a series of 14 map cylinder storage units for rolled oversized materials; and 14 stacked five-drawer, flat file cabinets used for storage of oversized materials. File cabinets are not currently used for storage of associated documentation. In fact, most of these cabinets are empty. The map cylinder storage units do contain some rolled materials (many of which had been sleeved in polyester film), but the assessment team was informed this was only a temporary measure.

Primary Containers

In the case of rolled and flattened map and oversized storage, the units described above serve as primary containers. Accessioned letter- and legal-size paper documentation, photographic materials, electronic media, audiovisual materials, and microformat materials, however, are stored in acid-free boxes that are housed in the locking cabinets located on the compact-shelving shelving system. Although all primary containers are constructed of acid-free materials, many of those in use are not appropriate for the storage of associated documentation collections.

Most boxes represented in the collection are commonly known as clamshell boxes, and the continued use of these boxes will only further damage the materials they house through warping. Immediate attention should be given to this issue before the warping of materials increases to the point that significant conservation must be performed on these materials just to stabilize them. Some unaccessioned materials have been placed in acid-free boxes, but much of this material remains in the boxes in which they arrived. Accessioned materials, those processed and those unprocessed, have the

Table 5.
Summary in Linear Feet of Associated Documentation at the Anasazi Heritage Center

Category	Paper	Photographic	Microformat	Electronic	AV	Maps and Oversized	Total
DAP	415.3	110.0	0.50	1.1	0.7	10.9	538.4
All others	128.9	14.6	0.01	0.1	1.2	5.2	150.0
Unaccess.	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	13.6
Format Total	544.2	124.6	0.50	1.2	1.9	16.1	702.0

accession number noted in pencil on the exterior of the boxes. DAP materials have either been labeled directly in pencil or on typewritten adhesive labels stating the accession number and the coded catalog numbers unique to the DAP records.

Secondary Containers

For collections of associated documentation, the term secondary container generally refers to file folders, individual envelopes and sleeves (both archivally stable and those that are not stable), and smaller boxes that serve to preserve the housed material (e.g., videotape boxes, microfilm reel boxes). Approximately forty percent of the accessioned associated documentation have been packaged in archival secondary containers. The remaining sixty percent of the accessioned documentation and all of the unaccessioned materials require repackaging. Processed materials have been labeled directly in pencil with at least the accession number. Additional label information varies widely between individual accessions.

Excluding the report library mentioned above, the AHC currently houses a total of 702 linear feet of associated documentation from BLM collections. For purposes of this discussion, the associated documentation housed at the AHC, regardless of record format, is presented in one of three categories—the Dolores Archaeology Project (accession #78.1), all other accessioned collections, and unaccessioned collections (Table 5). Approximately forty-five percent, or 67.5 linear feet, of the accessioned material (excluding DAP) requires archival processing.

Paper Records

Paper materials are stored in archival boxes, primarily those known as clamshell boxes. Additionally, some paper records have been placed in acid-free folders, hole-punched, and bound with sliding aluminum binding mechanisms. These "books" have then been placed in acid-free magazine boxes. Both of these storage methods are inappropriate for paper records. Many of these materials, it was noted by the assessment team, have begun to warp because of this situation. These materials should be repackaged immediately to prevent a costly conservation effort to reverse this damage. Approximately forty-to-forty-five percent of the paper materials have been repackaged in archival file folders. Labeling is consistent on the repackaged materials, although the information provided is minimal. Contaminants such as paper clips, staples, adhesives, tape, and rubber bands were noted in the paper documentation as well. In a few cases, safety copies of collections have been created, but they are stored beside the originals, thus defeating the purpose of a copy to ensure against loss of the collection. Finally, those unaccessioned and unprocessed materials are still primarily in the unstable packaging in which they arrived at the repository.

A finding aid through the Center's ARGUS database is available for the accessioned materials. Fields are present in this database to accommodate basic information regarding associated documentation, but as an archival finding aid it may only be judged adequate. Unaccessioned materials have no finding aid to assist retrieval of information. Finally, the DAP accession is accompanied by its own unique cataloging system. Although no electronic version of this finding aid is available, the paper-based copy enables retrieval of information. The DAP catalog is extremely complex, a bit cumbersome, and has limited access points, but it serves as an above-average finding aid.

Photographic Records

The condition of the photographic materials currently curated by AHC ranges from poor to

excellent. The best storage of photographic materials is found in the DAP accession. There is some variance between print, slide, and negative storage, but these can be corrected relatively easily. Materials in other accessions and in the unaccessioned collections fare worse. Collections that have been processed obviously have received the best care, and these materials are within compliance. Those unprocessed and unaccessioned materials, however, are often in the worst condition simply because they have not yet received any attention from curation staff. These materials require complete repackaging, labeling, numbering, and narrative descriptions to be created.

Photographic materials from the DAP accession have been, with a few exceptions, properly packaged and appropriately labeled. A safety copy also has been created. The exception is the materials currently housed in vinyl, three-ring binders. These materials should be repackaged into archival photograph albums or acid-free folders and boxes. Photograph logs contained in these notebooks should be copied onto acid-free paper, and the originals replaced. The original logs should be retained with other paper documentation from this accession.

Storage of 35-mm negatives and color slides is excellent. These materials are stored in archival materials, and each individual image is assigned a unique number. Storage of prints and 4-x-5-inch negatives is slightly less than perfect, only because not all envelopes used to house these materials are constructed of archivally sound materials. Again, individual numbers are assigned to images. In one case, however, 4-x-5-inch negatives had been damaged because they had been stored in a box too small for them. Oversized photographic materials, both those used in displays and those that have not, are in flat file storage. Again, these materials have been labeled, and many have been sleeved in archival-quality polyester L-velopes® as an additional protective measure.

One final note on photographic materials housed at AHC. Approximately twenty percent of their entire holdings are photographic materials, and the fact that the bulk of these materials have been duplicated is of special note. Photographic collections are often in the poorest shape simply because the packaging, cataloging, and duplication costs associated with photographic materials is often prohibitive for many institutions. With this firmly in mind, the cost of bringing the associated documentation at AHC up to compliance with the directives of 36 CFR Part 79 has been significantly decreased and, therefore, a much more achievable goal.

Microformat Documents

Two types of microformat records were noted by the assessment team during the evaluation. The first was a series of aperture cards for oversized documentation that were found in the DAP accession. These materials are housed in an acid-free box that has been labeled as described above. The only action required for these materials is the placement of a spacer constructed of archival materials in the box to keep these cards on a single plane to prevent warping. The second type encountered was six Recordak® microfilm cartridges. Because a reader for these cartridges might prove difficult to find, these materials should duplicated onto 16-mm archival microfilm.

Electronic Records

Electronic records were noted primarily in the DAP accession. These materials consisted of six back-up cartridges (1.2 linear feet). Each cartridge is labeled consistently and accompanied with a printout listing pertinent metadata information. It is unknown whether these cartridges are still accessible; either software or hardware may not exist to access the information. As a result, this data should be migrated to another electronic media, or preferably printed on paper copies, before it becomes irretrievably lost. In fact, several data printout paper copies were noted during the assessment, but it is unknown if these are from the electronic cartridges in question. The printouts are classified as paper documentation. In another accessions, one floppy disk (0.01 linear feet) was found. No metadata information accompanied this, so nothing is known about the information recorded on the disk.

Audiovisual Records

Several types of audiovisual (AV) materials were noted during the assessment in the DAP accession, including 10 audiocassettes, three VHS videotapes, and three 35-mm motion picture film reels. In other accessions, the assessment team noted an additional four VHS videotapes, six additional audiocassettes (five of which were accompanied by transcriptions),

and seven ¾-inch library videocassettes. Labels on all of these materials varied both in content and in recording medium.

Maps/Oversized Documents

Oversized materials and cartographic records (e.g., maps and drawings) comprise approximately 16.1 linear feet of the total associated records curated at AHC. Of that amount, approximately sixty-eight percent of these materials are from the DAP accession. An overwhelming majority (nearly one hundred percent) of the oversized materials assessed was housed in flat, baked-enamel storage cabinets. Only in one case did the assessment team note that maps had not been removed for special storage in a processed or accessioned collection. A few oversized materials were found in the map cylinder cases described above, but curation staff assured the assessment team that this situation would soon be rectified and had only been done while the materials were moved to Room B02.

Approximately seventy-seven percent of the oversized materials have been sleeved or encapsulated in polyester film. This practice provides extra support while protecting from dirt, dust, and surface tears and scratches. The thickness of the polyester film ranges from one-to-three millimeter, with the preponderance being three millimeter. All materials were clearly labeled with the appropriate accession number and directly recorded in pencil. Multiple accessions were often housed in a single drawer of the cabinet. These materials were delineated with oversized map folders constructed of acid-free stock; again the accession number was recorded on the folder directly in pencil.

None of the oversized materials has been duplicated, but overall these materials are in superior, if not excellent, shape. The only primary failing for the oversized materials is the limitations of data retrieval offered by the ARGUS database employed as a finding aid.

Collections Management Standards

Registration Procedures

Accession Files

All archaeological materials are accessioned into the main collection upon receipt.

Location Identification

The location of artifacts within the repository is not identified in any type of document or database.

Cross-Indexed Files

Files are cross indexed by accession number in the computer database.

Published Guide to Collections

There is no published guide to collections.

Site-Record Administration

AHC does curate site file records that are tracked using the Smithsonian Institution trinomial site-numbering system.

Computerized Database Management

An ARGUS database is set up for computerized records management. Backups of the database are created on a daily basis, at AHC's request, by the software vendor on tape format.

Written Policies And Procedures

Minimum Standards for Acceptance

Written standards for submitting collections have been implemented that address packaging, processing, and labeling practices.

Curation Policy

AHC has written guidelines and procedures for curation that include labeling, cataloging, and packaging of collections.

Records-Management Policy

There is a written policy addressing the guidelines and standards for the curation of documentation.

Field-Curation Guidelines

Field curation guidelines are contained within the AHC curation plan.

Loan Procedures

There are written loan procedures and standard loan forms.

Deaccessioning Policy

AHC does not have a deaccessioning policy. Currently, there is no federal policy in place that specifically addresses deaccessioning of federally owned archaeological collections. Federally owned archaeological collections remain the property of the United States.

Inventory Policy

There is a written inventory policy at AHC.

Curation Financing

Funding for curation comes from BLM funds and from grants that are written by AHC personnel.

Curation Personnel

AHC currently has only two full-time collections management positions, a curator, and a museum specialist. The director and the curator equally divide management responsibilities for the three million artifacts currently housed at AHC. In addition to these positions, AHC also uses contractors and interns to augment their curation staff. AHC would probably benefit from the addition of a full-time professional archivist, if only for as long as it takes to upgrade the associated records to full compliance.

Access to Collections

Access to the collections is limited to AHC cultural resource staff and researchers by permission. A letter of intent is necessary, and access to the collections is supervised in a room that is specifically maintained for use by visiting scholars.

Future Plans

Currently, AHC is trying to lend their expertise and work with the BLM to ensure that collections all meet proper standards. This is seen as one of their primary functions. In addition, they are attempting to complete their NAGPRA requirements as soon as funding for consultation can be obtained.

Comments

1. The current repository is well maintained, and the collections are, for the most part, in good condition.

2. Collections are currently stored in acidic cardboard boxes, some of which require replacement.

3. Some of the secondary containers sampled require replacing to insure the stability of the materials.

4. A humidity control system is in place but is currently not functioning.

Recommendations

1. Immediate attention should be given to completing the NAGPRA process so that the final disposition of the human remains can be determined. In the interim, it is recommended that AHC staff move the collections so that they are not directly under water pipes.

2. Though adequate for the types of material classes in the collections, consideration should be given to placing all collections in boxes that have a removable lid instead of folding flaps. Folding and unfolding the flaps damages the box. Lids would reduce damage to the box considerably and provide for easier access to the materials.

3. Consideration should be given to replacing the inert plastic sleeves, which are attached to the front of the box for the label, with a zip-lock sleeve constructed of inert plastic. Though infinitely better than writing directly on the box, the current system can be cumbersome, especially when refolding or retaping the flaps on the box.

4. Secondary containers should be inspected and replaced in those instances where their current state may be deleterious to the collections.

5. Associated documentation should be removed from clamshell and magazine boxes as soon as possible to prevent further damage to the collection.

6. Concerted efforts should be made to address the unprocessed and unaccessioned associated documentation as soon as possible. Further efforts should be made addressing the minor inconsistencies in packaging and labeling noted in the associated documentation.

7. Materials on unstable or outdated media (i.e., electronic and audiovisual records) should be migrated to more stable media before the information is irretrievably lost.

8. A safety copy of all associated documentation should be made as soon as possible. For those accessions where this task has already been completed, the duplicate copy should be moved to a separate, secure, fire-safe location. If this is not readily achieved, then separate the originals from the copies, placing them on opposite sides of the compact-storage system. This action will at least improve the chances of survival in case of a catastrophe.

3

The Billings Curation Center

Billings, Montana

Repository Summary

Volume of Artifact Collections: 58.3 ft^3

Compliance Status: Artifacts require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Linear Feet of Records: 28.2 linear feet

Compliance Status: Documentation require partial rehabilitation to comply with existing archival guidelines and standards.

Human Skeletal Remains: Skeletal material is present at the Center but was not examined during this assessment.

Status of Curation Funding: BLM funds are used for the curator's position. Funding for collections management is also obtained from the Bureaus of Indian Affairs and Reclamation.

Date of Visit: March 30, 1999

Points of Contact: Gary Smith, archaeologist, and David Wade, curator

Assessment

The Billings Curation Center (Figure 9) is located in Billings, Montana, in a 1,517-ft^2, 25-year-old building. It is part of the BLM's Billings office. The Center's primary mission is to curate materials that have been excavated from BLM lands and to provide access to researchers. The Center's offices, library, and special collections storage and records areas are all located in the rear portion of the Billings BLM office (hereafter, the repository). The main collections storage area is located behind the repository in a garage for large-sized equipment. Several temporary walls have been erected to delineate the collections area from the rest of the garage. The two areas, the garage and the collections area, are accessible through a gate located at one end of the room.

Figure 9. Exterior view of the Billings Curation Center.

Structural Adequacy

The repository has a concrete foundation with metal exterior walls. The roof, which is original to the building, is also metal. Interior walls are plasterboard, and the ceiling is composed of suspended acoustical tile. The building is solid, with no cracks or leaks noted by BLM staff or by

St. Louis District personnel. All utility systems are original and have undergone no major episodes of repair or upgrade. Windows are located throughout the building, except in the special collections and records areas, where the single window is covered with plywood. All windows have aluminum frames and shades. BLM personnel indicate the windows are airtight. St. Louis District personnel noted one main entrance/exit door at the front of the building.

The main collections storage area floors are concrete. Interior walls are metal and plasterboard and have been erected in order to separate the collections area from the rest of the garage. The underside of the metal ceiling is exposed and has packed insulation that is connected to metal beams. There are no windows in the 864-ft^2 collections area, which is currently filled to approximately eighty percent capacity. All the collections in this area are archaeological in nature.

Environment

The repository has baseboard heat and central air conditioning, but these systems are not equipped with dust filters. Temperature is kept at staff preference, and humidity is not monitored. The building is professionally cleaned on a daily basis, except for the special collections and records areas, which are cleaned on an as-needed basis by the curator. All lighting is nonfiltered fluorescent.

The main collections storage area has no central air conditioning and minimal heat, which is generated from a large swamp heater. There is no dust control in the area, and temperature and humidity are not monitored or controlled. There are no windows in the collections storage, and all lighting is nonfiltered fluorescent. The main collections area is cleaned by the curator on an as-needed basis.

Pest Management

No integrated pest management program has been implemented for the Center. Staff monitor the repository and the main collections area at varying intervals. Any episodes of infestation are treated on an as-needed basis. St. Louis District personnel did not notice any evidence of infestation during the assessment.

Security

Security measures for the repository consist of key locks on exterior and interior doors, lockable storage cabinets for special collections and records, and controlled access by staff. Windows are located throughout the repository but are locked at all times. The main collections area is secured by a key lock on the connecting door to the repository, a key lock on the garage door, and a pad lock on the gate that separates the collections area from the rest of the garage. There are no windows in the collections area. Access to this area is also controlled by the curator.

Fire Detection and Suppression

Fire safety in the repository consists of an automatic and manual fire alarm system that is wired to the fire department. Smoke detectors are present in the special collections and records areas. The main collections storage area is serviced by the same alarm system as the rest of the repository. Additionally, the collections area has a sprinkler system in place as well as a smoke detector. Collections are not stored directly under these pipes but are located between the pipes.

Artifact Storage

Storage Units

Artifact collections in the main collections area are stored on multiple sets of adjoining, immovable, enameled-metal shelving units (Figure 10). Units measure 36 x 24 x 81 inches (l x w x h). A total of 58.3 ft^3 were examined during this assessment (Table 6). Artifacts stored in the special collections area are stored in lockable, metal cabinets that measure 73.5 x 28.5 x 47.5 inches (l x w x h) (Figure 11).

Primary Containers

Artifact collections that are housed in the main collections area are stored in acidic cardboard boxes measuring 6.5 x 11.25 x 23 inches (l x w x h) (Figure 12). Box flaps are secured with tape. Collections consist of processed and unprocessed boxes. Processed materials account for approximately forty-six percent of the total amount of collections. Boxes from both processed and unprocessed collections have inert plastic sleeves,

Figure 10. Storage units used at the Billings Curation Center.

Table 6.
Summary of Material Classes Present in the Sampled BLM Collections at the Billings Curation Center

Material Class	%
Stone	50
Prehistoric Ceramics	0.3
Fauna	42
Shell (unmodified)	—
Botanical	—
Flotation	—
Soil	5
^{14}C	1
Human Skeletal Remains	—
Worked Shell	—
Worked Bone	—
Brick/Masonry	—
Historic Ceramics	—
Metal	0.7
Glass	—
Textiles	—
Other	—

which contain the box label, attached to the front of the box. Labels are typed and include the project,

Figure 11. Storage units for special collections housed at Billings Curation Center.

date, site name, owner, and site and accession numbers. Unprocessed collections are labeled with adhesive note tags that are labeled with site number and name, and owner.

Materials housed in the special collections cabinets are stored in metal drawers that measure 20 x 26 x 1.75 inches (l x w x h). Drawers are labeled with paper insert labels that have the drawer number typed on them.

Figure 12. Type of primary container used to hold collections at the Billings Curation Center.

Secondary Containers

Secondary containers for the artifact collections (both processed and unprocessed) in the main collections area consist mainly of plastic, zip-lock bags. Labels are either directly applied to secondary containers in marker, or typewritten paper inserts are placed in the containers. Information variably includes data such as project names, site numbers, material classes, artifact provenience, owner, collector/investigator name, and date.

Laboratory Processing and Labeling

All of the processed collections sampled had direct labels in ink and are sorted by accession number. Sampled unprocessed collections had not yet been labeled but were sorted by site name and/or site number.

Human Skeletal Remains

Human skeletal remains are part of the Center's inventory and are located in the special collections area. At the request of the curator, none of the skeletal remains were included as part of this sample.

Records Storage

All associated documentation curated at the Billings Curation Center is stored in a single small room adjacent to the collections storage area and the processing area. The small space is crowded but well utilized, and it is not significantly cluttered. Paper documentation is stored on a series of seven, enameled-steel, open shelving units, measuring 32 x 14 x 77 inches (l x w x h). Each unit has six shelves; therefore, total capacity of the units is 112 linear feet. The shelves were overflowing at the time of the assessment. Next to the shelving units was a small wire cart designed to store and transport rolled oversize materials. Along the wall opposite the shelving unit is a series of enameled-steel cabinets for varying uses—two five-drawer, letter-sized file cabinets; two four-drawer, legal-sized file cabinets; a four-drawer, legal-sized, Fireking® file cabinet; and a card catalog cabinet. Against the far wall is a slide cabinet designed for both storage and viewing of photographic slides. Unaccessioned collections in acid-free document boxes are stacked upon this cabinet. Finally, the wall closest to the entrance is lined with locking museum cabinets used for special (i.e., object) collection storage.

Primary Containers

Paper documentation is housed in acid-free document boxes of two standard widths, 2.5 and 5 linear inches. These materials are located primarily on the open shelving units, but a few of these boxes have been stacked on the slide cabinet due to lack of space on the shelves. Additional paper documentation in the form of 4-x-6-inch paper catalog cards are housed in a steel cabinet designed for this use. Photographic materials are housed in one of the five-drawer, letter-sized file cabinets. The accession files are housed in the Fireking® file cabinet located just inside the door. Oversized materials were noted in the wire cart designed for this type of storage. Unaccessioned materials remain in the condition in which they were received.

Secondary Containers

Paper documentation found in accessioned collections is housed in acid-free file folders. Unaccessioned materials remain in the condition in which they were received. All accessioned photographic materials (including prints, negatives, and slides) have been placed in polyethylene sleeves designed to operate with hanging file bars so that they may be stored in file cabinets. Unaccessioned photographic material is stored in the slide cabinet until the materials can be processed and integrated into the existing system.

Paper Records

Accessioned paper documentation (Table 7) had been placed in acid-free file folders, which are directly labeled in pen in a consistent manner. Label information, however, was minimal—the accession number. Contaminants such as staples and paper clips have been removed. File folders were then placed in acid-free document boxes, which are directly labeled in pen. Again label information consisted of the accession number. Multiple accessions are stored in a single box in attempts to use space efficiently. Catalog cards describing the archaeological objects recovered during investigations are stored in a enameled-steel cabinet designed for storage of these cards. These materials

Table 7.
Summary in Linear Feet of Sampled Associated Documentationnat the Billings Curation Center

Category	Paper	Photographic	Microformat	Electronic	AV	Maps and Oversized	Total
Accessioned	12.8	1.6	None	None	None	None[a]	14.4
Unaccessioned	Und.	Und.	Und.	Und.	Und.	Und.	13.8
Format Total	12.8	1.6	Und.	Und.	Und.	Und.	28.2

Note: Und. is an abbreviation for undetermined. The assessment team recorded only the total extent for these materials. [a]Oversized materials were unaccessioned at the time of the assessment, so accession numbers could not be matched and the materials measured. Because a majority of the Center's holdings are BLM collections, it stands to reason that a significant amount of the 60 oversized documents observed and measured will also be BLM collections as well.

did not have any secondary containers. Unaccessioned materials remain in the condition in which they were received.

Photographic Records

All accessioned photographic materials (i.e., prints, negatives, and slides) (Table 7) were placed in polyethylene sleeves designed to operate with hanging file bars so that they may be stored in file cabinets. Individual images have not been assigned unique identifying numbers. A finding aid for these materials also was not apparent. Unaccessioned photographic material is stored in the slide cabinet until the materials can be processed and integrated into the existing system. Some additional unaccessioned photographic materials may be found in the boxes containing those collections.

Maps/Oversized Documents

None of the oversized materials (Table 7) were accessioned at the time of the assessment. These materials were rolled, and in many cases secured with rubber bands, and placed in the wire cart designed for this type of storage. Because the materials could not be assigned or matched with accession numbers, only a gross assessment was conducted and the extent was undetermined. Further, the Center's curation staff informed the assessment team that plans were being followed to have these materials flattened, conserved, encapsulated, processed, and stored in flat metal cabinets.

Collections Management Standards

Registration Procedures

Accession Files

The Center issues accession numbers to all projects that are being conducted on BLM land so that numbers will be assigned to collections when they arrive. All archaeological materials are then accessioned into the main collection upon receipt.

Location Identification

The location of artifacts within the repository is identified in the computer database.

Cross-Indexed Files

Files are cross indexed by accession number in the computer database.

Published Guide to Collections

There is no published guide to collections.

Site-Record Administration

The Center does curate site file records that are tracked using the Smithsonian Institution trinomial site-numbering system.

Computerized Database Management

A Unix database is set up for computerized records management. New collections are being entered first, followed by older ones as time and funds allow. Backups of the database are stored on disk and offsite.

Written Policies And Procedures

Minimum Standards for Acceptance

Written standards for submitting collections minimally address packaging, processing, and labeling practices.

Curation Policy

Written guidelines and procedures for curation minimally include labeling, cataloging, and packaging of collections.

Records-Management Policy

No separate written policy addresses the guidelines and standards for the curation of documentation.

Field-Curation Guidelines

Field curation guidelines are contained within the Center's curation plan.

Loan Procedures

There are written loan procedures and standard loan forms.

Deaccessioning Policy

The Center does not have a deaccessioning policy. Currently, there is no federal policy in place that specifically addresses the deaccessioning of federally owned archaeological collections. Federally owned archaeological collections remain the property of the United States.

Inventory Policy

Collections (artifacts and records) are inventoried upon receipt.

Curation Financing

Funding for the curator's position, which is an Inter-Personnel-Agreement contracting position, is provided directly from the BLM. This includes salary as well as supplies and travel. Funding for collections management also is obtained from the Bureaus of Indian Affairs and Reclamation.

Curation Personnel

The Center currently has only one full-time position devoted exclusively to collections management and curation. The position is funded directly by BLM. The Center has an active internship program in place, but the interns do not spend the majority of their time in collections management.

Access to Collections

Access to the collections is limited to Center cultural resource staff and researchers by permission. A letter of intent is necessary, and access to the collections is supervised.

Future Plans

The Center will be moving to a newly constructed building in Billings in the near future. The facility has an area specifically designed as a curation facility that will accommodate all the artifacts and records, with additional room for growth. The new facility will address deficiencies noted during this assessment.

Comments

1. The current repository is well maintained, and the collections are, for the most part, in good condition.

2. There is no integrated pest management system in place at the Center.

3. The collections storage area is not equipped with air conditioning.

4. Security is fair, consisting of key locks and staff monitoring. The collections are in a garage area that receives high traffic at certain times of the day, and the repository on a whole lacks an intrusion detection system. This condition will be addressed by placement of the collections in the new facility.

Recommendations

1. Immediate attention should be given to completing the processing of all archaeological materials and the entry of all information recorded on accession cards into the Center's database. BLM should consider the addition of a curatorial assistant to the staff to assist with this process.

2. Though adequate for the types of material classes in the collections, consideration should be given to placing all collections in boxes that have removable lids. Removing packing tape damages a box each time it is opened. Lids would reduce damage to the box considerably and provide easier access to the materials.

3. Consideration should be given to replacing the inert plastic sleeves, which are attached to the front of the box for the label, with a zip-lock sleeve constructed of inert plastic. Though infinitely better than writing directly on the box, the current system can be cumbersome, especially when retaping the flaps on the box.

4. Consideration should be given to installing an adequate intrusion detection and deterrent system.

5. Temperature and humidity should be better monitored and controlled.

6. Pest management should include more scheduled monitoring and control.

7. Additional label information and the development of more robust finding aids for the collections of associated documentation would greatly increase the potential use of these materials.

8. Additional storage space should be allocated for records storage, as the current space has reached full capacity.

9. Current plans for cartographic and oversized materials should be followed as soon as possible.

4

Oregon Trails Interpretive Center

Baker City, Oregon

Repository Summary

Volume of Artifact Collections: 4.9 ft^3

Compliance Status: Artifacts require partial rehabilitation to comply with existing federal guidelines and standards for archaeological curation.

Linear Feet of Records: 0.8 linear feet

Compliance Status: Documentation requires complete rehabilitation to comply with existing archival guidelines and standards.

Human Skeletal Remains: No human skeletal material is present at the Center.

Status of Curation Funding: BLM funds are used for the curator's position.

Date of Visit: April 5, 1999

Point of Contact: Sarah LeCompte, historian/curator

Assessment

Archaeological collections administered by the Oregon Trail Interpretive Center are housed in the Maintenance/Curation Building (Figure 13), a 10-year old structure located approximately 1 mile from the Interpretive Center. The building's offices, laboratory, records room, and collections storage area are all located adjacent to one another in the same portion of the building.

Structural Adequacy

The repository has wood siding on its exterior walls, plasterboard interior walls, a suspended acoustical-tile ceiling, and a concrete foundation. The corrugated metal roof is original to the building.

Figure 13. Exterior view of the Oregon Trails Interpretive Center curation facility.

The building has had leaks in the floor due to a faulty humidity-control system. All utility systems are original and have undergone no major episodes of repair or upgrade. Windows are located throughout the building, except in the collections area. All windows have aluminum frames and shades. BLM personnel indicate the windows are

airtight. St. Louis District personnel noted one main entrance/exit door at the side of the building.

The main collections storage area floors are concrete, the interior walls are plasterboard, and the ceiling is composed of wood trusses. There are no windows in the 1,079 ft^2 collections area, which is currently filled to approximately ninety percent capacity. Most of the collections in this area are archaeological in nature, but one corner of the room holds taxidermy specimens.

Environment

The repository has central air conditioning and heat systems that are equipped with dust filters. Temperature is kept at 70º F, and humidity levels are kept at 40%. Humidity is monitored using a hygrothermagraph. The building is professionally cleaned three times a week. All lighting is nonfiltered fluorescent. Ultraviolet filters have been purchased but have not been installed on light fixtures.

The main collections storage area is identical to the rest of the repository in terms of its environmental maintenance. There are no windows in the collections storage areas and all lighting is nonfiltered fluorescent. The main collections area is cleaned by the curator on a quarterly basis.

Pest Management

Staff monitor the repository and the main collections area, and any episodes of infestation are treated on as-needed basis. St. Louis District personnel did not notice any evidence of infestation during the assessment; however, the curator did mention that there had been some past episodes that had been dealt with satisfactorily.

Security

Security measures for the repository consist of an intrusion alarm that is wired to the police department, motion detectors, window locks, dead-bolt locks on exterior doors, key locks on interior doors, lockable storage cabinets for special collections and records, and controlled access by staff. The main collections area is secured by a key lock on one set of doors—those closest to the processing laboratory—however, a large set of double doors in the center of the room does not lock and is accessible to the rest of the repository. The curator attempts to control access to this area; however, because most of the employees possess keys, tight control over who enters the facility is not currently possible.

Fire Detection and Suppression

Fire protection in the repository consists of a manual fire alarm system, smoke detectors, heat sensors, and a sprinkler/suppression system. Fire extinguishers are also present throughout the building. The main collections storage area is serviced by the same fire detection and suppression systems as the rest of the repository. Collections are not stored directly under sprinkler pipes but rather are located parallel to the pipes. Fire extinguishers, which were last inspected in 1998, were noted in the collections area.

Artifact Storage

Storage Units

Artifacts in the main collections area are stored in two types of storage units. The first consists of multiple sets of adjoining, immovable, enameled-metal shelving units (Figure 14). Units measure 36 x 18 x 88 inches (l x w x h). The second is a variety of lockable storage cabinets that measure 58 x 33 x 75 inches, 58 x 32 x 37 inches, and 37 x 20 x 52 inches (l x w x h) (Figure 15). A total of 4.9 ft^3 of archaeological materials (thirty percent metal and seventy percent glass) were examined during this assessment.

Primary Containers

Artifact collections are housed in nonacidic cardboard boxes of varying sizes (Figure 16). Boxes use folded flaps and lids for security. Boxes have adhesive sleeves for the box label, which are attached to the front of the box. In addition, inserts also are placed within the box. Labels are written in marker and include the project, date, site name, owner, and site and accession numbers. Materials housed in the cabinets are stored in boxes that are labeled as noted above or they are loose in the metal drawers. Drawers are labeled with paper insert labels with a typewritten drawer number.

Secondary Containers

Figure 14. Storage units used at the Oregon Trails Interpretive Center curation facility.

Figure 15. Storage units for special collections housed at Oregon Trails Interpretive Center curation facility.

Secondary containers for the artifact collections consist mainly of plastic, zip-lock bags. Other containers include wrapping paper (butcherlike) and Ethafoam®. Secondary container labels are either adhesive or are tied to the secondary containers. Information on the labels is somewhat limited and usually includes only a lot number.

Laboratory Processing and Labeling

Approximately twenty percent of the collections sampled had direct labels in ink. All items were sorted by accession number.

Figure 16. Type of primary container used to hold collections at the Oregon Trails Interpretive Center curation facility.

Human Skeletal Remains

Human skeletal remains are not part of the Center's inventory.

Records Storage

Storage Units

Associated documentation is stored in the curator's office in two file cabinets. One cabinet is a standard five-drawer, legal-sized file cabinet. The other is a four-drawer, legal-sized Fireking® file cabinet.

Primary Containers

The file cabinets described above serve as the only primary containers housing the associated documentation at the Interpretive Center.

Secondary Containers

Secondary containers include file folders, both acid-free and acidic in construction.

Paper Records

Paper records (0.8 linear feet) constitute the bulk of the materials currently curated at the Interpretive Center. Because the Interpretive Center received its collections primarily through donations, associated documentation is sparse. Only two accession numbers—1 and 21—contain associated records. These records are stored in acidic manila file folders,

labeled directly in either pen or pencil. Label information is consistent but includes only object catalog numbers. This material is stored in a standard five-drawer, legal-sized file cabinet. Located in the above-described Fireking® file cabinet are two small reports, one for each accession, which are included in the total extent of 0.8 linear feet. This collection needs to be processed, repackaged, and described in appropriate finding aids.

Maps/Oversized Documents

A single oversized drawing (0.01 linear feet) from Accession Number 1 was discovered loose in one of the Fireking® file cabinet drawers. This item needs to be processed, repackaged, and included in the finding aid developed for Accession Number 1.

Collections Management Standards

Registration Procedures

Accession Files

All archaeological materials are accessioned into the main collection upon receipt.

Location Identification

The location of artifacts within the repository is identified in the computer database.

Cross-Indexed Files

Files are cross indexed by accession number in the computer database.

Published Guide to Collections

There is no published guide to collections.

Site-Record Administration

The Center does curate site file records that are tracked using the Smithsonian Institution trinomial site-numbering system.

Computerized Database Management

A database was available for computerized record management; however, it is currently being reconfigured due to a system crash earlier in the year. Data entry will resume once the system is on line. Once running all data is backed up on a weekly basis on disk with a duplicate copy stored in the main interpretive center.

Written Policies And Procedures

Minimum Standards for Acceptance

There are written standards for submitting collections that address packaging, processing, and labeling practices.

Curation Policy

The Interpretive Center has written guidelines and procedures for curation that include labeling, cataloging, and packaging of collections.

Records-Management Policy

There is a written policy addressing the guidelines and standards for the curation of documentation.

Field-Curation Guidelines

There are no written field-curation guidelines.

Loan Procedures

There are written loan procedures and standard loan forms.

Deaccessioning Policy

The Interpretive Center does not have a deaccessioning policy. Currently, there is no federal policy in place that specifically addresses the deaccessioning of federally owned archaeological collections. Federally owned archaeological collections remain the property of the United States.

Inventory Policy

There is no written inventory policy; however, inventories are conducted on a random basis and according to specific needs.

Curation Financing

Funding for the curator's position is provided directly from BLM.

Curation Personnel

The Interpretive Center currently has only one full-time position devoted exclusively to collections management and curation. The position is funded directly by BLM.

Access to Collections

Access to the collections is limited to the curator and researchers by permission. A letter of intent is necessary, and access to the collections is supervised.

Future Plans

The Interpretive Center will be updating their computer inventory system following their system crash. This will allow better control over holdings.

Comments

1. Security consisting of key locks and staff monitoring, is fair for the collections area, but not ideal. Security should be improved so that access is truly limited only to the curator and curatorial staff.

2. Fire detection and suppression systems are in place in the collections area.

Recommendations

1. Provide additional security in the collections storage area. Extraneous keys should be identified by the curator, and nonessential keys should be collected. Access to the collections should be restricted to the curator.

2. Standardize primary and secondary containers for better stability of all materials.

3. Install ultraviolet filters on light fixtures in the repository.

4. Include more scheduled monitoring and control in the pest-management program.

5. Process, repackage, and appropriately describe all associated documentation as soon as possible.

5

Findings Summary

Archaeological collections at three BLM repositories in Colorado, Montana, and Oregon were assessed according to MCX-CMAC protocols, which are predicated on the requirements set forth in 36 CFR Part 79 (Table 8). Overall, the assessment team examined 103.4 ft^3 of artifacts and 703 linear feet of associated documentation. A building evaluation, survey questionnaire, and collections and documentation assessments were completed at all repositories. Six general statements can be made regarding the results of the assessment.

1. Only the Anasazi Heritage Center meets the minimum standards of 36 CFR Part 79. The Billings Curation Center does not meet minimal standards because of its deficiencies in security, its lack of air conditioning in the collections storage area, and its need for more scheduled monitoring and control of pests. However, these situations will be remedied once collections are moved into the new Billings facility. Similarly, the Oregon Trails Interpretive Center also requires a better defined pest management program. It should be made clear that St. Louis District personnel did not notice any signs of pest infestation at either the Billings Curation Center or the Oregon Trails Interpretive Center during this assessment.

2. In order to achieve proper care, BLM collections in Colorado and Montana that are not currently in these repositories should be coalesced as soon as possible.

3. All archaeological collections require at least partial rehabilitation to comply with 36 CFR Part 79.

4. None of the repositories achieve the level of care needed to ensure archival preservation. Records collections at the Oregon Trail Interpretive Center

Table 8.
Presence/Absence of Infrastructure Controls at Repositories Housing Bureau of Land Management Archaeological Collections

Facility	Fire Safety[1]	Security[2]	Environmental Controls[3]	Pest Management[4]
Billings Curation Center	yes	no	no	no
Anasazi Heritage Center	yes	yes	yes	yes
Oregon Trails Interpretive Center	yes	yes	yes	no

[1] Indicates that a repository possesses adequate fire detection **and** suppression capabilities.
[2] Indicates that a repository possesses an adequate intrusion detection **and** deterrent system.
[3] Indicates that a repository possesses adequate environmental controls, specifically providing for air conditioning and heat in the repository and collections area.
[4] Indicates that a repository possesses *regular* monitoring **and** control for pests.

require complete rehabilitation (See Table 3), whereas records at AHC and the Billings Curation Center require only partial rehabilitation (See Table 3).

5. All facilities possess full-time curators and/or collections managers.

6. None of the facilities possess full-time archivists. In the case of the Oregon Trail Interpretive Center and the Billings Curation Center, a full-time archivist is not warranted by the extent of archival materials at these repositories. Additional training of current staff would be appropriate. The Anasazi Heritage Center could benefit from the addition of a professional full-time archivist, if only to address current issues and the unprocessed and unaccessioned materials.

Repositories

All three repositories evaluated as part of this project are federally owned. All three repositories are professionally serviced on, at least, a weekly basis. Collections storage areas at all three repositories are cleaned either by the curatorial staff or by supervised professionals on an as-needed basis. None of the repositories store extraneous items such as field equipment, hazardous chemicals, or personal items in collections storage areas—an unacceptable practice in professional collections repositories.

Environmental Controls

All three repositories control temperature through the use of central or radiated heat and air conditioning (Table 8). The Billings Curation Center, however, has no air conditioning in its collections area, and only the Anasazi Heritage Center and the Oregon Trails Interpretive Center possess temperature and/or humidity monitoring/control systems.

Pest Management

All repositories control for pests to some degree (Table 8). This is either performed by staff on an as-needed basis (Billings Curation Center and Oregon Trails Interpretive Center) or as part of an integrated pest management program where inspections are conducted by staff and trained professionals on a regular schedule (Anasazi Heritage Center).

Security

All repositories, except the Billings Curation Center, meet the minimum federal standards for security of archaeological collections, of which a primary requirement is the presence of an intrusion alarm system (Table 8). The Billings Curation Center does not possess an adequate system for intrusion detection and deterrence. However, all of the repositories are secured with key and/or dead bolt locks, most provide for limited access, and those with windows include window locks.

Fire Safety

Adequate fire detection and suppression devices are present in all three of the repositories (Table 8). Acceptable fire safety requires fire detection and fire suppression capabilities.

Artifact Curation

Overall, collections at all three repositories have been adequately prepared for long-term curation. However, each repository should more actively maintain their collections by using more appropriate primary and secondary containers. For example, boxes with lids should replace all folded flap boxes that have suffered from repeated opening and closing.

Overall, primary containers are acidic cardboard boxes with folded flaps, each encompassing a variety of volumetric capacities. Many other primary containers sampled are overpacked and coated with dust. All boxes include some type of label that varies between direct and indirect in nature.

Most of the collections are stored in plastic bags that are secured using twist ties or zip-locks. (Table 9). One percent of the collection is stored loose, without secondary containers, and another one percent is housed in paper bags. Most secondary containers are labeled directly, although adhesive or interior labels are also present. Most of the secondary containers examined are in need of replacement in order to safeguard the longevity of these collections.

Data also were generated on the major prehistoric and historical-period material classes present in each of the collections (Table 10).

Chipped stone is the most abundant prehistoric material in the assessed collections. Principal historical-period materials include glass and metal.

Human Skeletal Remains

Human skeletal remains and associated burial goods were noted but not included in the sample of collections assessed by St. Louis District personnel.

Table 9.
Percentages of Secondary Containers for BLM Archaeological Materials

Secondary Containers	%
Plastic Bags	98
Paper Bags	1
Loose	1
Total	100

Table 10.
Summary of Material Classes Present in Select BLM Archaeological Collections

Material Class	%
Prehistoric	
Stone (chipped and/or ground)	44
Faunal Remains	28
Ceramics	13
Botanical Samples	2
Soil Samples	2
Flotation Samples	1
^{14}C Samples	1
Worked Bone	1
Historical Period	
Glass	3
Metal	2
Other	3
Total	100

Note: For materials listed under Other see individual chapters. Percentages calculated by volume.

Records Management

Records associated with archaeological work conducted from BLM lands encompass 731 linear feet (see Table 11 for breakdown) and include paper, photographic, maps, and draft report records. In many cases, paper records are not housed in acid-free folders, photographs are not isolated and stored in chemically inert sleeves, and large-scale maps are not stored flat in map drawers. Finding aids that accurately describe archival materials and invaluably increase access and retrieval to these materials are often absent. In most cases, documentation for the collections has either been misplaced over the years or simply was not curated with the archaeological materials after fieldwork was completed.

Because of the lack of temperature and humidity monitoring and controls, all records are subject to temperature and humidity fluctuations. Nonarchival materials readily absorb and release moisture, leading to expansion and contraction, dimensional changes that accelerate deterioration and promote major visible damage such as cockling paper, flaking ink, warping pages, and cracked emulsion on photographs.

Management Controls

Information regarding management controls is available from all repositories. Basic policy and procedure statements for artifact curation, inventories, and records management are present at all three repositories.

BLM personnel should be commended for taking steps to address curation-management concerns. Now that specific deficiencies have been identified, action must be taken to protect these collections. At minimum a plan of action for the

Table 11.
Summary in Linear Feet of Associated Documentation Under BLM Responsibility

Repository	Paper	Photographic	Microformat	Electronic	AV	Maps and Oversized	Unaccessioned	Total
AHC	544.1	124.6	0.45	1.2	1.9	16.1	13.60	702.0
Billings Center	12.8	1.60	—	—	—	—	13.8	28.2
Oregon Trail	0.8	—	—	—	—	0.01	—	0.8
Format Total	557.7	126.20	0.50	1.2	1.9	16.10	27.4	731.0

long-term management of the collections should implement the following four tasks.

1. Complete all NAGPRA tasks.

2. Establish a priority for the collections and their rehabilitation.

3. Inventory and rehabilitate the collections.

4. Develop an Archives Management Plan.

Implementation of these tasks will allow for the continued usefulness of materials that have already contributed so much to the formation of archaeological thought in the United States.