U.S. Department of the Interior
National Park Service

Archeology Program

The Secretary of the Interior's Report to Congress on the Federal Archeology Program, 2004–2007

Departmental Consulting Archeologist
Archeology Program
National Park Service
Washington, DC
2010

The Goals and Accomplishments of the Federal Archeology Program

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Executive Summary

Archeological resources are a vital part of our nation's heritage. The sites and collections that comprise archeological resources are unique sources of information that powerfully evoke people, places, and history. Federal laws such as the Antiquities Act, the National Historic Preservation Act, and the Archaeological Resource Protection Act emphasize the significance of these resources and charge Federal agencies to protect and care for them.

The Secretary's Report to Congress on the Federal Archeology Program documents the archeological resource management and stewardship activities carried out by Federal agencies between FY2004 and FY2007. The Departmental Consulting Archeologist prepares the report on behalf of the Secretary on the basis of information provided by over two dozen Federal agencies that conduct, fund, or require archeological activities and investigations.

The data in the FY2004-2007 report convey a sense of urgency. Environmental changes from climate change and increased energy resource extraction have the potential to destroy archeological sites before we even know that they exist. Many Federal archeological collections remain uncataloged and difficult to locate or use for research, exhibition, educational purposes, and cultural practices. Existing technologies for preserving and providing access to archeological data, records, and reports are not keeping up with the volume of data and reports produced annually. Looting of archeological sites on Federal lands continues, while law enforcement funding has remained the same size or decreased. Interpretation and synthesis of archeological research lags behind heritage tourism developments, which threaten to "love sites to death." Agencies are losing personnel and expertise as baby boomer archeologists retire and are not replaced, creating a knowledge and skills gap that will be difficult to bridge.

Pressing needs include:

- The completion of inventories of archeological sites on Federal lands, targeting especially areas at risk from the adverse impacts of climate change and accelerated resource extraction activities. Federal archeologists must use modeling, sampling, and remote sensing to identify and characterize sites and regions more efficiently.
- The proper care of Federal archeological collections, records, and reports. Accession and cataloging projects must be done to facilitate access to the objects and information for collections management, research, interpretation, and exhibition. Agencies that partner with non-government repositories must ensure that the curation of collections meets Federal standards.
- The better use of electronic technologies to manage, preserve, and provide access to Federal archeological information. Standards are needed for more effectively posting reports, data, and synthesized research results using digital technologies. Initiatives to develop digital versions of legacy data and reports will facilitate accessibility of information to a wider audience.
- The integration of archeology into civic life. Education about the content and importance of archeological resources in schools at all grade levels helps students to appreciate their cultural and historical environments. Archeological investigations provide opportunities for community involvement and civic engagement that enhance public interest in, and stewardship of, archeological resources.
- The expanded protection of archeological sites with a larger law enforcement workforce and greater use of surveillance technologies. Protection programs must leverage citizen interest in volunteerism and public service to create and maintain archeological site steward programs. Such programs require commitment and support from the Federal government for coordination and supervision.
- The creation of new archeology positions and replacement of retiring Federal archeologists to ensure a professional functional workforce capable of shouldering the archeological stewardship responsibilities that Federal agencies are charged to fulfill.

Recommendations

Recommendation 1: To prevent the loss of information and heritage values that archeological resources contain, more funding and personnel must be directed to ongoing efforts to identify, evaluate, and document the resources so as to avoid or mitigate adverse effects on significant and vulnerable sites. Because climate change and development are actively destroying archeological resources, these efforts must be accelerated.

Recommendation 2: In order to guarantee the public benefit of access to archeological collections for research, exhibition, and use by descendent groups, archeological collections must be cataloged, curated, and appropriately housed by professionally trained staff. Funding and personnel are needed to complete cataloging and curation of Federal archeological collections to ensure their long term preservation and accessibility.

Recommendation 3: In order to ensure public access to archeological data now and in the future, digital data standards and practices for preservation of records associated with archeological investigations must be developed and utilized, as is being done in other preservation fields.

Recommendation 4: In order to strengthen archeological stewardship, coordinate and train volunteers, encourage and promote civic engagement by community and descendent groups, and support public education and outreach related to agency archeological activities and projects.

Recommendation 5: To protect the integrity of archeological sites on Federal lands and to deter looting and vandalism, strengthen working relationships between Federal archeologists, law enforcement officers, and Federal prosecutors. Provide training for archeologists, law enforcement personnel, and attorneys to heighten awareness of ARPA and requirements of ARPA in prosecuting looters and vandals.

Recommendation 6: In order to maintain a high level of care for archeological sites, collections, and data, and sustain professional levels of outreach and communication about archeological resources, an adequate workforce is required. All agencies, but especially land managing agencies, need to hire more permanent archeologists. Succession planning should ensure that retiring "baby boomer" archeologists are replaced by permanent, well-qualified professional archeologists.

Table of Contents

9 | List of Tables
10 | List of Figures
10 | List of Profiles
11 | Section I. Overview of the Federal Archeology Program
- 17 | Chapter 1. Introduction
  - 17 | The Initial Federal Archeology Program
  - 20 | The Expansion of Federal Archeological Stewardship Responsibilities
  - 22 | Implications for the Federal Archeology Program
  - 23 | The Effects of Limited Staff
  - 24 | Conclusion
- 25 | Chapter 2. Summary of Archeological Resource Management Developments, 2004-2007
  - 25 | Advisory Council on Historic Preservation Activities
  - 27 | NHPA and NEPA Integration
  - 27 | Growing Attention to Agency Accountability for Heritage Assets
  - 28 | The National NAGPRA Program
  - 29 | Conclusion of the Kennewick Man Case
  - 30 | Developments in Consultation
  - 33 | Archeological Resource Protection Developments
  - 35 | Hurricanes in 2005
  - 35 | Anniversaries and Commemorations: The Antiquities Act of 1906
  - 37 | Conclusion

39 | Section II. Current Activities: 2004-2007
- 40 | Chapter 3. Preserving Archeological Resources
  - 40 | Identification, Evaluation, and Documentation of Sites
  - 45 | Accelerating and Focusing Identification, Evaluation, and Documentation
  - 47 | Conclusion
- 48 | Chapter 4. Archeological Collections, Data Preservation, and Access
  - 48 | Caring for Archeological Collections
  - 50 | Long-Term Preservation and Access to Archeological Collections Records
  - 51 | Public Access to Archeology Reports with Limited Distribution
  - 53 | Archeological Data Sharing
  - 56 | Conclusion
- 57 | Chapter 5. Supporting Public Archeology Outreach
  - 57 | Public Education and Outreach by Federal Agencies
  - 62 | Connecting Archeological Stewardship and Public Service through Volunteering
  - 64 | Public Service and Partnerships
  - 64 | Conclusion
- 65 | Chapter 6. Archeological Resource Protection and Prosecution of Looters
  - 66 | Looting and Vandalism on Federal Land
  - 69 | Site Stewardship Programs
  - 74 | Conclusion

75 | Section III. Critical Issues
76 | Chapter 7. Maintaining the Federal Agency Archeological Work Force
76 | Expanding the Archeological Workforce
79 | Trends in Retiring and Hiring
81 | Conclusion
82 | Chapter 8. Conclusions
82 | Preserving Archeological Resources
83 | Preserving Archeological Collections
84 | Promoting Civic Engagement
84 | Preventing Looting and Vandalism
84 | Maintaining the Archeology Workforce
87 | Acknowledgments
89 | References

List of Tables

12 | Table 1. Acronyms for Federal government departments and agencies, other organizations, and legislation related to Federal archeology.

14 | Table 2. Federal agencies that contributed substantive data to the 2004-2007 Secretary's Report to Congress on the Federal Archeology Program.

21 | Table 3. Federal laws and regulations since 1975 with new or enhanced responsibilities for archeological resources.

41 | Table 4. Land managing agencies, archeological resource management activities, 1985-2007, showing that the number of overviews and record searches increased over time as the number of data recovery projects decreased.

44 | Table 5. Regulatory and development agencies' archeological resource management activities, 1985-2007, showing that archeological activities promoted by these agencies increased over time.

50 | Table 6. The percentage of cataloged Federal archeological collections reported held by land managing Federal agencies has not changed substantially since 1994.

50 | Table 7. Accuracy in reporting of BLM artifact repositories increased between 2004 and 2007.

52 | Table 8. Citations in NADB-R by year published, 1975-2007, show a decrease in the number of more recent reports in the database.

63 | Table 9. Partnerships and volunteers made valuable contributions to the Federal Archeology Program, 1998-2007.

66 | Table 10. The reported incidents of looting and vandalism of archeological resources on Federal lands, 1985-2007, did not decrease over time.

67 | Table 11. Reported costs associated with damage to archeological resources on Federal Lands (in dollars) are more than reported fines.

68 | Table 12. Reported prosecutions for looting and vandalizing archeological resources on Federal lands, 1985-2007, do not keep pace with the number of documented violations.

70 | Table 13. Laws and regulations under which people involved in looting and vandalism on Federal lands were prosecuted, as reported in the NPS LOOT Clearinghouse.

77 | Table 14. Comparison of archeologists employed to archeologists needed in 2007, showing the insufficiency of work force numbers to meet Federal stewardship responsibilities.

78 | Table 15. Permanent Federal agency archeologists, 2007-2008, reported by age.

78 | Table 16. Permanent Federal agency archeologists, 2007-2008, reported by years to retirement.

79 | Table 17. Permanent and temporary Federal archeologist positions (GS 193), 2000-2007.

80 | Table 18. Projected numbers of permanent Federal agency archeologists in 2017 on the basis of present replacement rates.

List of Figures

15 | Figure 1. Federal agency contributions to the Secretary's Report to Congress, 1985-2007.

42 | Figure 2. Permits and tribal notifications for land managing agencies, 1985-2007.

43 | Figure 3. Archeological data collecting activities by land managing agencies, 1985-2007.

63 | Figure 4. Partnerships held by development and regulatory agencies, 1998-2007.

64 | Figure 5. Archeological resource partnerships with land managing Federal agencies, 1998-2007.

65 | Figure 6. Reported incidents of looting and vandalism of archeological resources on Federal lands and law enforcement funding, 1985-2007.

72 | Figure 7. Distribution of legal tools used to charge vandals, according to the NPS LOOT Clearinghouse 1971-2007.

72 | Figure 8. Types of archeological resource violations cases in the NPS LOOT Clearinghouse.

80 | Figure 9. Permanent and temporary Federal archeologist positions (GS 193), 2000-2007.

List of Profiles

18 | A Regulatory Agency's Stewardship of Archeological Resources - The Minerals Management Service's Archeological Protection Program

32 | The African Burial Ground National Monument

36 | The Papahānaumokuākea Marine National Monument

54 | Synthesizing Archeological Data - The Chaco Digital Archives

55 | Cooperating to Manage Archeological Information - The Federal Highway Administration (FHWA)

59 | Excavation in a National Park - The President's House in Independence NHP

61 | Heritage Education - Project Archaeology

Section I.

Overview of the Federal Archeology Program

The Secretary's Report to Congress on the Federal Archeology Program is part of a series formally established in 1985 pursuant to the Archaeological Resources Protection Act (ARPA) that built on reporting efforts dating to the 1970s. Since 1985, the Secretary's Report has been a primary record of Federal archeological stewardship. Federal agencies with responsibilities for archeological resources contribute information to the Secretary's Report. For the years 2004-2007, between 26 and 28 agencies reported each year (Table 1, Table 2 and Figure 1).

The following report describes the efforts by Federal agencies to identify, evaluate, document, interpret, preserve, and protect archeological resources, and to use those resources to engage the American people with their heritage. To do so, it outlines the Federal laws, regulations, and executive orders that direct the Federal Archeology Program; discusses accomplishments and examples of best practices; and makes recommendations for the future responsible stewardship of archeological resources by Federal agencies. Particular emphasis is placed on the current needs of Federal agencies and where improvements should be made for the maintenance and improvement of activities and levels of effort. Individual agencies, departments, and Congress are asked to consider the recommendations to enable the Federal Archeology Program to act on its stewardship responsibilities.

Archeological resources are a key component of Federal responsibilities for the environment. Chapter 1 looks at the early history of Federal archeological stewardship. Groundbreaking legislation in the 20th century for the protection of archeological resources greatly expanded archeologists' scope of work. Chapter 2 focuses on activities and events between 2004 and 2007. The new national monuments established during this time remind us that nationally significant archeological resources are yet to be discovered, and that new Federal properties also add to the volume of archeological responsibilities.

Data from 1985-2007 is available on the NPS Archeology Program website (www.nps.gov/history/archeology/SRC/data.htm).

Table 1. Acronyms used for Federal government departments and agencies, other organizations, and legislation related to Federal archeology.

AAM	Association of American Museums
AAP	Army Alternate Procedures
AIRFA	American Indian Religious Freedom Act
ARPA	Archaeological Resource Protection Act
ACHP	Advisory Council on Historic Preservation
ACRA	American Cultural Resources Association
ANG	Air National Guard
ASA	Abandoned Shipwreck Act
ATF	Bureau of Alcohol, Tobacco, Firearms and Explosives
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BOP	Bureau of Prisons
BOR	Bureau of Reclamation
DHS	Department of Homeland Security
CDI	Chaco Digital Initiative
CEQ	Council on Environmental Quality
DOA	Department of the Army
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
EDA	Economic Development Administration
EO	Executive Order
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FASAB	Federal Accounting Standards Advisory Board
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FMHA	Farmers Home Administration
FRA	Federal Railroad Administration
FSA	Farm Service Agency
FTA	Federal Transportation Administration
FWS	Fish and Wildlife Service
GPRA	Government Performance and Results Act
GSA	General Services Administration
HHS	Department of Health and Human Services
HUD	Department of Housing and Urban Development
INS	Immigration and Naturalization Service
MMS	Minerals Management Service
NAGPRA	Native American Graves Protection and Repatriation Act
NASA	National Aeronautics and Space Administration
NATHPO	National Association of Tribal Historic Preservation Officers
NCSHPO	National Conference of State Historic Preservation Officers
NEPA	National Environmental Protection Act
NHPA	National Historic Preservation Act
NM	National monument
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRC	Nuclear Regulatory Commission
NRCS	Natural Resources Conservation Service
NTHP	National Trust for Historic Preservation
OCS	Outer Continental Shelf
OPM	Office of Personnel and Management
OSM	Office of Surface Mining
RUS	Rural Utility Service
SAA	Society for American Archaeology
SHA	Society for Historical Archaeology
SHPO	State Historic Preservation Officer
SI	Smithsonian Institution
SMCA	Sunken Military Craft Act
THPO	Tribal Historic Preservation Officer
TVA	Tennessee Valley Authority
USACE	Corps of Engineers
USAF	United States Air Force
USCG	United States Coast Guard
USGS	United States Geological Survey
USFS	United States Forest Service
USMG	United States Marine Corps
USN	United States Navy
USPS	United States Postal Service
VA	Department of Veteran Affairs
WYDOT	Wyoming Department of Transportation

Table 2. Federal agencies that contributed substantive data to the 2004-2007 Secretary's Report to Congress on the Federal Archeology Program.

Land Managing Agencies (21 agencies)	2004	2005	2006	2007
Department of Agriculture				
U.S. Forest Service	X	X	X	X
Department of Commerce				
National Oceanic and Atmospheric Administration			X	X
Department of Defense				
Air Force	X	X		X
Army Corps of Engineers	X	X	X	X
Department of the Army	X	X	X	X
Department of the Navy	X	X		X
Department of Energy	X	X	X	X
Department of Homeland Security				
Bureau of Customs and Border Protection			X	
Coast Guard	X	X	X	
Department of Interior				
Bureau of Indian Affairs	X			
Bureau of Land Management	X	X	X	X
Bureau of Reclamation	X	X	X	X
Fish and Wildlife Service	X	X	X	X
National Park Service	X	X	X	X
US Geological Survey	X	X	X	X
Department of Justice				
Federal Bureau of Prisons	X	X	X	X
Department of Transportation				
Federal Aviation Administration	X	X	X	X
Department of Veteran Affairs		X	X	
National Aeronautics and Space Administration	X	X	X	X
Tennessee Valley Authority	X	X	X	X
US Postal Service		X		
Annual Totals For Land Managing Agencies	17	18	17	16

Development Agencies (9 agencies)	2004	2005	2006	2007
Department of Agriculture				
Farm Services Agency	X	X	X	X
Natural Resources Conservation Service	X	X	X	X
Rural Development Service	X	X	X	X
Department of Commerce				
Economic Development Agency	X	X	X	X
Department of Health and Human Services	X	X	X	X
Federal Emergency Management Agency		X	X	

	2004	2005	2006	2007
Department of Transportation				
Federal Highway Administration			X	X
Federal Transit Administration	X			
General Services Administration	X		X	X
Annual Totals for Development Agencies	7	6	8	7

Regulatory Agencies (3 agencies)	2004	2005	2006	2007
Federal Energy Regulatory Commission	X	X	X	X
Department of Interior				
Mineral Management Service	X	X	X	X
Nuclear Regulatory Commission	X	X	X	X
Annual Totals for Regulatory Agencies	3	3	3	3
Annual Totals for All Agencies	27	27	28	26

Note: Table does not include agencies that responded to data calls with narrative data but did not submit quantitative data, or responded to report that they had no data to contribute.

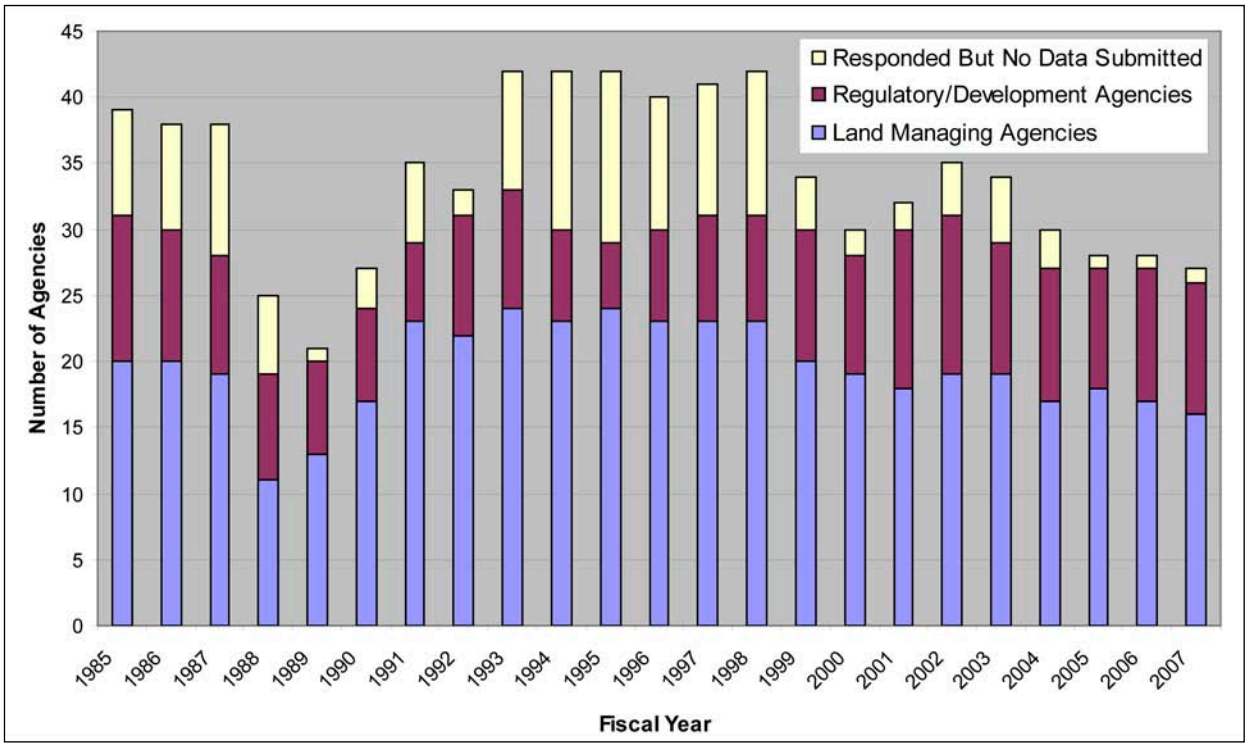

Figure 1. Federal agency contributions to the Secretary's Report to Congress, 1985-2007.

Chaco Anasazi Jar, Chaco Culture National Historical Park, CHCU 1085. (NPS)

Chapter I

INTRODUCTION

Over the course of the 20th and 21st centuries, the Federal Archeology Program has expanded throughout the Federal government due to new responsibilities and requirements established in law and mandates. Early in the 20th century, the American people recognized the importance of archeological resources and provided for their preservation and protection through their elected representatives. The Antiquities Act of 1906 made archeological resources on Federal lands into Federal property. The Act emphasized that the preservation of antiquities is in the public's interest – a tenet reflected in more recent legislation and still held by the Federal Archeology Program.

The Initial Federal Archeology Program

In the first third of the 20th century, only two Federal agencies employed permanent archeologists. Archeologists at the Smithsonian Institution (SI) conducted research and developed exhibits for the museum. Archeologists at the National Park Service (NPS) undertook archeological investigations in parks. By mid-century, both agencies worked with other Federal entities to conduct "emergency" or "rescue" or "salvage" archeology for large Federal public works projects (e.g., Jennings 1985; Johnson 1966; Thiessen 1999; Wendorf and Thompson 2002). More Federal agencies hired permanent archeological staff as time went on.

Expansion of the Federal Archeology Program in the 1970s responded to recognition by the Federal government of its environmental responsibilities. Four laws, in particular, identified that archeological resources require Federal protection: the National Historic Preservation Act (NHPA) of 1966, the National Environmental Policy Act (NEPA) of 1969, the Archeological and Historic Preservation Act (AHPA) of 1974, and the Archaeological Resources Protection Act (ARPA) of 1979.

New legislation required public agencies to provide appropriate care for archeological resources. Section 14 of ARPA and Section 110 of NHPA require Federal agencies to have programs that focus on the identification, evaluation, and documentation of archeological resources. Land managing agencies (e.g., the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS)) care for and regulate the use of public lands and the archeological resources on them. Land managing agencies also make accessible and interpret outstanding archeological sites for the public. Regulatory and development agencies assist, fund, or promote development projects (e.g., the Federal Highway Administration (FHWA) and the Natural Resources Conservation Service (NRCS)) or regulate private enterprises that have public effects (e.g., the Federal Energy Regulatory Commission (FERC) and the Nuclear Regulatory Commission (NRC)).

Of the agencies that contributed data to the Secretary's Report for 2004-2007 for one or more of the years' covered, twenty-one are land managing agencies, nine are development agencies, and three are regulatory agencies (Table 2). Archeological activities in agencies that manage small amounts of land, have small granting programs, or issue few regulatory permits do not have the same impact on general trends as larger agencies. Their activities illustrate the wide scope and challenges of Federal archeological resource stewardship.

Ensuring compliance with laws promulgated in the mid-20th century continues to be a major activity for many Federal agency archeologists. In fact, Federal agency archeologists have faced growing responsibilities since the mid-1960s. The following sections detail the expansion of their duties.

Montezumas Castle National Monument

A Regulatory Agency's Stewardship of Archeological Resources -

The Mardi Gras Shipwreck Project

The Minerals Management Service (MMS), Department of the Interior, is responsible for leasing our nation's natural gas, oil, and other mineral resources on the Outer Continental Shelf (OCS) and for renewable offshore energy projects that extract energy from wind, waves, and ocean currents. The bureau's mission is to manage the ocean energy and mineral resources to enhance public and trust benefits, promote responsible use, and to realize fair value.

Within the Offshore Energy and Minerals Management Program, the Archeological Resources Protection Program ensures that archeological resources are considered when planning projects on the OCS. The program uses a phased approach to identify areas of the OCS having archeological resource potential that must be evaluated prior to MMS approval of any activities that might disturb the seabed.

The OCS covers an area of approximately 1.5 billion acres extending from state waters out to the limit of the Exclusive Economic Zone, 200 nautical miles offshore. The archeological resources within this area include both historic shipwrecks and inundated prehistoric sites dating from the last ice age when global sea levels were significantly lower than present.

The MMS conducts archeological baseline studies to compile information on the locations of historic shipwrecks and terrestrial coastal prehistoric archeological sites. These data are used to construct predictive models for locations of unknown sites on the continental shelf. Information on the locations of shoals, capes, historic shipping lanes, ports, and harbors; concentrations of known historic shipwrecks; and bottom sediment thickness and composition is used to predict where shipwrecks are most likely to be found. Models of offshore prehistoric sites occurrence are developed using the locations of known coastal sites. The models are used in combination with information on relative sea level change; relict shelf topography; and the thickness, age, and composition of bottom sediments to predict where prehistoric sites are most likely to occur on the continental shelf.

Using the models, MMS can identify portions of the continental shelf that have potential for archeological resources. The "archeologically sensitive" areas require marine remote sensing surveys to evaluate the archeological site potential of individual lease tracts before permitting lease activities. Should the remote sensing survey data indicate evidence of potential archeological sites, MMS requires either that the area be

avoided or that further investigations be conducted. MMS's archeological protection program has resulted in the identification and evaluation of numerous historic shipwrecks, including the only World War II German U-boat (U-166) recorded in the Gulf of Mexico; and systematic documentation and recording of a pristine early 19th century wooden sailing vessel (the *Mardi Gras* wreck) in over 4,000 feet of water.

In 2007, the MMS Gulf of Mexico Region and Texas A&M University participated in an archeological excavation of a 200-year-old shipwreck in 4,000 feet of water in the Gulf of Mexico. It was the deepest maritime archeological excavation yet attempted worldwide and was successful in recovering over 500 artifacts from the seafloor, including a rare galley stove, a 6-pound cannon, navigation equipment, and an assortment of glass bottles, ceramics, and personal items. Analysis of the artifacts suggests that the ship sank some time between 1808 and 1820, a dynamic period in Gulf of Mexico and Louisiana history.

The site was initially discovered in 2002 during a pre-lay right-of-way pipeline remote operated vehicle (ROV) survey. Negotiations with the leasing company, Okeanos Gas Gathering Company, led to an agreement for the company to provide $3.87 million toward a data recovery project at the site. Public outreach on the data recovery and research efforts has been a major component of the project. A project website is hosted by the State of Florida's Florida Public Archaeology Network at www.flpublicarchaeology.org/mardigras/.

The accidental discovery of this important site highlights the Federal government's limited ability to protect submerged cultural heritage on the OCS. While the MMS has authority under NHPA Section 106 to require archeological surveys and to mitigate adverse effects from permitted actions, the Service has no authority at present to afford long-term protection from non-permitted activities such as treasure salvage to resources discovered on the OCS through its permitted actions. The MMS has been working on developing a solution to this legislative gap and will continue these efforts.

The MMS program has funded several studies to refine methods and technology for locating and evaluating submerged and buried prehistoric archeological sites (i.e. ancestral aboriginal sites) beneath the present ocean floor. The sites are unique and critical to the understanding of North American prehistory because they represent types and ages of archeological sites and provide potential evidence for cross-cultural contacts from other continents not represented in sites presently found above sea level.

In FY 2007, MMS entered into a cooperative agreement with the Coastal Marine Institute to carry out a study to determine the accuracy of models for identifying high probability areas for prehistoric site location in the Gulf of Mexico. The goals of the study included determining whether the sedimentary and geochemical indicators presently used to identify buried archeological sites from sub-seabed cores are adequate; identifying additional archeological site indicators in core-sized sediment samples; assessing the optimal survey line spacing to detect geologic and potential archeological features; and identifying possible discrete archeological features that are located within depths that can be tested through excavation. Further information on this project is available at: www.gomr.mms.gov/homepg/regulate/environ/ongoing_studies/gm/GM-92-42-136.html.

Studies of this type provide data for management decisions to eliminate areas from need for further survey. They promote wise use of limited resources and direct survey efforts to areas where sites are likely to be located.

The Expansion of Federal Archeological Stewardship Responsibilities

Even as Federal agencies hired professional archeologists to handle compliance with the statutes enacted in the 1960s and early 1970s, new statutes passed to care for archeological resources. The new laws, regulations, and executive orders further increased the individual workloads of Federal archeologists, including their responsibilities for outreach and education to enhance the public benefits of archeology (Table 3).

Passage of ARPA in 1979

President Jimmy Carter signed the Archaeological Resources Protection Act (ARPA) into law on October 31, 1979. ARPA addressed the looting of archeological sites, a problem which had become substantially worse due to rising commercial values for certain kinds of artifacts (Collins and Michel 1985; Fowler and Malinky 2006). ARPA and its 1988 amendments expanded agency archeologists' responsibilities by requiring more detailed and extensive archeological resource management activities.

ARPA improved the protection of archeological resources on public lands and the ability of Federal archeologists, law enforcement officers, and prosecutors to pursue site looters. It built on the Antiquities Act of 1906 to provide a more carefully defined legal authority for the management, preservation, and protection of Federal archeological resources, and stiffer penalties for those convicted of violating its protection of archeological resources. ARPA, as a result, requires substantially more expertise and effort by Federal archeologists than previous statutes.

NHPA Amendments

The National Historic Preservation Act (NHPA) was passed in 1966 to establish a national historic preservation program. Section 106 of NHPA required Federal agencies to take into account the effects of their undertakings on historic properties, including archeological sites. Amendments to NHPA in 1980 and 1992 further increased the scope of agency archeologists' responsibilities. Section 110 of NHPA directed all Federal agencies to develop programs to care for historic properties under their jurisdiction or control. Among the responsibilities outlined in Section 110 are the identification, evaluation, and protection of historic properties, including archeological sites. Federal agencies are required to nominate appropriate sites to the National Register of Historic Places.

The Secretary of the Interior published amended regulations implementing NHPA Section 106 (36 CFR 800) in 2000 that enhanced the involvement of Indian tribes in consulting with Federal agencies and State Historic Preservation Officers (SHPOs) during review of Federal undertakings. Federal agencies are required to consult with any tribes that ascribe religious or cultural significance to historic properties that may be affected by an agency undertaking. Federal agencies also are directed by the amended regulations to make "reasonable and good-faith" efforts to identify concerned tribes with whom to consult. Ensuring that proper tribal consultation occurs as part of project planning is a responsibility often assigned to agency archeologists. For projects on tribal land, Federal agencies are required to consult with the Tribal Historic Preservation Officer (THPO), if there is one, or tribal leadership.

Protection for Shipwrecks

The Abandoned Shipwreck Act (ASA), enacted in 1988, specified additional responsibilities for Federal agency archeologists by asserting Federal ownership of abandoned shipwreck sites on Federal lands (Aubry 1997). Typically, these sites are historic period shipwrecks embedded in river bottoms of navigable rivers or ocean bottom land within three miles of the United States coast. The law reflected concerns about the proper treatment and protection of historic shipwrecks. In 1990, the NPS published guidelines to assist State and Federal agencies in meeting their responsibilities (NPS 2007a).

The Sunken Military Craft Act (SMCA), passed in 2004, provides protection for submerged archeological sites and materials associated with the U.S. military. It clarified Federal government ownership of U.S. military craft, required excavations to be prompted by scientific and educational inquiry, and established a permit system for investigations.

Learn more about archeology and Federal law at: www.nps.gov/history/archeology/tools/laws.htm.

Table 3. Federal laws and regulations since 1975 with new or enhanced responsibilities for archeological resources.

Law or Regulation	Summary of Additional Requirements
1979—Archaeological Resources Protection Act (ARPA)	▪ Required detailed regulation of archeological investigations on Federal land, through a permit system; ▪ Required legal and law enforcement expertise to effectively investigate and prosecute looters; ▪ Required care and curation of archeological collections, data, records, and reports; ▪ Required reporting on agencies' resource protection and stewardship activities.
1980—National Historic Preservation Act (NHPA) amendments	▪ Section 110 was added, requiring Federal agencies to assume more responsibility for the stewardship and protection of historic properties they owned or controlled.
1988—Abandoned Shipwreck Act (ASA)	▪ Asserted Federal ownership of historic abandoned shipwrecks within the internal navigable waters of the U.S.; ▪ Specified that the laws of salvage and finds do not apply to historic abandoned shipwrecks; ▪ Required programs and expertise for management and protection of these resources on submerged Federal lands.
1988 —Archaeological Resources Protection Act (ARPA) amendments	▪ Required public outreach programs about the importance of archeological resources; ▪ Required site inventory programs to identify and document significant sites on agency lands.
1990—36 CFR 79, "Curation of Federally-Owned and Administered Archeological Collections"	▪ Required the effective management and preservation of Federal archeological collections; ▪ Required standards for collections repositories; ▪ Required standards for professional curation practices and records management; ▪ Required standards for scientific, educational, and religious uses of the collections; ▪ Required standards for inspections and inventories to ensure appropriate care and accountability of Federal archeological collections.
1990—Native American Graves Protection and Repatriation Act (NAGPRA)	▪ Specified that under certain conditions specific objects and human remains were to be repatriated to Native American and Native Hawaiian communities.
1992—National Historic Preservation Act (NHPA) amendments	▪ Required more consultation with tribes, providing a greater role for Native Americans in Federal preservation programs; ▪ Established Tribal Historic Preservation Office program; ▪ Required incorporation of historic preservation planning into agency programs; ▪ Required agencies to withhold confidential information about the location of historic properties and other sensitive information.
1993—Government Performance and Results Act (GPRA)	▪ Required strategic goals for resource management and measurable specific objectives to chart progress in achieving goals. ▪ Since 2000, required that archeological resources be considered as "auditable" assets; ▪ Required monitoring known assets (sites, collections, records, and reports) to ensure that they are properly managed and treated.
1995—43 CFR 10 regulations, Native American Graves Protection and Repatriation Act (NAGPRA)	▪ Required a written summary describing agencies' collections generally and that this information be provided to Indian tribes; ▪ Required item-by-item inventories of Native American human remains and funerary objects; ▪ Required consultation as part of planning for agency activities on Federal land so that activities that would be undertaken in the event of a discovery could be agreed upon in advance; ▪ Required disposition to culturally affiliated Indian tribes of Native American human remains or other objects covered by the law and found on Federal land, after they were removed and documented.
2000—36 CFR 800 regulations revisions, National Historic Preservation Act (NHPA)	▪ Required consultation with Indian tribes for the review of undertakings that would affect historic properties ascribed by a tribe as having religious or cultural significance whether or not the property is located on tribal land.
2004—Sunken Military Craft Act (SMCA)	▪ Clarified that Federal ownership of United States sunken military craft is not extinguished by the passage of time, regardless of when the craft sank, except by an express divestiture of title by the United States. ▪ Required a permit system for activities that disturb, remove, or injure United States sunken military craft, and requires that activities are for archeological, historical, or educational purposes. ▪ Specified that the law of finds does not apply to United States sunken military craft, wherever located, and that no salvage is allowed without the express permission of the United States.

Help for Federal Collections

Access to, and long-term care of, archeological collections has become a more widely recognized responsibility since the 1970s. The DOI published "Curation of Federally-Owned and Administered Archeological Collections" (36 CFR 79), authorized by ARPA, NHPA and other statutes, in 1990. Its definitions, standards, procedures, and guidelines describe the actions that Federal agencies must take for the effective management and preservation of archeological collections.

Within the Federal Archeology Program, and among archeologists generally, concern about deficiencies in long-term collections care is growing. The workload required for proper curation and access to Federal archeological collections largely falls to non-Federal repositories, such as university and state museums, which work in partnership with Federal agencies. Even though access and use of collections has increased during the past two decades (e.g., Childs 1995, 2004; McManamon 1995; Sullivan 1992; Sullivan and Childs 2003), deficiencies in long-term collections care remain a major concern.

NAGPRA Statute and Regulations

Congress enacted the Native American Graves Protection and Repatriation Act (NAGPRA) in 1990. The law created a new relationship between Federal agencies and Indian tribes, Alaska Native groups, and Native Hawaiian organizations. Requirements for consultation under NAGPRA give Native Americans a greater voice in discussions about the ways that Federal agencies should care for and return Native American human remains and cultural items covered by the law. Within Federal agencies, most often the responsibility for compliance with NAGPRA's requirements is assigned to agency archeologists.

The NPS published NAGPRA regulations in 1995. The regulations provided direction in implementing the statute. Several sections were reserved, most notably 43 CFR 10.7 – "Disposition of unclaimed human remains, funerary objects, sacred objects, or objects of cultural patrimony," and 43 CFR 10.11-"Disposition of culturally unidentifiable human remains."

Accountability to the American People

The Government Performance and Results Act of 1993 (GPRA) directs the accountability of Federal agencies for the historic properties and cultural resources in their care. GPRA requires Federal agencies to establish strategic plans; explicit, outcome-related goals and objectives; and measures by which progress in meeting goals and objectives can be reported and tracked. Accountability measures focused on the care of archeological sites, historic structures, and museum collections are now required. Executive Orders 13287 (2003) "Preserve America," and 13327 (2005) "Federal Real Property Asset Management" also direct agencies to develop accounting or documentation systems that track the performance of agency staffs in caring for historic properties, including archeological sites.

Resource accountability has become a regular, annual aspect of Federal agency requirements. Archeological site monitoring and periodic site condition assessments and documentation to meet accountability measures have become routine responsibilities. Compliance with accountability laws and executive orders, however, adds to the overloaded work schedules of Federal archeologists at all levels.

Implications for the Federal Archeology Program

The Federal laws, statutes, regulations, and amendments implemented since 1966 have placed significantly greater responsibilities on Federal agency archeologists today in comparison to their early 20th-century counterparts. Daily responsibilities and tasks may include:

- Compliance to ensure that archeological resources are not damaged in the process of Federal undertakings. Archeologists may monitor projects, conduct excavations or research, and write reports or paperwork.
- Participation in law enforcement procedures. Archeologists may contribute to investigations and prosecutions of looters, which means conducting site evaluations, creating damage estimates, writing reports, curating recovered artifacts, testifying in court, and other related duties.
- Curation of archeological collections from projects on Federal land. Archeologists must be knowledgeable in appropriate curatorial practices and data management. They may also provide access to researchers, create exhibits, or lead tours.

- Development of protections for submerged archeological resources. Some Federal archeologists have developed expertise in non-terrestrial techniques to inventory, evaluate, and document submerged resources.
- Consultation with Indian tribes, descendant groups, or other stakeholders with vested interest in archeological resources. Federal agency archeologists often represent Federal agencies in consultations.
- Respond to archeological resource accountability and asset management issues.
- Write and administer grants, contracts, and cooperative agreements.

President's House Excavation

All of these duties are in addition to keeping up with methodological, technological, and intellectual developments within the field of archeology proper.

The Effects of Limited Staff

Staffing cuts in the archeology programs of the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) exemplify the impacts of greater responsibilities placed on fewer staff. Cuts have created insufficient numbers of professional archeological staff to handle the full range of management responsibilities.

Archeologists at BLM spend almost all of their time ensuring that NHPA Section 106 compliance is done for third party uses of the land BLM manages. Little or no staff time or funding exists for wide area archeological inventories, archeological collections management, working with partners, site protection, or public education and outreach. The National Trust for Historic Preservation (NTHP) (2006:12-18) has recommended doubling the cultural resource staffing in BLM's 127 field offices from one to at least two individuals to enable a wider range of archeological management and stewardship activities.

Inadequate staffing has also had detrimental effects on USFS archeology programs. Looting and vandalism of archeological sites on USFS land is on the rise. The increase is matched neither by increased hiring of law enforcement personnel and archeologists, nor by engaging members of the public who might act as site stewards or otherwise work to prevent such destruction of public property. In 2004, the USFS turned away 38 percent of the people volunteering to help agency archeologists because the agency did not have the personnel and funding to manage volunteers (NTHP 2008:31). As a result, the USFS missed an opportunity to build enduring relations with members of the public and to get them out onto public lands managed for their benefit.

The Federal government has too few archeologists to support the Federal Archeology Program. Additional support for agency archeologists and archeological programs is necessary for Federal agencies to accomplish all of their responsibilities regarding the stewardship of Americans' archeological heritage. Chapter 7, Maintaining the Federal Agency Archeological Work Force, explains the issues in detail.

Conclusion

The preservation of American archeological resources was a motivational force behind the passage of the Antiquities Act in 1906. Further legislation in the mid-20th century further signaled Americans' commitment to the preservation of archeological heritage. Laws and regulations have brought new responsibilities for care for greater numbers of identified sites and to account for the resources on behalf of the American people. The Federal archeological workforce strives to meet the challenges of good stewardship.

Good resource stewardship ensures that archeological resources are identified, evaluated, documented, interpreted, and treated as appropriate. It improves our understanding of the past; supports sustainable heritage tourism; expands opportunities for public participation in professionally supervised archeological investigations, especially through public service and volunteer programs; and increases work efficiency. All of these outcomes have substantial public benefits.

At the beginning of the 21st century, the Federal Archeology Program faces new challenges. The existing work force is stretched to the limits of its capacity and will lose significant expertise as baby boomer archeologists retire. At the same time, looting of archeological sites for artifacts to sell continues and increases. A shrinking workforce also affects the quality of archeological public programming and interpretation. Our Federal archeological collections are not curated appropriately, which limits access for management and research. The following chapters outline these challenges in more detail.

Marching Bear Mound Group, Effigy Mounds National Monument. (NPS)

Chapter 2

SUMMARY OF ARCHEOLOGICAL RESOURCE MANAGEMENT DEVELOPMENTS, 2004-2007

The fiscal years 2004-2007 saw a number of developments and events related to archeological resource management. Significant events include progress made in legislative and policy protection of archeological resources, law enforcement activities, proclamations of new national monuments and archeological activities associated with the Antiquities Act centennial. Three major hurricanes in 2005 highlight the need for the proactive identification and documentation of archeological resources that are vulnerable to storm surges or sea level rise. These activities and events are part of the context in which Federal archeologists' responsibilities for archeological resources are conducted. The following chapter discusses the major developments in archeological resource management during the reporting period.

Advisory Council on Historic Preservation Activities

The Advisory Council on Historic Preservation (ACHP) is an independent Federal agency established by the National Historic Preservation Act (NHPA). The ACHP promotes the preservation, enhancement, and productive use of America's historic resources and advises the President and Congress on national historic preservation policy.

Amended Regulations for 34 CFR 800

The ACHP published a final rule amending 36 CFR 800, the regulations for implementing NHPA Section 106, in 2004. One amendment addresses a court decision clarifying the advisory role of the ACHP in NHPA Section 106 compliance. The Federal District Court for the District of Columbia in a 2001 ruling held that the ACHP could not require a Federal agency to change a determination regarding an undertaking's affect on a historic property. The agency must, however, acknowledge any public comments and demonstrate that it considered the comments before making a final decision about an undertaking.

Another amended regulation takes account of the District court's findings that activities subject to state or local regulations as a result of a delegation of authority or approval by a Federal agency were not considered undertakings for the purposes of 36 CFR 800 and were not subject to the Section 106 process. Only undertakings funded under the direct or indirect jurisdiction of a Federal agency or those requiring a Federal license, permit, or approval are subject to the Section 106 process.

One of the amendments published in August 2004 specified that the ACHP can propose exceptions to the Section 106 process on behalf of specific Federal agencies, rather than requiring the agency itself to identify and propose the exception. Under certain circumstances, Federal agencies can obtain exceptions to conducting the Section 106 process through a programmatic agreement for recurring activities that are not anticipated to harm historic properties. Under the rule, the ACHP is able to facilitate standard procedures and coordination among agencies by proposing the exemptions.

Archeology Task Force

In 2004, the ACHP set up an Archeology Task Force. The task force included an expert in archeology; an ACHP member; and representatives of the Departments of Agriculture, Defense, Interior, and Transportation and the National Conference of State Historic Preservation Officers (NCSHPO); plus two observers from the ACHP's Native American Advisory Group (NAAG) and the National Association of Tribal Historic Preservation Officers (NATHPO). Representatives from the Society for American Archaeology (SAA), Society for Historical Archaeology (SHA), American Cultural Resources Association (ACRA), Register of Professional Archaeologists (RPA), and American Association of Museums (AAM) provided technical assistance as needed.

The task force considered three topics:

- Treatment of human remains and grave goods;
- Guidance regarding archeological resources and NHPA Section 106; and
- Archeology and heritage tourism.

The final ACHP policy regarding the treatment of human remains and grave goods recommends eight principles for decision-making regarding identification and treatment of burial sites, human remains, and funerary objects encountered during activities related

to the Section 106 process. The policy assists parties involved in planning undertakings or conducting investigations that encounter cemeteries to reach agreements and understandings with descendent groups that are legal, mutually satisfactory, and workable (ACHP; www.achp.gov/news022307hr.html).

New guidance assists Federal agencies in meeting their archeological responsibilities under NHPA Section 106 (ACHP; www.achp.gov/docs/ACHP%20 ARCHAEOLOGY%20GUIDANCE.pdf). Topics include starting the Section 106 process, consultation, reaching agreement on appropriate treatment, and completing the process. Special focus was placed on issues surrounding Section 106 and curation, private lands, and the quality of archeological work.

Consideration of heritage tourism aimed to expand the Preserve America initiative by ensuring public enjoyment of our nation's heritage through greater knowledge and appreciation of archeological properties. Task force representatives developed a policy statement and guidelines for heritage tourism at archeological sites and archeological interpretation. The full council approved them (ACHP; www.achp.gov/ArchPolicy.pdf).

The ACHP Native American Program

The ACHP established the Native American Advisory Group (NAAG) in 2004. The 13-member advisory group aims to ensure that Indian tribes and Native Hawaiian organizations have an effective voice within the ACHP. During the reporting period, the ACHP issued a statement regarding its trust responsibility to Native Americans and Native Hawaiians. The statement was developed through the Native American Program. In 2005, the White House hosted a briefing for NAAG members to establish productive relationships between members of NAAG and Federal agencies.

Preserve America

Preserve America (www.preserveamerica.gov) is a historic preservation initiative coordinated by the ACHP. Its goal is to encourage and support community efforts to preserve and enjoy cultural heritage, including archeological resources. The objectives of the initiative include a greater shared knowledge about the nation's past, strengthened regional identities and local pride, increased participation in preserving the country's cultural heritage assets, and support for the economic vitality of our communities. Executive Order 13287, "Preserve America," issued on March 3, 2003, directs Federal agencies to assist in the development of local and regional heritage tourism programs. Such heritage programs are a significant feature of many state and local economies.

The Preserve America Grants Program provides economic assistance to communities to protect, enhance, and use historic properties. Within the reporting period, grants were awarded in 2006 and 2007 to support community heritage tourism, planning, and interpretation programs. A number of grants went to communities that explicitly incorporated archeological research and interpretation into heritage tourism proposals.

The ACHP, Department of the Interior, and other national, state, and tribal historic preservation organizations sponsored the "Preserve America Summit," a national conference held in New Orleans, in 2006. The conference developed a set of recommendations for far-reaching improvements to cultural resource and historic preservation national infrastructure for documenting, accessing information, and caring for our cultural heritage (ACHP 2007). The recommendations intersect with the goals of the Federal Archeology Program, as outlined in the National Strategy for Federal Archeology (www.nps.gov/archeology/tools/natlstrg.htm), including creating a comprehensive inventory of historic properties (including archeological sites); conserving cultural collections; enhancing heritage education by developing communication strategies that include web sites, curriculum guides for the educational community; and engaging youth in historic preservation by developing programs for hands-on preservation activities.

NHPA Section 106 Programmatic Agreements

Programmatic agreements are one tool available to Federal agencies to streamline procedures for complying with Federal archeological resource protection laws, particularly NHPA Section 106. Programmatic agreements stipulate certain conditions that must be met in order for the streamlined procedures to apply.

During the 2004-2007 period, the NPS, ACHP, and NCSHPO began revisions of the 1995 programmatic agreement to simplify NPS compliance procedures for

NHPA. The revisions were deemed necessary in light of new regulations and challenges established after the 1995 programmatic agreement. The new programmatic agreement will help agency archeologists to fulfill their responsibilities more effectively and efficiently.

The Army completed its Army Alternative Procedures (AAP) in 2004. The AAP is a streamlined set of steps for complying with NHPA Section 106. In order to use the AAP, Army installations must prepare a Historic Properties Component that addresses the standard operating procedures for the identification, evaluation, assessment of effects, treatment and management of historic properties, including archeological properties. The ACHP certifies installations that have completed the Historic Properties Component and have met the certification criteria. Upon certification, the installation is free to implement historic preservation actions in accordance with its Historic Properties Component for five years without a need for project-by-project review. Two installations, Fort Sam Houston and Fort Benning, received certification from the ACHP in 2006.

NHPA and NEPA Integration

Federal agency archeologists have sought ways to streamline compliance with NHPA and NEPA, reduce duplication, and improve communication among stakeholders. In 2003, the White House Council on Environmental Quality (CEQ) released a report on NEPA implementation practices and opportunities for improvement (NEPA Task Force 2003). The report recommended the development of guidance for integrating the NEPA process with the NHPA Section 106 process whenever possible.

The ACHP published guidance for coordination of Section 106 reviews with NEPA as part of the 2004 amendments to 36 CFR 800 (36 CFR 800.8). The guidance encourages agencies to conduct Section 106 compliance in parallel with the NEPA process, and to coordinate timing of public participation, review, and decision points. Agencies may incorporate documentation developed during, and outcomes of, the Section 106 process into NEPA documents and decisions. The Section 106 regulations also provide for a specific process, detailed at 36 CFR 800.8(c), whereby an agency may use the NEPA process to fulfill its Section 106 responsibilities, provided that NHPA standards and documentation requirements are met.

The guidance provides best management practices for coordinating NHPA and NEPA compliance activities. It helps Federal agency archeologists by enabling information and results of analyses to be completed and shared among stakeholders in a streamlined fashion. The result minimizes duplication of effort and promotes efficiencies in environmental planning and development. For background on the legal relationships between NEPA and NHPA, as well as other Federal statutes, see Hutt (2007) and Van Ness (2007:42-44).

Growing Attention to Agency Accountability for Heritage Assets

Since the Government Performance and Results Act (GPRA) passed in 1993, the reporting responsibilities of Federal agencies for archeological resources have become more rigorous and more time-consuming. Executive Orders (EO) 13287 "Preserve America" (2003), and 13327 "Federal Real Property Asset Management" (2005) amplify the accountability responsibilities and reporting requirements. Agencies have since developed procedures to track the performance of their staffs in accounting for and managing historic properties, including archeological resources, as heritage assets.

Archeological sites as heritage assets are included in accountability measures and Federal financial reporting. Archeological collections are moveable heritage assets and are included in Federal financial reporting. Accountability for these resources includes both inventories of the resources and up-to-date information about the condition of individual resources. Heritage assets are defined by the Federal Accounting Standards Advisory Board (FASAB) as: "… property, plant and equipment that are unique for one or more of the following reasons: (1) historical or natural significance; (2) cultural, educational, or artistic (e.g., aesthetic) importance; or (3) significant architectural characteristics." The board notes that "heritage assets are generally expected to be preserved indefinitely." FASAB heightened the attention to heritage assets by issuing the *Heritage Assets and Stewardship Land; Statement of Federal Financial Accounting Standards 29* (FASAB 2005) in 2005. It requires the reporting of heritage assets data as "basic information," subject to the same auditing standards as financial data. Accountability for archeological resources includes both inventories of the resources and up-to-date information about the condition of individual resources.

The DOI Heritage Assets Partnership (HAP) was created in 2006 to coordinate, evaluate, and oversee efforts to manage and report on heritage assets within the context of DOI's wider asset management goals and objectives. The committee provides a forum for DOI asset managers and heritage asset experts to develop common means to integrate the care and preservation of archeological resources into management plans in a manner consistent with preservation standards. Among their concerns are policies and procedures to identify, preserve, and protect archeological resources through monitoring and treatment programs. The DOI, through the leadership of the Asset Management Team and the work of the HAP, continues to improve its management of these unique and irreplaceable heritage assets.

The discovery, evaluation, and documentation of archeological sites are essential for good management, preservation, and protection. Regular visits to sites are necessary for resource monitoring to check that sites remain stable and well preserved, and are not threatened by changed conditions in the immediate environment, including human impacts such as looting or vandalism, road construction, etc. Formal periodic condition assessments are needed to check whether the treatment of sites is adequate and appropriate, or whether a different treatment is needed for site preservation.

Regular monitoring of archeological collections is also needed to protect objects in Federal care. Due to the age of artifacts, archeological collections, especially nonlithic artifacts composed of organic materials, are likely to need conservation treatments over time. Conservation may consist of active treatment of individual objects, or "preventative conservation" through use of proper storage supplies, equipment, and facilities with security and environmental controls. Bureaus in the Department of the Interior report that they are developing standards for documenting collection conditions and calculating conservation needs (R. Wilson, pers. comm., January 8, 2009).

How Federal agency archeology and cultural resource programs develop these accountability procedures and systems, and develop ways to fund archeological site and collection stewardship, continues to be an important focus of attention for Federal archeological resource management.

The National NAGPRA Program

The Native American Graves Protection and Repatriation Act (NAGPRA) was enacted in 1990 to address the rights of lineal descendants, Indian tribes, and Native Hawaiian organizations to human remains, funerary objects, sacred objects and objects of cultural patrimony with which they are culturally affiliated. The law requires Federal agencies and museums to consult with tribes and Native Hawaiian organizations, provide summaries and inventories of their collections and, upon receipt of a valid claim, repatriate cultural items to the appropriate parties. The NPS National NAGPRA Program carries out some of the responsibilities of the Secretary of the Interior in administering the law nationwide.

A number of developments between 2004 and 2007 relating to NAGPRA affect the Federal Archeology Program. The final rule for the reserved section of the NAGPRA Regulations on Civil Penalties was published in the Federal Register on April 3, 2003, and became effective on May 5, 2003. On May 23, 2005, the Secretary of the Interior delegated the authority to the Assistant Secretary for Fish and Wildlife and Parks for imposition of a civil penalty against any museum that fails to comply with the requirements of the Act. The Assistant Secretary has the authority to investigate museums that may not have complied with the law and to assess civil penalties if they are noncompliant. The NAGPRA civil penalty coordinator provides staff support to the Assistant Secretary for Fish and Wildlife and Parks.

The list of culturally unidentifiable individual sets of human remains in the collections of reporting museums and Federal agencies was posted on the NAGPRA website (http://grants.cr.nps.gov/CUI/index.cfm) as a searchable database in 2005, and was updated in 2006. The database allows the public to search for human remains held by museums and Federal agencies.

The final rule for the reserved section of the NAGPRA Regulations on Future Applicability was published in the Federal Register on March 21, 2007. A proposed rule for the reserved section of the NAGPRA Regulations on Disposition of Culturally Unidentifiable Human Remains was published in the Federal Register on October 16, 2007.

Conclusion of the Kennewick Man Case

Human skeletal remains were found in 1996 below the surface of Lake Wallula, a section of the Columbia River pooled behind McNary Dam in Kennewick, Washington. Indian tribes, local officials, and members of the scientific community all made claims on the skeleton. A group of scientists, the plaintiffs in the case, sued the Federal government to study the remains for scientific purposes.

The Kennewick Man case reached its legal conclusion in February 2004. A three-judge panel of the Ninth U. S. Circuit Court of Appeals issued an opinion supporting the earlier decision of the District Court in Oregon that in order for NAGPRA to apply to a set of Native American human remains, the remains must "… bear some relationship to a *presently existing* tribe, people, or culture to be considered Native American" (emphasis in original; Gould 2004:1596). The Circuit Court, again in support of the District Court, stated that the facts about the Kennewick Man skeleton could not reasonably be construed to provide such a link to any of the modern tribes or Indian groups who claimed a relationship with the remains. The Court went on to generalize from the specifics of the Kennewick case, noting that

> … the exhumation, study, and display of ancient human remains that are unrelated to modern American Indians are not a target of Congress's aim, nor was it precluded by NAGPRA (Gould 2004:1598).

The Circuit Court provided brief detail about the kind of a relationship that might serve as a threshold for other situations, in other words, how much of a relationship and what kinds of relationships should exist for a set of remains to pass into the "Native American" category and thus be subject to NAGPRA. The opinion notes,

> … though NAGPRA's two inquiries have some commonality in that both focus on the relationship between human remains and present-day Indians, the two inquiries differ significantly. The first inquiry [i.e., asking whether human remains are Native American] requires a general finding that [human] remains have a significant relationship to a presently existing 'tribe, people, or culture,' a relationship that goes beyond features common to all humanity. The second inquiry [i.e., asking which American Indians or Indian tribe bears the closest relationship to Native American remains] requires a more specific finding that [human] remains are most closely affiliated to specific lineal descendents or to a specific Indian tribe (Gould 2004:1599).

The Circuit Court reviewed the evidence collected and used by the government in the case and evaluated the Secretary of the Interior's conclusions for the evidence. The Court found that the Secretary's interpretation had inadequate factual support for the remains being either Native American or culturally affiliated with the claimant tribes (Gould 2004:1603 ff.). The Court noted that the Secretary overlooked evidence for a lack of connection or cultural continuity between the ancient remains and the modern tribes. The Secretary relied upon interpretations of tribal oral history accounts to reach a decision that the Kennewick remains were both Native American and culturally affiliated. The Court recognized the legitimacy of investigation of oral histories as one kind of evidence used to answer the inquiries that NAGPRA poses. The Court concluded, however,

> … that these accounts are just not specific enough or reliable enough or relevant enough to show a significant relationship of the Tribal Claimants with Kennewick Man. Because oral accounts have been inevitably changed in context of transmission, because the traditions include myths that cannot be considered as if factual histories, because the value of such accounts is limited by concerns of authenticity, reliability, and accuracy, and because the record as a whole does not show where historical fact ends and mythic tale begins, we do not think that the oral traditions … were adequate to show the required significant relationship of the Kennewick Man's remains to the Tribal Claimants (Gould 2004:1607).

Following the conclusion of the legal case, the Corps of Engineers worked with the plaintiffs, whose request to study the Kennewick remains was approved by the Federal court, to develop a study plan that would be as unobtrusive as possible to the remains.

Researchers examined the Kennewick Man remains in July 2005 and February 2006. Reports about the examinations and subsequent analysis of the measurements and observations are forthcoming. Currently, the most accessible and detailed descriptions, analyses, and interpretations of the Kennewick Man remains and related information are on the NPS Archeology Program website (www.nps.gov/archeology/kennewick/index.htm).

In addition to the analyses and interpretations about the skeletal remains, the Kennewick case generated discussion and written opinions regarding the study and treatment of human burials and remains from archeological sites; the appropriate balance between humanistic, cultural, and scientific investigation; and the appropriate interpretations of ARPA and NAGPRA (e.g., Bruning 2006; Burke et al. 2008; Mulligan 2006; Owsley and Jantz 2001; Swedland and Anderson 1999, 2003; Watkins 2000, 2003).

Legislation was proposed by the Senate to amend NAGPRA to ease the need to demonstrate clearly that Native American human remains or objects are affiliated with a current, federally-recognized tribe in order for the remains to be subject to the law and regulations in 2004 and 2005. The NAGPRA Review Committee annual report for 2006 endorsed the approach (NPS 2007b). A bill in the House of Representatives, however, was introduced in 2006. It was designed to focus the intent of NAGPRA on remains for which clear tribal affiliation could be determined. Neither legislative approach to clarifying appropriate implementation of NAGPRA moved any further in Congress.

Developments in Consultation

Consultation is required by Federal laws including NHPA, NEPA, NAGPRA, AIRFA and ARPA, as well as agency-specific legislation. Legal requirements ensure that Indian tribes, descendants, and other groups are involved in decision-making from the beginning of an archeological project. Early consultation guides projects in culturally sensitive and appropriate directions, and can avoid unanticipated discoveries and actions that create cost overruns. In the 2004-2007 period, consultation was improved through amendments to law that led to the development of professional guidance, establishment of historic preservation programs, and identification of tribal representatives to work with Federal agencies.

Consultation with Indian Tribes

NHPA amendments in 1992 authorized Federally recognized Indian tribes to assume responsibilities for cultural resources on tribal land. Since then, Indian tribes have created Tribal Historic Preservation Offices (THPOs) to administer aspects of the national historic preservation program. THPOs maintain information and records about archeological resources and archeological reports from projects on tribal lands, but also develop guidance for consultation practices.

Between 2004 and 2007, the NPS granted Tribal Historic Preservation Office status to twenty-eight tribes, bringing the total number of THPOs to sixty-six. In 2005, the National Association of Tribal Historic Preservation Officers (NATHPO) developed *Tribal Consultation: Best Practices in Historic Preservation* (NATHPO 2005). The guidance outlines a process and provides advice for consultation practices undertaken by government agencies. NATHPO's guide was joined by ACHP guidance on the NHPA Section 106 Consultation Process (ACHP; www.achp.gov/regs-tribes.html).

The 2005 Transportation Bill and Consultation

Additions to the 2005 Transportation Bill strengthened Federal agencies' responsibilities to consult with tribes, descendant groups, and other interested parties. The new provisions in the 2005 Transportation Bill ensure that consultation occurs early in the planning process.

Metropolitan planning organizations (MPOs) are now required to consult with state and local agencies responsible for historic preservation. In particular, an MPO is required to compare its transportation plan with the "inventories of natural or historic resources, if available." The long-range transportation plan is also required to discuss types of potential environmental mitigation activities and potential areas to carry out these activities (23 CFR 450.322(f,7)(g)).

Consultation with Descendant and Other Groups

Federal agencies are developing procedures to identify and contact descendants and other groups during the course of Federal undertakings. The African Burial Ground and Stillwater Lift Bridge discussed below are two examples of citizen involvement in consultations since the development of the NHPA regulations.

The African Burial Ground investigation shows how intense and politicized local concerns about the treatment of archeological investigations can be addressed through dedicated efforts to communicate through consultation. The initial excitement about the discovery of an 18th-century African cemetery in lower Manhattan eventually turned to concern about the impacts of planned new construction on the graves. Urged by community members, local and national political representatives forced GSA to modify its plans. They also required that part of the property intended originally as building space be used to commemorate the cemetery, the individuals buried there, and the historic early African American community of New York City. The story of community and political involvement regarding the African Burial ground shows how a local community can shape the outcome of a project through commitment to the consultation process (Blakey and Rankin-Hill 2004:2-37; Harrington 1993; LaRoche and Blakey 1997).

African Burial Ground National Monument

The African Burial Ground National Monument

Amid the hectic bustle and concrete canyons of lower Manhattan, are the final resting places of 10,000 to 20,000 African Americans, buried in the country's oldest known urban African cemetery. The African Burial Ground National Monument, two blocks from City Hall, honors the culture and memory of the free and enslaved Africans and African Americans who contributed to the building of our nation.

The first enslaved Africans arrived in New Amsterdam, the Dutch colony at the southern tip of Manhattan Island, in 1625. In 1665, the Dutch surrendered New Amsterdam to the English who continued to use slavery as part of their economic system. By the early 1700s, there were about 800 African men, women, and children in New York, 15 percent of the total population. New York contained the largest number of enslaved Africans of any American colonial settlement other than Charleston, South Carolina. During these times, 40 percent of New York's households included at least one enslaved African (Berlin 1998; Berlin and Harris 2005; Lepore 2005).

Africans and African Americans buried their dead on the edge of the growing city as early as 1712, after many of New York's churches denied their interment in church cemeteries. Burials in the cemetery continued until about 1795. By 1812, when the demands of a growing population encroached upon the cemetery, many of the graves were covered by up to 25 feet of fill dirt. By the 20th century, much of the cemetery was under buildings and pavement.

Archeologists first investigated the cemetery site for the General Services Administration (GSA) in 1991 before construction of a Federal building (Harrington 1993). Contrary to the assumption that any remnants of the cemetery were lost to development and time, archeologists excavated the remains of 423 individuals. Many had been originally wrapped in shrouds and buried in wooden coffins facing east. Coins, shells, glass, buttons, beads, clay pipes, pieces of coral, and quartz crystal had been placed inside some of the coffins (Perry et al. 2006).

When news of the discovery was made public, the African American descendant community protested the lack of involvement in decision making about the project. The African American descendant community in the city was successful in stopping construction until an acceptable plan was developed; ensuring that an African American archeologist, Michael Blakey, was in charge of analysis of the human remains; and lobbying that the human remains would be reinterred, a memorial built, and a national monument established.

Howard University in Washington, D.C. hosted the study of the human remains and objects. The move to one of the most prestigious learning institutions associated with African Americans in the country signaled the control that African Americans had over the interpretation of their history and identity. Blakey's insistence on identifying geographic and ethnic origins of individuals, rather than racial affiliation, resulted in a nuanced and complex view of colonial African American individual identities that transcended race. This approach also provided a more accurate view of a colonial New York that relied on slave labor to prosper and grow.

The excavated remains were re-interred in October 2003 at a publicly accessible section of the cemetery. President George W. Bush proclaimed a 15,000 square foot portion of the cemetery a national monument on February 27, 2006, protecting unexcavated graves.

The establishment of a national monument to memorialize a group of people who helped built New York City, but appears infrequently in historical records, was the result of discoveries made through compliance with NHPA Section 106.

Section 106 also was a powerful regulatory tool to compel GSA to consult with African American groups. The African Burial Ground project demonstrates affiliated communities' abilities to influence the research, interpretation, and disposition of ancestral human remains.

From Left to Right: Past, Present, and Future Images of Stillwater Lift Brige

Another example is the transformation of the Stillwater Lift Bridge from a vehicular bridge to a pedestrian bridge. Assistance from the Federal Highway Administration plus review by the U.S. Army Corps of Engineers triggered the NHPA Section 106 process. Citizens of Stillwater, Minnesota also used the Section 106 process to guide archeological and heritage preservation actions. After lengthy negotiations over the conversion to a pedestrian bridge of the vehicular Stillwater Lift Bridge over the St. Croix River, the community was able to retain the bridge for pedestrian use, incorporate it into a public use trail system, establish an endowment for the upkeep of the bridge, and specify a series of mitigation measures for affected historic properties. Mitigation measures included survey for archeological properties, articulating the bridge with the community's archeological district, and preparing nominations of significant properties for the National Register. For more information, visit the Stillwater Lift Bridge project website at www.dot.state.mn.us/metro/projects/liftbridge/index.html.

Archeological Resource Protection Developments

In the 2004-2007 period, the Federal Archeology Program sought improved protection of archeological resources through cooperation among programs, development of professional guidance, administration of archeological site stewardship programs, and coordination among local, state and Federal law enforcement. The results demonstrate the value of partnerships among groups for the protection and stewardship of archeological resources.

National NAGPRA Programs

The NPS National NAGPRA and Visitor and Resource Protection programs cooperated with the Department of Justice Executive Office for U.S. Attorneys and Office of Legal Education to develop a TELNET course on Cultural Resources Protection Law. The course was offered to Federal employees in 2007. At least 400 individuals viewed the course telecasts (S. Hutt, pers. comm., May 20, 2009).

National NAGPRA Program staff edited *Using ARPA Civil Penalties* (Foster 2007). The handbook demonstrates the utility of ARPA civil penalties in cases of looting and vandalism of archeological sites where criminal prosecution is not pursued. It also provides guidance for enforcing ARPA administratively.

Archeological Stewardship Programs

Archeological site stewardship programs are valuable components of protection plans for archeological resources on both public and private lands. They provide a way for professional archeologists to work towards the identification and protection of archeological resources while cultivating public interest in stewardship.

Private citizens in the BLM site stewardship program called "Adventures in the Past" help agency archeologists document and protect sites. Volunteers often demonstrate real dedication to the program. For example, one BLM volunteer recorded more than 120 separate cultural sites in the Dry Lake Area of northwestern Nevada, where he started a full scale monitoring program. He was recognized in the BLM's Making a Difference volunteer award ceremony in 2004.

Other programs are organized by concerned groups in cooperation with Federal land managing agencies. Volunteers in the Nevada Archaeological Site Stewardship Program assume responsibility for archeological sites on Federal lands. They report to the responsible land manager at least four times per year

about any changes to the condition of archeological resources including the destruction, vandalism or other deterioration of sites. In another case, the volunteer Chimney Rock Interpretive Association (CRIA) operates the Chimney Rock Interpretive Program under a special-use permit through the USFS, Pagosa Ranger District. Under USFS supervision, CRIA is responsible for site integrity and shares responsibility for site preservation with the agency. In 2007, it received a Save America's Treasures grant from the National Trust for Historic Preservation and the National Park Service for archeological stabilization.

In support of existing stewardship programs and to encourage the establishment of new ones, the NPS Archeology Program developed Technical Brief #22 *Developing and Implementing Archeological Site Stewardship Programs* (Kelly 2007, www.nps.gov/history/archeology/pubs/techBr/tch22.htm). The technical brief explores the components necessary to develop and implement successful archeological site stewardship programs.

Operation Bring 'Em Back

A two-year-long undercover operation carried out by BLM, USFS, Internal Revenue Service (IRS), Alcohol Tobacco and Firearms (ATF), Oregon State Police, and Central Oregon Drug Enforcement Team agents and archeologists targeted the illegal excavation and trafficking of Native American human remains and objects removed from archeological sites in central Oregon. Looters disturbed more than 100 sites, causing site damage with repair costs of more than $1 million. In January 2005, Federal agents served 26 search warrants and seized more than 100,000 artifacts in what may be the largest looting bust in U.S. history.

The investigation produced numerous local spinoff investigations into the possession and sale of illegal drugs (primarily methamphetamine), the illegal possession of firearms by felons, and the possession of illegally taken wildlife. Seven defendants were convicted of NAGPRA offences, the first successful NAGPRA prosecutions in Oregon. In addition, six defendants were convicted of drug trafficking, and four methamphetamine labs and three indoor marijuana farms were discovered (Tarler 2007:123-126).

Cultural and Archeological Response Team (CART)

The Cultural and Archeological Response Team (CART) is an NPS Midwest Region initiative to enhance resource protection by sharing personnel for a rapid response to violated sites. It focuses on the Missouri and Arkansas area, which has a documented history of theft and vandalism. The program trains participants in the required specialized skills, and is developing a computerized network to share intelligence about resource-related criminal activity beyond park boundaries.

The NPS Division of Law Enforcement, Security, and Emergency Services funded the initial CART training through an Archaeological Resource Protection Act (ARPA) Program Grant. The funds assist law enforcement in reducing or eliminating ARPA related criminal activity on NPS lands. The funding is allocated to target the highest priority ARPA crimes system-wide by assisting with investigations, overtime, travel, training, extension of non-permanent personnel, and equipment.

One use of CART has been at Buffalo NR, which is taking aggressive steps to combat looting and vandalism of archeological sites. Park staff developed an Archeological Resource Protection
Plan that emphasizes the collection of information about archeological resources within the park and sharing the information with law enforcement personnel. It includes a step-by-step protocol for recognizing and responding to archeological resource destruction within the park, which provides guidance for park staff that are involved in archeological resource incidents (Clark, et al. 2007).

Operation Indian Rocks

Operation Indian Rocks involved the BLM, Fish and Wildlife Service (FWS), U.S. Air Force (USAF), NPS, and two U.S. Attorney offices (Canaday and Swain 2006). The agencies cooperated in the field and courtroom efforts necessary to bring looters to justice.

Federal agents successfully prosecuted ARPA charges against five individuals in 2002 and 2003 after a year-long investigation into looting of Native American archeological sites on Federal lands in California. The case extended into 2004 when, through interviews of

suspects, Federal agents learned that a tour company with a permit to escort clients onto BLM lands in Nevada also was promoting the looting of archeological sites. ATV-Adventures employees allegedly encouraged the clients to search for and remove artifacts from archeological sites on Federal lands, in violation of ARPA.

Video surveillance demonstrated that the general manager and the owner of the company were both aware of the activities. Both pled guilty to one misdemeanor ARPA count in 2004. They were fined $2,000 and ordered to pay $3,692 in restitution to the BLM. ATV-Adventures pled guilty to one felony ARPA count and one felony count of aiding and abetting a crime. The corporation was ordered to pay $13,578 in restitution to the BLM, $60,000 in community service fees, and an $800 penalty assessment. The BLM suspended the company's special use permit for thirty days. The sentencing judge told the defendants that their actions were unacceptable, and that anyone who conducts such activities will be prosecuted and sentenced to prison (Canaday and Swain 2006:35-36).

Hurricanes in 2005

During the 2005 hurricane season, three Category 5 hurricanes (Katrina, Rita and Wilma) slammed into Gulf Coast states, battering them with rain and wind from Texas to Florida. Katrina was particularly destructive. Each was a Category 3 storm at landfall. Storm surge caused catastrophic coastal damage and breached levees around New Orleans. About 80 percent of the city was submerged.

Archeological sites were among the thousands of cultural resources affected by storm surge, flooding, and other hurricane-related effects. Eight national parks sustained damage. SHPOs in the affected states and Federal agencies, in particular the Army Corps of Engineers, Federal Emergency Management Agency and the NPS, worked to assess the damage to cultural resources and assisting in resource treatments.

Erosion from storm surge damaged prehistoric shell mounds at Everglades NP in Florida (NPS 2005a). Storm surge also damaged Fort Jefferson in Dry Tortugas NP, also in Florida. Roots of trees toppled by Hurricane Katrina's winds pulled up burials at Chalmette National Battlefield, Louisiana (NPS 2005b). Strong currents eroded sand islands in Gulf Island National Historic Seashore, destroying historic buildings and eradicating an 18th century cemetery.

Were it not for previous documentation, we would know little about the sites destroyed by the 2005 hurricanes. Archeological survey and documentation are crucial in areas threatened by natural disasters. The 2005 hurricane season emphasizes the potentially severe impacts of changing weather patterns on cultural resources. As weather events increase in frequency and intensity due to climate change, Federal agencies must identify archeological resources in anticipation of other such events. Site identification and assessment is crucial in setting priorities needed for good resource management.

Anniversaries and Commemorations: The Centennial of the Antiquities Act of 1906

Beginning in 2006, the United States commemorated the centennial of the Antiquities Act of 1906, the Federal law that provides much of the legal foundation for archeological and historic preservation and natural resource conservation in the nation. The Antiquities Act enables the President to set aside public lands as national monuments, which are defined as "historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest" (16 U.S.C. 431). Congress and the President have utilized the Act to create more than 125 national monuments.

President George W. Bush used the Act in 2006 to make proclamations that established two new national monuments. The African Burial Ground National Monument in New York City honors the early contributions of Africans and African Americans to the development of our nation. It preserves a small section of the largest historic African and African American cemetery in the country. The Papahānaumokuākea Marine National Monument is the largest marine protected area in the world, and the largest national monument ever proclaimed.

To commemorate the centennial, the U.S. Department of the Interior Museum in Washington, D.C. unveiled a new exhibit in June 2006, *The Antiquities Act of 1906 and the National Park Service: A Century of Archeology, Conservation, and Preservation*. The display included artifacts and photographs detailing the importance of the first law to protect America's archeological and historical resources.

The Papahānaumokuākea Marine National Monument

Northwest of the larger Hawaiian islands stretches a 1,200 mile long necklace of smaller islands and atolls surrounded by reefs and shallow seas. Archeological sites on the islands are silent tributes to the great navigational powers of the Hawaiian people, who explored the archipelago early in the first millennium A.D. The islands also witnessed World War II battles and at least sixty vessels and sixty-seven known aircraft were sunk around the islands.

President Theodore Roosevelt named many of the islands an island refuge in 1909. In 2001, President William Clinton designated the waters around the islands as a coral reef reserve. On June 15, 2006, President George W. Bush signed a proclamation that created the Northwestern Hawaiian Islands National Marine Monument (re-named the Papahānaumokuākea Marine National Monument in 2007). It spreads across the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve, the Midway National Wildlife Refuge, the Hawaiian National Wildlife Refuge, and the Battle of Midway National Memorial. The monument is managed by the US Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA), in coordination with the State of Hawaii.

The national monument covers roughly 140,000 square miles of reefs, atolls, and shallow sea in the Pacific Ocean. The islands and surrounding waters host over 7,000 species of animals, including the endangered leatherback, hawksbill, and green sea turtles; the Caretian woodpecker; and the Hawaiian mouse. Although the land area is limited, over 14 million seabirds nest within the monument, as well as four endangered land bird species. Thanks to their isolation, the reefs are among the healthiest and most extensive in the world.

Isolation has also protected remains of ancient settlements of Polynesians who visited and settled the islands. Many are in pristine condition and have not been disturbed. Two of the islands, Nihoa and Necker, were uninhabited at the time of discovery in the late 1700s. Agricultural fields, and house and temple platforms demonstrate, however, that people once lived on the islands (Kirch 1985). After the one settlement episode, the islands were never re-inhabited. The stone terraces and artifacts are, thus, priceless examples of Polynesian material culture from the first centuries of colonization of the Hawaiian archipelago.

The Antiquities Act, which was the legal instrument for creating the national monument, ensures that these important cultural and natural resources are preserved for future generations of Americans. Many of our national monuments, even if created to protect significant natural resources or scenic beauty, often contain significant cultural resources as well. Thus national monuments such as the Papahānaumokuākea Marine National Monument protect both natural resources such as endangered species and precious archeological resources that are often elsewhere destroyed through development or looted and vandalized because they are not protected by Federal law.

Papahānaumokuākea Marine National Monument Reef

Devils Tower National Monument

A number of conferences and forums were held to discuss the ongoing and changing significance of the Antiquities Act. The National Trust for Historic Preservation (NTHP) and the Wilderness Society celebrated the centennial by sponsoring, *The 100th Anniversary of the Antiquities Act: A Forum on the Protection of America's Cultural and Natural Heritage for a Second Century.* The National Park Trust held a forum on the *Centennial Celebration of the American Antiquities Act.* The Natural Resources Law Center and Center of the American West held a symposium, *Celebrating the Centennial of the Antiquities Act* at the University of Colorado School of Law. The Honorable Bruce Babbitt, former Secretary of the Interior, provided the keynote address.

Print and electronic publications also considered the importance of the Antiquities Act. The NTHP devoted an issue of its quarterly professional journal, *Forum Journal* to articles about the historical importance and contemporary relevance of the Antiquities Act (see articles in Wood 2006). The University of Arizona Press published *The Antiquities Act: A Century of American Archaeology, Historic Preservation, and Nature Conservation* (Harmon et al. 2006). The NPS Archeology Program developed webpages about the Antiquities Act (NPS; www.nps.gov/history/archeology/sites/Antiquities/index.htm).

As 2006 progressed, other centennials associated with the Antiquities Act were observed. On September 24, Devils Tower National Monument (NM), the first monument proclaimed using the authority of the Act, turned 100 years old. On December 8, El Morro NM, Montezuma Castle NM, and Petrified Forest NP (originally a national monument) celebrated their centennials with special activities.

Conclusion

The years 2004-2007 saw programmatic advances to protect and preserve archeological resources. The ACHP released several important policy documents and worked with agencies to develop NHPA Section 106 programmatic agreements. The period also saw twenty-eight new Tribal Historic Preservation programs, the resolution of the Kennewick Man case, and the Antiquities Act centennial. Centennial celebrations included proclamation of two new national monuments – Papahānaumokuākea and the African Burial Ground NM.

Challenges to the appropriate care of archeological resources are ongoing. Three major hurricanes in 2005 battered archeological sites along the Gulf Coast. Looting of archeological sites on Federal lands continues. Several major law enforcement operations successfully apprehended looters in the West by arresting individuals and obtaining convictions. Threats to archeological resources are ongoing and increasing.

Bowl, Pueblo IV A.D. 1315 - 1425. Bandelier National Monument (NPS)

Section II.

Current Activities, 2004–2007

The Federal Archeology Program enacts its responsibilities through compliance with Federal law and the protection and interpretation of archeological resources. Federal archeologists work to identify and document sites under Section 110 of the National Historic Preservation Act (NHPA) and to catalog and curate collections. They conduct NHPA Section 106 compliance to ensure that archeological sites, and the information they contain, are not adversely impacted by undertakings. These data are critical to make informed management decisions about land use. Federal archeologists also assist law enforcement officers to apprehend looters and vandals, and collect evidence to prosecute them. Furthermore, outreach and education is critical for public support for protection of archeological sites. Federal archeologists work with interpreters and educators to promote preservation and protection of our national heritage. Chapters 3-6 examine these activities in more detail.

Chapter 3 presents results of the efforts made to identify and document archeological sites through compliance with Section 106 or Section 110 of NHPA. Chapter 4 examines the state of Federal archeological collections, many of which result from efforts to mitigate the effects of undertakings on archeological sites on Federal lands. Chapter 5 focuses on efforts that Federal agencies make to communicate results of archeological investigations to the public. Public education and outreach has the added benefit of fostering support for archeology. Chapter 6 identifies efforts of archeologists, law enforcement personnel, U.S. Attorneys, and others to protect and preserve archeological sites by catching and punishing looters.

Chapter 3

PRESERVING ARCHEOLOGICAL RESOURCES

The preservation of archeological sites is a multi-step process of identification, evaluation, and documentation. Identification and evaluation involve locating archeological sites and assessing their condition and applicability to the National Register of Historic Places. Background research into site files and records or field studies are conducted to identity and evaluate sites. Data recovery, or excavation, is conducted to mitigate an adverse impact to archeological resources ahead of proposed undertaking. Documentation of sites provides a way to monitor condition. Together, identification, evaluation and documentation provide a course of action for the Federal Archeology Program to preserve archeological resources on Federal lands.

Identification, Evaluation, and Documentation of Sites

Good archeological stewardship begins with the identification, evaluation, and documentation of archeological sites. Record searches and field studies (i.e., archeological survey) of the impact areas of proposed undertakings ensure that archeological resources that may be affected by the undertaking are identified and evaluated before development takes place, as required by NHPA Section 106. Federal agencies must also establish a preservation program to identify, evaluate, and nominate eligible historic properties, including archeological sites, to the National Register of Historic Places (National Register), as required by NHPA Section 110.

If the proposed undertaking will damage significant archeological sites eligible for the National Register, data recovery (i.e., excavations) may be used to mitigate the adverse impact. An alternative to data recovery is redesign of the proposed undertaking to avoid significant archeological sites. The reduction over time in the number of data recovery projects reported by agencies may indicate that proposal alteration to avoid significant sites has become a more frequent outcome when archeological studies are well-integrated into project planning (Table 4).

Site identification and evaluation activities usually start with background research, which includes a review of site files, archival records, and studies already conducted in or near the proposed project area. If background research indicates a need, field studies are carried out to identify and evaluate sites. In many cases, background research rules out the need for subsequent field studies, for example, because an area has already been evaluated. This fact underscores the importance of being able to find and use data and reports of past work easily and quickly, a topic discussed in more detail in Chapter 4. Effective, efficient access to information from earlier investigations is one means of avoiding unnecessary duplication of effort.

Issuing Archeological Permits and Monitoring Permitted Activities

Federal land managing agencies issue permits for archeological investigations on the lands that they manage. Much of the archeological activity that agencies undertake, fund, or require of permittees is directed towards the identification, evaluation, and documentation of archeological sites. Each Federal land managing agency must ensure that the proposed activities on its lands are carried out in compliance with applicable laws, and especially that requirements for professional standards, consultation requirements, reporting and curation are met. Fines and sanctions can be levied against permit holders who do not adhere to the conditions of the permit.

Land managing agencies reported issuing 6,355 permits for archeological investigations between 2004 and 2007 (Figure 2 and Table 4). The number of permits issued for archeological investigations has increased since 1985 when about 800 permits were reported. Since 1998, the number of archeological permits issued annually has consistently topped 1,000 (Table 4). The use of Federal lands, and the pressure on archeological resources, is increasing.

One explanation for the increased number of permits is modern development or resource extraction activities on Federal land. Such activities may be for mineral, oil, or gas exploration or extraction; transmission or pipeline construction; or other actions. Permits for scientific investigations, on the other hand, account for a comparatively small percentage of the permits issued. The pattern is consistent with the findings of the National Trust for Historic Preservation studies (2006, 2008) that showed increases in the public use

Table 4. Land managing agencies, archeological resource management activities, 1985-2007, showing that the number of overviews and record searches increased over time as the number of data recovery projects decreased.

Year	Permits Issued[1]	Overviews and Record Searches[2]	Field Studies[3]	Acres Inventoried	Sites Identified	Data Recovery Projects[4]	Emergency Data Recovery Projects	Sites Eligible for the National Register	Sites Conserved/ Protected[5]	Tribal Notifications
1985	799	8,162	14,059	2,757,593	26,806	1,037	42	8,181	67,105	162
1986	822	11,654	15,743	3,270,431	30,425	717	103	3,612	No Data	761
1987	1,084	15,494	15,008	3,153,636	24,009	907	89	4,414	No Data	411
1988	1,061	18,623	14,773	2,311,803	24,195	747	133	No Data	No Data	592
1989	746	17,581	11,244	934,073[6]	17,903	760	186	No Data	No Data	399
1990	979	22,118	14,339	941,861[6]	17,350	917	81	No Data	No Data	781
1991	628	19,176	20,093	3,398,657	35,492	574	104	No Data	No Data	455
1992	663	19,977	18,413	4,597,587	35,036	857	172	No Data	No Data	451
1993	919	21,392	13,733	1,795,180	31,670	575	No Data	No Data	No Data	683
1994	1,166	21,911	17,039	3,509,082	45,128	723	67	No Data	No Data	728
1995	983	22,716	11,355	3,474,422	34,921	1,045	79	No Data	No Data	1,068
1996	1,004	22,706	18,905	3,133,810	31,435	1,179	82	No Data	No Data	1,570
1997	881	24,899	17,293	2,925,901	34,381	1,391	112	No Data	No Data	780
1998[8]	1,388	35,435	18,095	2,386,033	45,065	962	124	7,260	11,271	2,347
1999[8]	1,047	155,946[7]	13,201	2,096,304	22,835	499	59	6,437	12,308	1,107
2000[8]	1,007	37,237	14,465	2,595,130	27,771	522	121	7,440	15,509	2,087
2001[8]	1,043	24,547	15,204	2,131,729	32,754	598	35	7,034	18,440	1,557
2002[8]	1,630	42,823	19,696	2,441,380	25,671	755	90	9,626	14,157	3,547
2003[8]	2,294	47,984	23,103	3,441,565	25,171	617	94	11,183	14,005	2,641
2004	1,943	47,439	30,066	2,102,271	29,238	588	67	7,064	12,962	2,223
2005	1,670	49,024	21,704	2,280,436	27,130	465	272	8,480	12,331	1,715
2006	1,355	45,685	20,030	2,044,446	26,640	403	104	6,543	13,758	1,319
2007	1,387	28,077[9]	14,203	2,664,058	31,701	280	62	8,311	12,821	1,382
Grand Total	26,499	760,606	391,764	60,387,388	682,727	17,118	2,278	95,585	204,667	28,766
2004-2007	6,355	170,225	86,003	9,091,211	114,709	1,736	505	30,398	51,872	6,639

Notes

[1] Permits for Archeological Investigations.

[2] Archeological database and file searches, literature reviews, or map checks generally undertaken as initial review of development or planning projects, includes also wide area overviews and general management plans completed or updated under ARPA and NHPA (e.g. integrated cultural resource management plans, forest overviews, preservation plans, historic context statements, archeological resource protection stewardship plans, etc).

[3] Field studies to identify and evaluate archeological sites in a project area, for example, reconnaissance, archeological survey, aerial survey, resistivity survey, etc.

[4] Excavation projects.

[5] Archeological sites that were stabilized, rehabilitated, monitored, or protected (e.g. anti-vandalism signs, fences, or road closures) during this reporting year.

[6] Correlated with a small number of data-contributing agencies (Figure 1), and absence of U.S.Forest Service data.

[7] Federal Aviation Administration reported 130,000 file checks and overviews in 1999.

[8] 1998-2004 data reported here reflect additions and improvements subsequent to the completion of 1998-2003 Secretary's Report to Congress on the Federal Archeology Program text and tables (October 2008).

[9] Army Corps of Engineers, which reported 13,781 overview and record searches in 2006, did not report on these activities in 2007.

of BLM and USFS lands for recreation and for energy development activities.

Given that American energy independence is a long-term goal of the Federal government, the rate of exploration for energy sources or use of public lands for renewable energy projects, such as wind farms and solar panel arrays, will increase the number of archeological investigations and associated activities in compliance with NHPA Section 106.

Energy activities will trigger Federal law such that Federal agencies will be required to issue increasing numbers of permits at a level of activity for which they do not have sufficient staff. Archeological work ahead of energy development means an increased workload for Federal archeologists, who may do the work themselves or oversee work done by others. Duties during oversight include monitoring permitted archeological investigations, reviewing reports, and ensuing that collections created under the permit are properly curated. The additional workload is currently executed without any increase in Federal archeological staff (see Chapter 7). Existing staff will be unable maintain the pace of monitoring without lapses in other types of responsibilities. As a result, greater numbers of archeological resources will be placed at risk.

Consultation for Agency Undertakings and Archeological Projects

As discussed in Chapter 2, Federal agency managers are responsible for contacting Indian tribes whenever a proposed undertaking might impact a property of religious or cultural importance to the tribe. The notification is intended to initiate constructive consultations between the agency and tribal representatives.

Land managing agencies reported 6,639 contacts with tribes between 2004 and 2007 (Figure 2 and Table 4). Regulatory and development agencies conduct consultations but are not solicited for information about frequency of contact for this report. Contact with tribes has increased substantially since 1985, when 162 tribal notifications were reported. Since 1998, the annual number has exceeded 1,000 each year. The increased amount of consultation between Federal agencies and Indian tribes reflects the passage of NAGPRA in 1990, amendments to the NHPA in 1992, and promulgation of 36 CFR 800 regulations in 2000.

Consultation between tribes and Federal agencies provide greater opportunities for tribes to take a more active role in consultations about Federal undertakings. It, as a result, has the benefit of leading to more effective stewardship. On the other hand, the

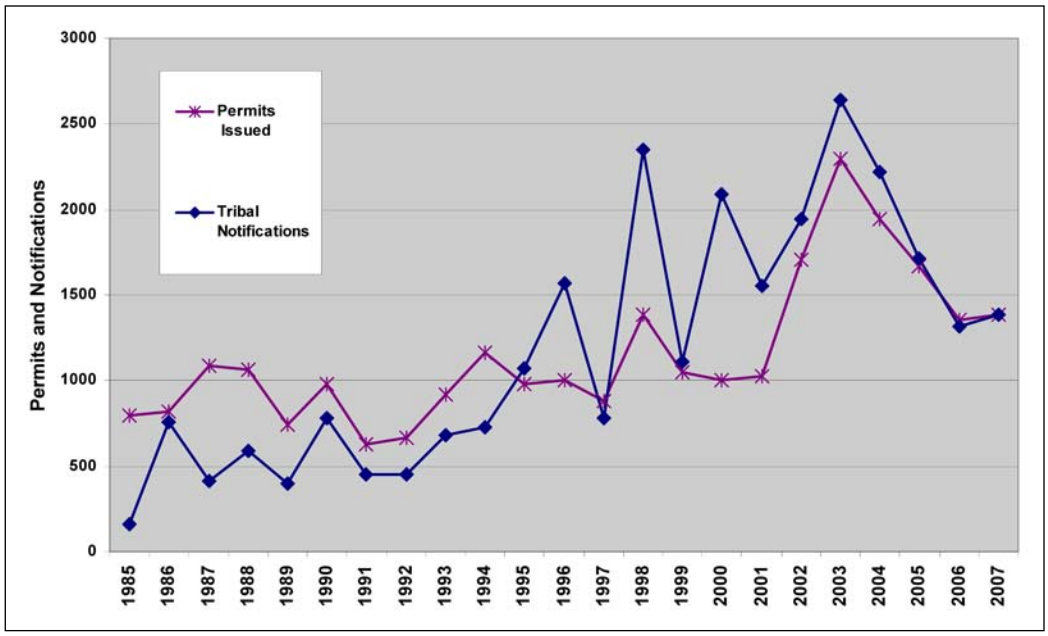

Figure 2. Permits and tribal notifications for land managing agencies, 1985-2007.

The NPS published guidance online about permitting in 2007. www.nps.gov/archeology/npsGuide/permits/index.htm

increased consultation activity over the last two decades contributes to the increased workload for agency archeologists.

Patterns in Reported Archeological Investigations

Land managing agencies have a process to reduce duplication of effort and increase the cost effectiveness of archeological investigations. The process begins with a search for records or files, such as permits or reports, of previous investigations. If insufficient or no information is available, field studies may be conducted to survey land for possible archeological resources. In the case that a field study identifies significant archeological resources, data recovery may be done to mitigate the impacts of an undertaking on the resource. Over time, and particularly during the 2004-2007 reporting period, the Federal Archeology Program has identified trends.

Between 2004 and 2007, land managing agencies reported conducting an estimated 170,225 record searches related to archeological projects. The number of projects requiring record searches has always been substantial, usually above 15,000 per year for the first decade of reporting. Between 2002 and 2006, the number of these kinds of background searches jumped to a reported over 40,000 each year (Table 4 and Figure 3).

Regulatory and development agencies reported even larger numbers. Between 1999 and 2000, the reported number of record searches jumped from 5,211 to 32,758. They reported nearly 90,000 records searches each year between 2004 and 2007, for a total of 353,850 file searches, with disproportionately large numbers for 2005 and 2006 (Table 5). Part of the increase is explained by more complete reporting from the Natural Resources Conservation Service in 2005.

Land managing agencies reported that 86,003 field studies were carried out between 2004 and 2007, an average of 21,500 per year (Table 4 and Figure 3). The highest number of field studies for the entire reporting history, 30,066 reported studies, occurred in 2004. Regulatory and development agencies reported that 135,642 field studies were carried out for undertakings in which they were involved, an average of 33,910 per year (Table 5).

Federal agencies' reporting demonstrates that the relationship between record searches and field studies has changed over time. Land managing agencies reported that more field studies were undertaken than

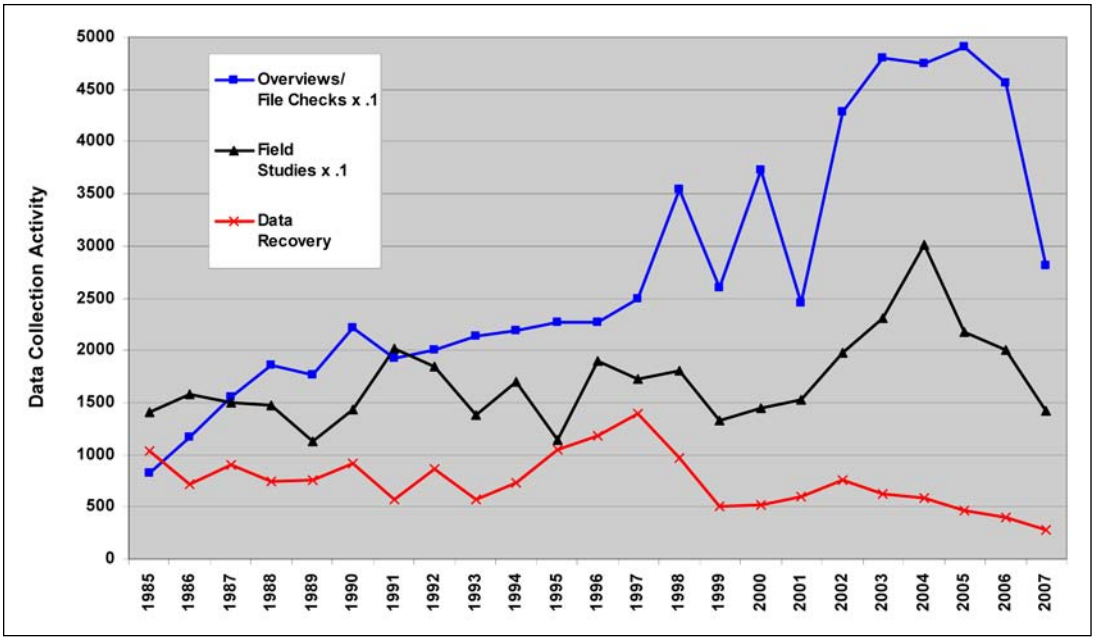

Figure 3. Archeological data collecting activities by land managing agencies, 1985-2007. (130,000 file checks reported by FAA in 1999 not included here.)

Table 5. Regulatory and development agencies' archeological resource management activities, 1985-2007, showing that archeological activities promoted by these agencies increased over time.

Year	Overviews and Record Searches[1]	Field Studies[2]	Acres Inventoried[3]	Sites Identified[4]	Data Recovery Projects[5]	Emergency Data Recovery Projects
1985	919	687	810,475	764	74	3
1986	8,569	4,519	3,534,332	5,333	269	34
1987	2,701	907	2,413,358	1,185	174	51
1988	5,027	860	955,609	799	204	10
1989	4,530	1,397	1,938,284	570	151	18
1990	4,498	1,340	836,161	1,292	91	13
1991	2,856	1,018	41,957	675	46	7
1992	2,883	1,081	37,892	635	51	12
1993	3,686	1,228	395,889	3,535	68	0
1994	10,035[10]	2,407	233,111	4,602	63	21
1995	5,357	3,822	104,029	1,456	28	9
1996	5,692	4,860	542,156	2,694	32	11
1997	8,817	5,883	1,614,702	1,269	6,020[6]	8
1998	6,173	1,494	83,986	2,242	24	7
1999	5,211	1,119	48,991	1,404	32	3
2000	32,757	25,472	884,477	3,729	16	5
2001	41,368	28,634	3,848,845	3,247	28[7]	1
2002	47,446	30,566	990,095	3,127	52	12
2003	41,409	21,077	1,204,816	3,189	35	16
2004	31,266	24,111	696,440	3,416	460	37
2005	114,787	37,040	3,397,814	3,479	1,483[8]	18
2006	146,644	37,626	1,982,135	4,746	1,572[9]	12
2007	61,408	36,350	1,500,506	4,930	126	29
Grand Total	594,039	273,498	28,096,060	58,318	11,099	337
2004-2007	354,850	135,642	7,576,895	18,032	3,641	96

Notes

[1] Archeological database and file searches, literature reviews, or map checks generally undertaken as initial review of development or planning projects.

[2] Field studies to identify and evaluate archeological sites in a project area, for example, reconnaissance, archeological survey, aerial survey, resistivity survey, etc.

[3] Underwater acreage surveyed by remote sensing reported by DOI Minerals Management Service (MMS) summing 34,085,560 acres not included here.

[4] Submerged sites identified through remote sensing reported by MMS summing 89 sites not included here.

[5] Excavation projects.

[6] Natural Resources Conservation Service (NRCS) reported 6,003 data recovery projects.

[7] 1998-2004 data reported here reflect additions and improvements subsequent to the completion of 1 1998-2003 Secretary's Report to Congress on the Federal Archeology Program text and tables (October 2008).

[8] NRCS reported 1,468 data recovery projects.

[9] NRCS reported 1,516 data recovery projects.

[10] Farmers Home Administration reported 8,000 file checks and overviews.

archival research and file checks between 1985 and 1987 (Figure 3). Field studies equaled or were somewhat fewer than the number of record searches between 1988 and 1992. After 1992, however, the number of field studies remained relatively stable, while the number of file checks increased. Land managing agencies have consistently reported more than twice as many record searches as field studies since then.

The data suggest that Federal archeologists are more involved from the very beginning of projects than ever before, but also that existing site location maps, reports of past investigations and archival records make new field studies unnecessary in about half of the cases. Access to records and reports of previous research contributes to efficient and effective archeological review during project planning. Thousands of new archeological reports and other data and records are produced annually as part of the planning or impact mitigation for Federal undertakings. In order to make effective and efficient use of this information, improvements in access and use of digital reports, data, and records are needed. This topic is discussed in the next chapter.

Data recovery projects mitigate adverse effects when significant archeological resources have been identified and will be damaged or destroyed by a federally funded, licensed, or authorized undertaking. Scientific archeological data recovery includes detailed recordation of the three dimensional location of material remains, soil characteristics, and proximity to other objects and features. These data and other observations provide the physical context for the material remains, and are essential to analysis and assessment.

Between 2004 and 2007, land managing agencies reported 1,736 data recovery projects on Federal lands, an average of 434 projects per year (Figure 3 and Table 4). Regulatory and development agencies reported 3,641 data recovery projects, an average of 910 each year (Table 5). Comparison to the mid-1980s, however, demonstrates a major shift. Agencies reported 1,037 data recovery projects in 1985; they reported 280 projects in 2007. Between 1985 and 1987, agencies reported from 13.5 to 21.9 field projects for each data recovery project reported. In 2007, the number of field studies for each data recovery project had increased to 50-to-1 for land managing agencies and 37-to-1 for development and regulatory agencies.

These numbers suggest that data recovery was a relatively more common way to mitigate adverse impacts to archeological sites in the 1980s than in early 2000. Currently, Federal agencies appear to prefer to redirect projects, meaning that they avoid adverse impacts to sites by altering a project to accommodate the resources. In these circumstances, no data recovery projects are needed due to the preservation of sites in place.

Accelerating and Focusing Identification, Evaluation, and Documentation

Federal land managing agencies are responsible for archeological sites on a third of the land mass of the United States. Between 2004 and 2007, the agencies reported field investigations to identify archeological sites on 19.9 million acres (Table 4). The agencies identified 114,709 sites, an average of one site for every 179 acres of surveyed land. Finds included archeological resources from Paleoindian hunting camps to early 20th-century mining equipment. Even so, land managing agencies have surveyed only about 8 percent of the approximately 720 million acres of Federal land in the United States for archeological resources.

Archeological identification and evaluation is frequently undertaken as part of planning for a project such as a road, a water control facility, a mining operation, or for energy development. Other threats are more widespread and unrelated to spatially fixed development actions. For example, regions threatened with erosion or increased wild-land fire frequency due to climate change effects require archeological survey to identify, and then treat, significant sites. Priorities must be set concerning which sites in threatened zones to investigate and document before uncontrollable forces destroy them.

Archeological sites along America's coasts from the Atlantic and the Gulf to the Pacific and the Arctic have faced damage for decades from storm surges and gradually rising sea levels. In regions where people historically lived in close proximity to the ocean, erosion has a devastating effect on archeological resources. Emergency excavations at Cape Cod National Seashore in 1990-1992 recovered data from eroding portions of the 2,500 year old Carns site at Coast Guard Beach (Bradley 2005). The rate of erosion is increasing rapidly in some areas. The United States Geological Survey (USGS 2009) found that the rate of coastal erosion along a 40-mile stretch of the Beaufort Sea on Alaska's

A trypot discovered by NOAA archaeologists at the unidentified whaling shipwreck at French Frigate Shoals, NW Hawaiian Islands. Photo by Tane Casserley. (NOAA)

northern coast doubled to 45 feet per year during the period 2002-2007. USGS and other agencies anticipate that the east coast of the United States will experience a sea level rise of 24-28 inches over the next century (Fahrenthold 2009), which will further impact archeological sites through erosion.

Over 200 years will be required to complete the archeological survey of Federal lands at the present rate using current methods, procedures, and techniques. Unfortunately, Federal agencies are running out of time. Unknown numbers of archeological resources face damage or destruction due to development and climate change. Federal agencies must take advantage of technology and tools to survey sites and conduct data recovery when necessary.

Modeling climate change effects will help Federal agency archeologists to predict vulnerable sites and prioritize documentation. It also benefits the public by lowering costs through avoiding sites or mitigating impacts to them in areas likely to contain a high density of archeological resources. Scientific information and predictions concerning change, such as the relationships between lake and river levels and erosion patterns, can be used to identify zones where archeological sites are especially threatened. Federal archeologists should focus new inventory and evaluation programs in areas of risk to take advantage of research in other disciplines to understand better the anticipated environmental effects and rates of change.

In large scale archeological survey efforts, agencies should make use of remote and near sensing technology to identify and delimit archeological sites. Such "high tech" methods and techniques are successful for the detection of sites with certain structural characteristics. Under favorable circumstances, their use can reduce costs. Predictive modeling methods also can be effective

and efficient in certain environments for delimiting areas where sites are unlikely to be found. Effective and efficient use of technology is consistent with the 2006 Preserve America Summit recommendation that advocated for development and use of innovative technology applications in historic preservation planning and treatment (ACHP 2007:13).

Agencies across the Federal government are planning and seeking funds to investigate and adapt to the expected effects of climate change. The proposed DOI FY 2010 budget requests $80 million for climate impacts science, monitoring, and adaptation (DOI 2009:DH-33-43). The proposed FY 2010 budget includes plans to study, develop adaptations for, and counter the causes of climate change. All the efforts described in the otherwise admirable plan focus on natural resources, such as anticipated altered vegetation patterns and distribution of wildlife (DOI 2009). Little effort to date addresses archeological resources or other kinds of cultural resources, nor have agency archeologists been at the table. The identification, documentation, and preservation of significant threatened archeological sites must be added to agency programs that address the challenges of climate change.

Conclusion

Federal archeologists work to identify, evaluate, document, and mitigate archeological sites as part of the NHPA Section 106 and Section 110 mandates. Most land managing agencies, however, do not have adequate staff or funds to meet the challenges raised by the development of modern infrastructure or resource extraction, or climate change. Agencies should develop plans and implement programs that inventory and evaluate the significance and vulnerability of sites in environmentally threatened zones. No new legal authorization is needed, as requirements for such programs and plans already exist in Section 14 of ARPA (16 U.S.C. 470mm) and Section 110 of NHPA. Inventory programs should study agency lands comprehensively and identify portions that are, or are soon likely to be, threatened by the effects of climate change, energy development and other factors. New investigations should focus on areas of widespread threats whenever possible.

Recommendation

Recommendation 1: To prevent the loss of information and heritage values that archeological resources contain, more funding and personnel should be directed to ongoing efforts to identify, evaluate, and document these resources so as to avoid or mitigate adverse effects on significant and vulnerable sites. Because climate change and development are actively destroying archeological resources, we recommend that these efforts be accelerated.

Chapter 4

ARCHEOLOGICAL COLLECTIONS AND DATA PRESERVATION AND ACCESS

Archeological collections contribute irreplaceable, unique evidence towards a comprehensive picture of Americans' cultural heritage. No other entity is responsible for as much primary information about the archeological record of the country as the Federal government.

Federal agencies curate archeological collections pursuant to the Antiquities Act, the Archeological and Historic Preservation Act (AHPA), the Archaeological Resources Protection Act (ARPA), the National Environmental Policy Act (NEPA), and the National Historic Preservation Act (NHPA). The standards and guidelines for curation are described in "Curation of Federally-Owned and Administered Archeological Collections" (36 CFR 79). They ensure the long-term preservation of and access to collections for educational, cultural, religious and scientific uses. Archeological collections have three primary components: (1) the artifacts and other material remains recovered as part of archeological fieldwork, (2) the records associated with investigations, such as field and analysis notes and records, photographs, and computer data files, and (3) the reports that result from synthesis and interpretation of the analysis and field data. The following sections describe activities related to archeological collections for the 2004-2007 reporting period.

Caring for Archeological Collections

Federally owned and administered archeological collections were first created in the 1800s with the establishment of the Smithsonian Institution and special Federal land reserves and national parks. Beginning in 1906, the Antiquities Act asserted Federal ownership of archeological material from Federal lands, and required the public interpretation and preservation of collections that result from archeological investigations permitted under its provisions. Federally funded employment programs involving archeological excavations during the New Deal in the 1930s and salvage archeology ahead of large scale Federal projects in the late 1940s-1970s produced sizable collections. Many of these collections, however, have not been properly curated. The most substantial and widespread increase in Federal archeological collections is due to archeological projects that began in the late 1960s and 1970s and continue today.

Archeological collections have been generated by compliance with AHPA, NEPA, and NHPA. Those held and managed by Federal agencies total almost 46 million artifacts, plus over 100,000 cubic feet of material for which counts of individual artifacts are not available (Table 6).

Curatorial Facilities and Fees

Large land managing agencies, such as the Bureau of Reclamation (BOR), National Park Service (NPS) and the Bureau of Land Management (BLM), care for about half of their archeological collections in agency repositories (Childs and Kagan 2008:1-2, Sullivan and Childs 2003:5-21). Most agencies curate archeological collections in non-federal repositories, such as state museums or public university museums.

Each archeological project conducted in the course of compliance has the potential to expand a Federal agency's curatorial responsibilities. For instance, the Bureau of Reclamation (BOR) undertook the Animas-La Plata Project in southwestern Colorado in 2007 as Section 106 compliance for a water project. Archeologists found 72 pit structures and hundreds of features, as well as approximately 100,000 ceramic artifacts, 30,000 flaked stone artifacts, thousands of pollen and archeobotanical samples, tree ring samples, and soil samples.

Federal agencies own and are responsible for material remains and records, no matter where they are curated. Most Federal agencies do not manage repositories because it is more cost-efficient to curate collections in nonfederal repositories. Nonfederal repositories have their own dedicated, professional staff and procedures to care for collections and provide public use as appropriate. For example, the Kansas City District of the Army Corps of Engineers (ACE) funded the first year of a five-year project to rehabilitate its large collections located at the University of Missouri-Columbia in 2007. Approximately 20 percent of the collection was stored in a substandard manner. The rehabilitation project will bring all of these collections to Federal standards and ensure their preservation for the foreseeable future (DOD 2008).

Federal agencies, however, are having greater difficulty in locating curation facilities that meet the standards of 36 CFR 79, be they Federal or nonfederal facilities, to care for new collections. Childs and Kagan (2008) conducted a recent survey of curation fees for archeological collections. Half (13 out of 26) of the university-based repositories represented in the survey had stopped accepting new, non-university archeological collections due to a lack of space (Ibid.:11).

State museums and university repositories increasingly rely on curation fees for Federal archeological collections as state or local budgets shrink. Curation in such places has public benefits, as well, because volunteers or students work with collections under professional supervision to gain experience or conduct research. On the other hand, curation costs and more complete understanding by repository managers of the full costs of curation have caused both an increase in the repositories charging fees and the amounts and kinds of fees charged (Childs and Kagan 2008:11-12). Federal agencies pay fees or devise other means of substantive assistance to the nonfederal repositories so partners can support Federal agencies' responsibilities to care for and make accessible their collections.

Cataloging Collections

Federal agencies reported in 2007 that only about 65 percent of the material remains in the collections they own and administer are cataloged. Accessioning and cataloging material remains are primary curatorial activities that ensure long-term preservation and access. Catalog records are essential for accountability and planning; to enable access and use of objects and records for research, public education, interpretation and heritage purposes; and to develop finding aids, validate management decisions, and plan routine maintenance. Sorting, labeling, and organizing are routine parts of cataloging and physical inspection of artifacts often adds information that enhances individual catalog records. Electronic catalog records can be easily and efficiently queried, and help preserve the integrity and enhance the values of the collections.

Intellectual control of collections is necessary for effective curation and complete accountability. Thorough knowledge of all aspects of the collection is needed. Cataloging and verification of collection contents ensures proper care, appropriate access, accountability, and management. Intellectual control includes knowledge of the laws and mandates that affect a collection, parties who may have an interest or responsibility for the collection, and history of the objects comprising the collection.

Federal Archeology Program statistics indicate that Federal agencies have made slow progress in cataloging. More effort is needed to complete this required and essential activity. The full research, management, and interpretive potential of collections can be realized only when cataloging is complete on the collections backlog and new collections are routinely accessioned and cataloged. Collections must be cataloged before they can be available for academic research, resource management, public education, and interpretation.

Collections Accountability

The quality of information about Federal collections has steadily improved over time, thanks to recent emphasis on accountability and the dedication of Federal employees.

BLM submissions for the current Secretary's Report are a good example of improved data quality. From FY1998 to FY2005, BLM only submitted item quantity data on collections in the three BLM curation facilities, but no item quantity data on collections in nonfederal repositories. In FY2005, the BLM started compiling item quantity data on their collections in nonfederal repositories (Palus, pers. comm. 2008).

Improved reporting and accountability shows that the number of reported items in BLM archeological collections almost doubled from 3,874,401 to 6,852,078 from 2004 to 2005 (Table 7). Between 1998 and 2005, BLM reported that 155 non-BLM facilities were thought to hold BLM archeological collections. By 2007, BLM reduced the reported number to 86 nonfederal repositories that were confirmed to hold archeological collections from BLM land. BLM curatorial staff identified repositories that no longer held BLM collections or held only paleontological collections.

Given growing costs of curation and the increased lack of curatorial space to house Federal collections reported by Childs and Kagan (2008), agencies should consider developing standardized procedures to retain

and accession only the most appropriate material remains recovered during fieldwork. Many archeological investigations yield large quantities of highly redundant artifacts, such as fire cracked rock or nails. The development and use of standards for scientifically based field sampling of redundant material remains would assist in reducing the size of new collections that become the responsibility of Federal agencies. Such standards, however, must ensure robust capacity for future scientific research on the material remains.

Long-Term Preservation and Access to Archeological Collections Records

Federal agencies reported in 2007 holding almost 26,000 linear feet of records associated with archeological collections. The records consist of field notes, analysis notes, photographs, maps, unpublished papers, reports, and various sorts of data files. The papers and reports summarize and synthesize research results, and are essential to informed site management decisions.

Table 6. The percentage of cataloged Federal archeological collections reported held by land managing Federal agencies has not changed substantially since 1994.

	Number of Artifacts Curated	Number of Artifacts Cataloged[1]	Percent of Number Cataloged	Cubic Feet of Artifacts Curated[2]	Cubic Feet of Artifacts Cataloged[1]	Percent of Cubic Feet Cataloged	Total Percent Collections Cataloged[4]
1991	3,396,711	2,414,410	71	45,929	212	1	36
1992	3,358,579	191,584	6	34,601	169	1	3
1993	3,231,453	30,311	1	45,374	24,952	55	28
1994	33,091,112[3]	17,165,054	52	77,904	56,991	73	63
1995	33,509,054	17,162,670	51	99,572	74,347	75	63
1996	30,970,271	15,788,583	51	178,132	136,571	77	64
1997	30,009,632	16,513,597	55	181,644	133,881	74	64
1998	45,728,104	23,406,863	51	184,829	134,374	73	62
1999	46,355,976	26,474,912	57	141,919	96,729	68	63
2000	47,499,553	28,356,437	60	167,564	118,394	71	65
2001	43,122,176	27,789,394	64	99,972	54,301	54	59
2002	14,598,255	4,935,899	34	185,216	113,886	61	48
2003	52,922,026	33,677,791	64	197,700	115,992	59	61
2004	41,296,988	23,485,616	57	159,022	104,821	66	61
2005	47,799,693	28,635,880	60	239,857	110,329	46	53
2006	41,785,257	25,919,256	62	251,412	116,207	46	54
2007	45,937,076	30,453,764	66	103,236	59,665	58	62

Notes
Variability in artifact counts over time reflect the number of agencies reporting and transfers of collections.
[1] These numbers are calculated from the percentage cataloged that is reported by each agency.
[2] Earlier reports to Congress did not distinguish between number of artifacts curated and cubic feet of artifacts curated. This report reports each separately.
[3] First year of artifact data submission by National Park Service, which consistently reported thereafter.
[4] Percentage equals summed percent of cataloged numbers and cataloged cubic feet, divided by two.

Table 7. Accuracy in reporting of BLM artifact repositories increased between 2004 and 2007.

	FY 2004	FY 2005	FY 2006	FY 2007
Number of Items	3,874,401	6,852,078	7,412,008	7,986,584
Percent Cataloged	67	Unknown	34	42
Number of BLM facilities	3	3	3	3
Number of non-BLM facilities	155	155	99	86

The field notes, photographs, and maps document the location and context of artifacts in the site, and are crucial to analysis and interpretation. Cataloging links the associated records to the material remains. Without the associated information in the records, the context of the objects is lost and the objects are minimally informative for research or public interpretation.

For older collections, associated records are mostly paper documents and photographs on film. More recent trends show a significant rise in the proportion of associated records that are electronic and are stored on computer discs or other media. Digital data have been sent to repositories as part of the collections resulting from an archeological project. Oftentimes, the container for the digital data, such as the CD or DVD, is curated rather than the data. The digital records are accessible only within the repository and if the proper hardware is available to access them. One issue is an incorrect assumption in the archival longevity of digital media. In reality, the plastics often are not archival, and many begin to degrade in less than a decade. We are on the verge of permanently losing significant amounts of the carefully collected data.

The digital records present both an opportunity and a challenge. On the positive side, widespread use of computers and the Internet for communication make sharing of digital data relatively easy. Access, however, requires surmounting initial challenges, such as processing into formats that are easily read by commonly used programs. A related challenge is that developments in both hardware and software proceed rapidly. Periodic and systematic migration of legacy data to new formats is necessary to ensure future accessibility.

Funding for improved access to associated records is another challenge. With some exceptions, collections repositories today curate digital associated records as physical objects. In their recent survey of repository fee structures, Childs and Kagan (2008:10) noted that more repositories recognize that curating associated records involve different requirements than curating objects. They detected a slight increase in the number of repositories that charge higher fees for curation of associated records than for artifact curation. They also report that a few repositories have begun to address the treatment of digital associated records by downloading digital data to a museum server. Preservation issues of data migration as software and hardware changes, accessibility to data, and charging fees for this service are just beginning in the curatorial community.

Action is needed to provide better access to associated records and to ensure that the digital records are preserved for the long term as required by laws and regulations (36 CFR 79.5(b)(5)). Maintaining digital records simply by shelving the storage media (e.g. computer tapes or disks) will not provide for their preservation, much less provide access to the associated records of Federal archeological collections.

Sophisticated electronic search tools are now available to query digital records easily and efficiently and save wear and tear on paper copies. However, a partnership between the archeological and curatorial communities is needed to develop standards and procedures for the responsible production of digital records (e.g., file protocols, metadata) and the responsible curation of digital records (e.g., migration protocols) for the benefit of all.

Public Access to Archeology Reports with Limited Distribution

Millions of dollars, both public and private, have been spent on investigations to collect information about archeological sites on Federal lands and sites affected by Federal projects or undertakings since the New Deal in the 1930s. Hundreds of thousands of reports have resulted from the investigations. Two impediments to accessing reports from previous archeological investigations on Federal lands are: (1) locating report bibliographic citations, and (2) obtaining copies of particular reports. Access to the reports is further limited due to the few copies available, poor information about the existence of reports, and other factors. The accessibility of archeology reports is key for understanding the American past and for archeological resource management, preservation, and protection.

The NPS manages the National Archeological Database (NADB) in cooperation with the Center for Advanced Spatial Technologies (CAST) at the University of Arkansas. NADB provides access to archeological reports, projects and databases to Federal agencies, cultural resource management companies, scholars, students, and interested members of the public

(Canouts 1992; Childs and Kinsey 2004).

One NADB module is NADB-Reports (NADB-R), a database publicly accessible through the Internet that contains bibliographic citations and summary information about unpublished and published archeological reports nationwide (NPS; www.nps.gov/archeology/tools/nadb.htm). NADB-R currently contains over 350,000 citations for reports and publications. The bibliographic records were first created in the 1980s from archeological reports then on file at State Historic Preservation Offices (SHPO) nationwide. Since then, NABD-R has received two major updates and additions of records (Childs and Kinsey 2004). Some 100,000 records were last added to NADB-R in 2004 (Table 8).

NADB-R provides a single point of access to identify archeological investigations in the United States. As discussed in Chapter 2, access to reports and records can help to reduce project costs and staff hours. NADB-R lowers the cost of background research associated with NHPA Section 106 compliance by reducing the search time for bibliographic information about unpublished field reports and reducing the need for field projects in areas where fieldwork was previously done.

The utility of NADB-R as a single source for archeological reports with limited distribution is declining without periodic and systematic updating. A new initiative is needed to update NADB-R by compiling additional report titles and related summary information, but also making digital copies available. Links from NADB-R listings to digital copies of reports would provide instant access to one-of-a-kind, out-of-print, or hard-to-find information. The payoff would be major improvements in efficiency and archeological resource data preservation.

An interagency, public/private partnership effort should develop common procedures and standards for an electronic archive of reports from Federal archeological projects. Most, if not all, reports produced at present and during recent years are in digital formats. With new attention to the problem and additional funding, agencies also can develop programs to scan systematically the backlog of paper reports to help ensure long term preservation and much better access to these legacy data. Specific challenges include:

- compiling digital copies of reports or scanning paper copies to create digital versions;
- providing a stable repository where digital copies can be kept and made accessible through NADB-R; and
- resolving intellectual property issues, since some report authors view the information contained in their reports as proprietary.

Table 8. Citations in NADB-R by year published, 1975-2007, showing a decrease in the number of more recent reports in the database.

Year	Number of Results
1975	5,118
1976	7,806
1977	10,541
1978	11,822
1979	15,093
1980	18,653
1981	19,144
1982	15,201
1983	13,795
1984	16,335
1985	16,280
1986	13,983
1987	13,057
1988	11,783
1989	12,852
1990	14,457
1991	12,969
1992	13,365
1993	11,909
1994	10,954
1995	10,899
1996	11,442
1997	8,085
1998	7,120
1999	6,470
2000	8,030
2001	7,154
2002	4,120
2003	87
2004	0
2005	0
2006	0
2007	0

Another important challenge is safeguarding sensitive information, particularly the location of archeological sites. Standards and guidelines must be developed that balance accessibility to information about archeology on Federal land with the protection of the resources. Archeologists from all sectors, including Federal and other public agencies, private sector consultant firms, academic and museum institutions and tribes, should participate in the development of standards and guidelines to protect sensitive information.

Archeological Data Sharing

The development of the Internet as a tool for information sharing and communication facilitates the transfer of data and texts in digital formats. Formerly, archeologists working on multi-region or multi-time period research questions compared their data with conclusions and interpretations of other archeologists. Now, however, they can control large data sets and compare and analyze original data drawn from multiple regions and time periods. These exciting developments have the potential to increase the value of archeological data from Federal archeological projects through wider utilization by scientists, scholars, and descendent and local communities (Kintigh 2006; Snow et al. 2006). Federal agencies have a number of potential partners with whom to develop efforts to provide better access to archeological information. The Society for American Archaeology (SAA) established a digital data interest group in 2006. The ACHP, NCSHPO, NPS, and other organizations are working on similar issues of information access related more generally to all kinds of historic properties. Two of the "priority action areas" derived from the Preserve America Summit held in 2006, identifying historical properties and promoting innovative technologies, focused attention on the topic (ACHP 2007:10-13). A national inventory of historic property data management systems maintained by SHPOs, THPOs, and Federal agencies has been completed and will serve as a foundation for developing coordination protocols that will benefit the archeological community (Shosky et al. 2009).

Several innovative projects coordinated by individuals and groups from the academic, consulting, and foundation sectors are developing technologies for sharing archeological data. One example is the Chaco Digital Archive, a program of research, digitization, and data sharing through the Internet. The compilation of data, documents, and images undertaken by the Chaco Digital Archive is an illustration of how access to once obscure and rare data can be improved through innovative thinking.

Synthesizing Archeological Data -

The Chaco Digital Archives

Between A.D. 850 and 1250, Chaco Canyon in northwestern New Mexico was a hub of cultural activity. During its height, Native peoples visited Chaco as a center for ceremony, trade, and political administration. There, Native Americans built an intricately planned landscape of massive, multi-storied masonry buildings, roads with carved stairways and masonry ramps, and water control and distribution systems, marked by a notable concentration of petroglyphs, pictographs, and calendrical markings documenting solar, lunar, and stellar events. Engineering and landscaping shaped and reflected Chacoans' view of the world. By A.D. 1300, however, Chaco Canyon, like most of the Four Corners region, was deserted as populations were driven out by long-term drought.

The significance of the extensive pueblo ruins in the canyon was recognized soon after discovery. President Theodore Roosevelt established Chaco Canyon National Monument, '...to preserve the extensive prehistoric communal ruins…of extraordinary interest because of their number and their great size...' In 1980, Congress designated Chaco as a national historical park in the National Park System, and expanded the boundaries and protection mandate to over forty major Chaco sites. The World Heritage Committee of UNESCO designated Chaco Culture, Aztec Ruins, and five sites managed by the BLM as World Heritage Sites in 1987. Throughout this time, prestigious universities and museums, such as the American Museum of Natural History and the Smithsonian Institution, carried out scientific investigations.

Part of the Federal stewardship responsibilities for archeological resources is ensuring that information from research is available for public benefit. Resolution of basic research questions has been hindered by the fact that the pre-1970s fieldwork in the canyon has been inadequately reported. A collaborative effort between the NPS, University of Virginia, and a number of museums, universities, archives, and laboratories, the Chaco Digital Initiative (CDI) integrates and makes available through a website widely dispersed archeological data about Chaco Canyon that was collected in the late 1890s and the first half of the 20th century. Its goal is to ensure that these early archeological research records are preserved and accessible for future generations.

Currently, the materials are housed at numerous repositories around the country, making it difficult to answer even fundamental research questions. The Chaco Digital Initiative is making research and human history more easily available through an online comprehensive digital research archive that contains scanned documents and data tables.

The CDI brings together a vast amount of information and continues to grow. References, field notes, images, maps, and tree ring dates on excavations at five key sites, including Pueblo Bonito and Aztec Ruins, are available for research through a single web portal. The centralization of data about Chaco culture facilitates research on the effects of climate change on human populations, plants, and animals that cross more than a millennium, have helped scientists to understand and predict the effects of present day changes.

Learn more at the Chaco Digital Archive:
www.chacoarchive.org.

North Wall of Pueblo Bonito, Chaco Culture NHP

Cooperating to Manage Archeological Information -

The Federal Highways Administration (FHWA)

The Federal Highway Administration (FHWA) provides funding to state transportation departments for highway and other transportation projects. States that use Federal funding for projects are obligated to comply with Federal laws and to consider the effects of these projects on archeological resources. Section 106 of the NHPA requires that FHWA consider impacts to historic properties and, if impacted, resolve adverse effects to archeological resources.

Because the FHWA is not the project sponsor, does not directly conduct archeological investigations, and does not own or manage the highway rights-of-way (or the archeological resources therein), FHWA does not directly oversee a Federal archeological program. The programs to inventory, evaluate, and conduct data recovery on archeological resources on lands associated with transportation corridors are usually operated or contracted by the states. FHWA is therefore challenged to obtain information about archeological projects carried out by state transportation departments. Beginning in 2007, however, Chief Archeologist Owen Lindauer sent a survey to archeologists in all FHWA Division Offices with a request to obtain survey information that was readily available from their state departments of transportation and thirty-seven responded. These responses form the basis for the 2007 FHWA submission for the Secretary's Report, and provide a picture of archeological activities tied to transportation, whose projects are funded by the agency.

Lindauer notes, "There is tremendous variability in how archeological investigations are done from one state to another. Some states choose not to apply Federal funds to the costs of conducting archeological investigations, and instead exclusively utilize state funding. In other states, it may be difficult to distinguish archeological investigations conducted to support a project that is federally funded as opposed to projects that are exclusively state-funded."

There is also tremendous variability in information management. Of the thirty-seven state transportation departments that responded to Lindauer's survey, six reported that they maintained their own data bases for managing information about archeological activities. Five reported that they had partnered with another state agency or with a university to manage information about archeological resources and activities. Ten states, however, reported that they provided funding to State Historic Preservation Officers (SHPOs) to maintain information about archeological activities related to the state transportation departments.

The Wyoming Department of Transportation (WYDOT) notes, "With four major Federal land managing agencies and literally thousands of Federal undertakings related to energy development, the Wyoming SHPO acts as the clearinghouse for all cultural resource data for the State. This includes both text data and GIS-based information. Under a cooperative agreement between our agencies, the SHPO maintains and serves WYDOT cultural resource data, provides the WYDOT cultural resource specialist with unlimited access to all available data collected for all Federal undertakings in the state, and has been immediately entering WYDOT data into the system."

This partnership is similar to arrangements that BLM state offices make with SHPOs (see the 1998-2003 Secretary's Report to Congress on the Federal Archeology Program for a discussion of this arrangement). The Bureau maintains no databases, but forwards archeological information to the SHPO in each state where the activity took place, and provides funding to the SHPO for information management.

Data management partnerships are an essential component of Federal agencies' archeological stewardship programs. The diverse partnerships that the Federal Highway Administration maintains to care for archeological data are creative and efficient solutions that support the SHPO and benefit both Federal and State agencies.

One application involves climate change. The study of the effects of past episodes of climate change on human populations would benefit from improved access to archeological collections, both material remains and associated archeological records. As environmental scientists investigate past changes in climate, archeological data are unique in their potential to illustrate changes in the behavior of human populations in response to past environmental changes. For example, investigations into the ways that cultures in the American Southwest adjusted to the recorded changes in climate in the 10th through 12th centuries A.D., through migration, social reorganization, economic adjustments, or other means, may provide useful insights as modern human groups make plans to cope with current changes in climate.

Federal agencies are responsible for large collections and associated records, so their participation is crucial to providing more complete access to data for studies, improvement of resource management, and public interpretation programs. Agency involvement also is appropriate because of the requirement, authorized by the Antiquities Act, AHPA, ARPA and NHPA, that agencies make Federal archeological collections available for scientific and educational uses. Data sharing initiatives support Federal agencies' stewardship responsibilities by creating avenues for access that increase the utility and value of archeological resource information and improve management.

Artifacts from Ulysses S Grant National Historic Site. (NPS)

Conclusion

The challenges of long-term preservation and access to archeological collections, data, and reports must be recognized and met. Ready access to archeological information has implications for scientific research, scholarship, and improved resource management. One area of special concern is the effect of energy development and climate change on archeological resources. Opportunities to view objects, review field notes, download reports, and examine maps and photos via electronic means can facilitate consultation with Indian tribes and other descendant and associated communities. Improvement of accessibility to knowledge about the distribution, types, and significance of archeological sites would reduce the amount of time necessary and certain kinds of investigations during project planning. Data preservation and sharing, be it in collections or electronic records of curation and excavation, is essential for Federal archeologists to guarantee accessibility and long-term use of archeological data.

Recommendations

Recommendation 2: In order to guarantee the public benefit of access to archeological collections for research, exhibition and use by descendent groups, archeological collections must be cataloged, curated and appropriately housed by professionally trained staff. Funding and personnel are needed to complete cataloging and curation of Federal archeological collections to ensure their long term preservation and accessibility.

Recommendation 3: In order to ensure public access to archeological data now and in the future, digital data standards and practices for preservation of records associated with archeological investigations must be developed and utilized, as is being done in other preservation fields.

Chapter 5

SUPPORTING PUBLIC ARCHEOLOGY OUTREACH

One direct way that the Federal Archeology Program demonstrates that archeology has public benefits is through educational and outreach programs. Public interest in archeological resources and concern for their welfare both supports Federal archeology and creates the expectation that Federal agencies will provide opportunities to extend public benefits of archeology to a broad constituency. The return is considerable: Americans learn more about themselves and the history of the nation while gaining a preservation ethic in support for archeological resources.

Americans want more opportunities to visit and experience archeology, more archeology in school curricula, and they support the improvement of measures to protect archeological resources. Perhaps most importantly, they believe archeology is personally significant (Ramos and Dugan 2000). Federal agencies promote and undertake many archeological outreach activities that provide direct public benefits. Examples include:

- classroom materials for elementary and high schools that use archeological concepts and examples as pedagogical tools to engage students in learning chemistry, geometry, geography, history and other subjects;
- community involvement and civic engagement about contemporary issues using archeological examples and archeologically informed interpretations to increase tolerance of diversity and multiple perspectives;
- public service through citizen programs to protect archeological resources and promote preservation and resource stewardship; and
- heritage tourism programs with authentic and desirable visitor experiences in support of local community economies.

Public outreach helps Federal agencies, as well. Site steward and other volunteer programs help agencies with preservation and protection of sites, monitoring of site conditions, and reporting of signs of damage or looting. In a period of shrinking Federal budgets, the assistance provided by volunteers in documenting archeological sites and caring for archeological collections is invaluable.

Public Education and Outreach by Federal Agencies

Congress first linked archeology and education in 1906. Section 3 of the Antiquities Act articulates the objective of archeological investigations on public lands as "increasing…knowledge." The Act also stipulated that the collections be available in public museums. Another Congress, in 1988, made the connection between archeology and education even more explicit. Amendments to the Archaeological Resources Protection Act (ARPA) required that "each Federal land manager shall establish a program to increase public awareness of the significance of archaeological resources on public lands and Indian lands and the need to protect such resources" (16 U.S.C. 470ii(c)). The combination of education and stewardship drives archeological outreach by the Federal Archeology Program.

Civic Engagement

Civic engagement is an effort by Federal agencies to involve the public in a lasting way in decisions about archeological resources and encourage interest in the archeological past. The Federal Archeology Program carries out civic engagement initiatives in a variety of ways, including community involvement in archeological projects; input on interpretative programs at parks, forests, districts, and military bases; volunteer participation programs; and public meetings ahead of management planning.

During the reporting period, one example of civic engagement took place at Independence National Historical Park in Philadelphia. The local African American community participated in ceremonies and public programs surrounding the excavation of the President's House and the nearby Dexter House. Archeology at the President's House yielded new information about the relationships between George Washington and the household staff that he enslaved. Finds at the Dexter House site provided details about the community and lifeways of urban African Americans in the early American republic (Levin 2009). The NPS met with the community to explain its policies and to consult on interpretation. The decision to excavate the Dexter site, rather than preserve it in place, derived in

Hopi Day School Grade 4 (Kykostmovi, AZ - on the Hopi Indian Reservation), Petrified Forest National Park, 2005

part from engaging with the community (Little and Amdur-Clark 2008). Including local communities in the decision-making process is a form of civic engagement that creates greater local investment in Federal archeology.

Civic engagement provides a structure for Federal agencies to avoid impacts to Native communities that might result from undertakings. Federal agencies are careful not to make policy decisions that would impact associations with archeological sites that hold special commemorative value. Some sites may be associated with traditional histories of creation, others with special events or journeys described in oral histories. Archeologists and Native communities work cooperatively to enhance the investigation and interpretation of archeological sites (e.g., the articles in Dongoske et al. 2000; Kerber 2006).

In northern Alaska, a collaborative project included NPS archeologists from Gates of the Arctic National Park and Preserve, the University of Alaska Museum, and Nunamiut Eskimos from the North Slope Borough (Rasic 2005). The research involved site visits to historic Nunamiut camps from one of the last mobile hunting, fishing, and gathering lifestyles in North America. Archeologists documented physical aspects of the ethnohistoric sites and interviewed Nunamiut elders from the Anaktuvuk Pass community, who were among the last individuals to occupy the sites. The elders shared stories and information about their lives. The collaboration resulted in an invaluable record of the sites and their traditional use.

Civic engagement involves members of the public in decision-making processes concerning the resources representing their heritage. Although Federal agencies must comply with the laws and mandates surrounding archeological resources, civic engagement is a means to build relationships with invested groups by asking for input on projects. The result is improved working relationship with the American public and increased support for the Federal Archeology Program.

Archeology in School Curricula

One public benefit of Federal archeology is the information it provides to school curricula at all levels. Archeology teaches students about logic, critical thinking, and problem solving. It can also facilitate conversation about topics such as diversity and culture

Excavation in a National Park -

The President's House in Independence NHP

In March 2007, Independence NHP launched archeological excavations at the site of the house used by Presidents Washington and Adams from 1790-1800, when the capitol of the young United States was in Philadelphia. Adams housed a small family and staff, but Washington's household included members of his own family, his personal staff and their families, fifteen European American servants, and at least nine enslaved African Americans.

Archeology was not part of the park's plan for the site. The local African American community, however, successfully argued that it was an important place to excavate. Community members participated in ceremonies, public meetings, and other events over the excavation's course. Their engagement proved critical to learning the African American story of the President's House. Historians, local community activists, the Philadelphia media, and many individual citizens urged that the complete story of the President's House be told, including the stories of Austin, Christopher Sheels, Giles, Hercules, Joe Richardson, Moll, Oney Judge, Paris, and Richmond, the nine slaves the President brought to Philadelphia from his plantation at Mt. Vernon (Levin 2009).

The President's House was demolished in the 1830s, and new buildings and other constructions over the past 200 years have destroyed much of the physical evidence of the structure. Excavations revealed, however, that large portions of the southeast corner wall and the foundation of the south wall of the house were intact and that the house had a basement. The foundations of the large kitchen building that stood behind the main house were also discovered. This was the kitchen where Hercules, Washington's enslaved chef, worked. Two foundation walls marked the location of a previously unknown underground hallway that linked the kitchen to the main house. The passage would have been used almost exclusively by servants and enslaved workers as they went about their daily routine.

Archeological excavations, such as the ones at the President's House, tell us much about people who contributed to our country but who do not figure prominently in public records and documents. Often the poor and enslaved are only known through tax or census records. Archeology provides us with a way to better understand the lives of people at *all* levels of society.

During the four months of active work, more than a quarter of a million people viewed the excavation from a special viewing platform (Levin 2009). Interpretive guides at Independence NHP gave numerous tours, helping visitors to understand the significance of the archeological findings. Sharing this information with the public is a vital part of Federal archeology.

President's House Excavation

change. Federal agencies use in-person and Internet media to bring archeology to classrooms.

One example is Project Archaeology, a non-profit educational organization that receives assistance from BLM. Project Archaeology curricula teach scientific and historical inquiry, cultural understanding, and the importance of protecting cultural heritage. The materials supplement social studies, history, and science classes.

The NPS National Register Program brings archeological sites to the classroom through online Teaching with Historic Places (www.nps.gov/history/nr/twhp/) lesson plans. During the 2004-2007 reporting period, new archeological lesson plans included "At a Crossroads: The King of Prussia Inn," "Johnson Lake Mine: Mining for Treasures in Nevada's Snake Range," "New Philadelphia: A Multiracial Town on the Illinois Frontier," "The Spanish Treasure Fleets of 1715 and 1733: Disasters Strike at Sea," and "Tonto National Monument: Saving a National Treasure." They include guidance for teachers about using the plans, as well as place-based learning opportunities that connect with state and Federal learning standards.

Educational webpages communicate information about archeology to a broad public audience. The NPS Archeology Program website provides information for teachers and students (NPS; www.nps.gov/history/archeology/PUBLIC/teach.htm); it is updated regularly as new resources become available. In 2007, the Archeology Program created an educational site called "For Kids" (www.nps.gov/history/archeology/public/kids/index.htm) to introduce grade school students to archeology. Since its launch, "For Kids" has consistently received the second-highest number of hits on the Archeology Program website.

Public Interpretation Programs

Interpretation communicates archeological finds from Federal lands to the public. It takes raw data and technical analysis to the American people in a way that non-specialist audiences find accessible. Most NPS units, for example, have visitor centers with exhibits, films, and written material about cultural and natural resources in the park unit. Public interpretation products are also found at units operated by the Bureau of Land Management (BLM), Bureau of Reclamation (BOR), Forest Service (USFS), and the Army Corps of Engineers (ACE).

One example is the Anasazi Heritage Center in Cortez, Colorado, a BLM facility that provides public interpretation and is headquarters for Canyons of the Ancients National Monument. The center hosts several exhibits about the archeology of the region. In collaboration with several statewide and local organizations, including the Colorado Historic Fund and the San Juan Mountains Association, the center sponsored a special exhibit, *Archaeology Grows Up: 1906-2006.* The exhibit explored the transformation of archeology from the hand tools used during the era of the 1906 Antiquities Act to the modern computer-assisted study of ancient people.

The NPS added three distance learning courses to its professional skills training curriculum in 2004 and 2006 as part of the Module 440 series, *Effective Interpretation of Archeological Resources.* The courses "Interpretation for Archeologists," "Study Tour of Archeological Interpretation," and "Assessment of Archeology Interpretation" (www.nps.gov/archeology/tools/distlearn.htm) assist archeologists in all sectors with public interpretation methods and techniques. They also provide interpreters with ways to convey archeological resource information to visitors. The courses encourage archeologists and interpreters to work together to provide effective and accurate interpretation to engage the public and to foster a preservation ethic.

Sun Valley Indian School, Grades 5 & 6 (Sun Valley, AZ), Petrified Forest National Park, 2005

Heritage Education: Project Archaeology

Project Archaeology is a national heritage education program founded by the Bureau of Land Management (BLM) for educators and their students. Since the early 1990s, Project Archaeology has worked to develop awareness of our nation's diverse archeological sites, to instill a sense of personal responsibility for stewardship of these sites, and to enhance science literacy and cultural understanding through archeology. The program began in Utah as a statewide project to combat the vandalism and looting of archeological sites and has since expanded to all 50 states.

Project Archaeology curricula are for teachers and students in grades 3 through 8. The curricula show how archeology is used in constructing the past and why it is important to protect archeological sites for the scientific data they contain.

The first activity guide, *Intrigue of the Past: Investigating Archaeology* was first published in 1992-1993.

In 2007 Project Archaeology launched a new activity curriculum, *Investigating Shelter.* It guides students through a complete archeological investigation of shelter (e.g., houses, tents, and other structures that humans build and use) and teaches six target lessons through a series of ten learning and assessment activities. The materials are packaged as a hands-on toolkit or a series of computer lessons.

The curriculum package is composed of high quality educational materials; professional development training for educators; and continuing professional support. The guide is delivered to educators through workshops taught by an educator and an archeologist. The teachers learn how to use the guide, discuss the ethical issues surrounding archeology, learn the perspectives that Native Americans and other ethnic groups have on archeology and the past, and participate in field trips to museums or archeological sites.

Evaluations show that students learned basic archeological concepts such as context and classification, as well as basic scientific methods such as observation and inference. Students also gained in knowledge about the cultures that they studied through archeology (specific subject material is chosen by the teacher from a series of modules). The evaluations also showed that students fully understood the importance of protecting archeological sites and their personal responsibility in archeological stewardship.

Project Archaeology (www.projectarchaeology.org/) operates under a partnership between BLM and Montana State University.

Teachers participate in a Project Archeology activity.

Archeological Heritage Tourism and Sustaining Communities

Archeology enriches communities by focusing energy and enthusiasm on resources associated with their locality. Spinoffs from individual archeological projects have rippled through communities touching public schools, museums, neighborhood actions, street names, and the design of public places. Heritage programs with an archeological component in places such as Baltimore, Maryland; Alexandria, Virginia; Pensacola, Florida; and Tucson, Arizona are a few examples of local programs with community involvement at their core.

Interpretive development and management of archeological and historical places can have important economic benefits for individuals and communities. The State of Arizona, for example, reported that 3.2 million people spent 2.6 billion tourism dollars in Arizona in 2005 (Arizona Humanities Council 2005). Over 1.5 million of the tourists sampled said that their trips were specifically to visit a cultural heritage location or event, including archeological sites and parks. Among those NPS parks were Casa Grande National Monument (NM), Montezuma Castle NM, Canyon de Chelly NM, and Tumacacori NM. Federal archeology thus helps to sustain local communities in Arizona, among other places in the United States.

Virtual tourism using the Internet is another means by which agencies have broadened public awareness and appreciation of archeology and the unique perspective that it offers on the distant and recent past. Examples include the BLM's "Adventures in the Past" (www.blm.gov/wo/st/en/res/Education_in_BLM/Learning_Landscapes/For_Teachers/Heritage_Education.html). The NPS produced a series of travel guides on its "Visit Archeology" (www.nps.gov/archeology/visit/index.htm) webpage. It includes information about visiting in-person or on-line through themes such as African American Archeology, Urban Archeology, and Samuel de Champlain's voyages.

Connecting Archeological Stewardship and Public Service through Volunteering

Volunteer programs devoted to archeological stewardship are a component of the Federal Archeology Program. Volunteers enable agency archeologists to undertake projects or programs that otherwise would be impossible due to lack of staff. In an environment of shrinking resources, volunteers provide valuable assistance in documenting archeological sites and caring for collections. The National Trust for Historic Preservation has suggested that the declining number of volunteer hours spent on archeological projects reported by Federal agencies relates to fewer agency archeologists available to oversee these programs (see Chapter 1).

One way volunteers assist in the protection of archeological resources is through site stewardship programs. Anecdotal evidence suggests that these programs are successful at deterring the looting of sites regularly visited by site stewards. Volunteers assist archeologists in field projects such as survey and site excavation. Working in offices, laboratories, and museum repositories, they are important to the care of archeological collections and data management. Land managing agencies coordinate archeological volunteer programs. The USFS provides information about archeological projects through the Passport in Time (PIT) clearinghouse (www.passportintime.com/). Since its inception as a national program in 1991, more than 14,000 PIT volunteers have contributed over 605 person years of labor to archeological projects. In 2006, the USFS announced that the PIT program would host information about volunteer opportunities from any government agency, college, university, or archeological research firm wishing to include volunteers in archeological or historical research. The BLM also promotes, and helps to organize, archeological stewardship opportunities, in particular a statewide site steward program in New Mexico and another focused on public lands in southwest Colorado.

Between 2004 and 2007, over 1.6 million hours (valued at over $30 million) were contributed by volunteers helping Federal land managing agencies with their archeological responsibilities. Agencies reported that in the past decade for which data have been collected, volunteers have contributed over 4.9 million hours of stewardship service for archeological resources (Table 9). The annual number of hours of service contributed is between 400,000 and 600,000 hours. Reported volunteer service peaked at over 600,000 hours in 1998 and again in 2004 at over 500,000 hours. The decline since 2004, and the sharp fall in the number of volunteer hours reported for 2007 (Table 9), may reflect a decline in the number of Federal agency archeologists available to supervise volunteer related projects.

Table 9. Partnerships and volunteers made valuable contributions to the Federal Archeology Program, 1998-2007.

Year	Number of Partnerships	Partner Contributions[1]	Volunteer Hours	Standard Wage Equivalents
Development and Regulatory				
1998	6	No data	No data	
1999	15	$12,500	No data	
2000	46	$45,000	200	$3,136
2001	61	$285,000	200	$3,254
2002	63	No data	No data	
2003	71	$681,800	No data	
2004	9	$110,000	1,695	$29,747
2005	13	$43,225	1,928	$33,836
2006	190	$130,792	No data	No data
2007	117	$73,000	261	$4,899
Grand Total	591	$1,381,317	4,284	$74,872
2004-2007 Total	329	$357,017	3,884	$68,483
Land Managing				
1998	597	$18,339,471	610,836	$8,893,772
1999	591	$10,424,355	544,318	$8,213,759
2000	665	$13,418,315	526,537	$8,256,100
2001	679	$9,178,792	556,192	$9,049,252
2002	734	$8,115,386	423,973	$7,097,308
2003	740	$12,254,751	475,953	$8,181,632
2004	694	$11,690,237	515,228	$9,042,251
2005	1,128[2]	$12,991,103	479,773	$8,420,016
2006	691	$32,626,089	420,744	$7,590,222
2007	601	$30,429,985	440,461	$8,267,453
Grand Total	7,120	$1,594,684,84	4,994,015	$83,011,765
2004-2007 Total	3,114	$87,737,414	1,856,206	$33,319,942

Notes
[1] Estimated total dollar value of contributions provided by partners, including money, in-kind services, and volunteers working directly for partners during this reporting year.
[2] U.S. Forest Service reported an unprecedented 714 partnerships.

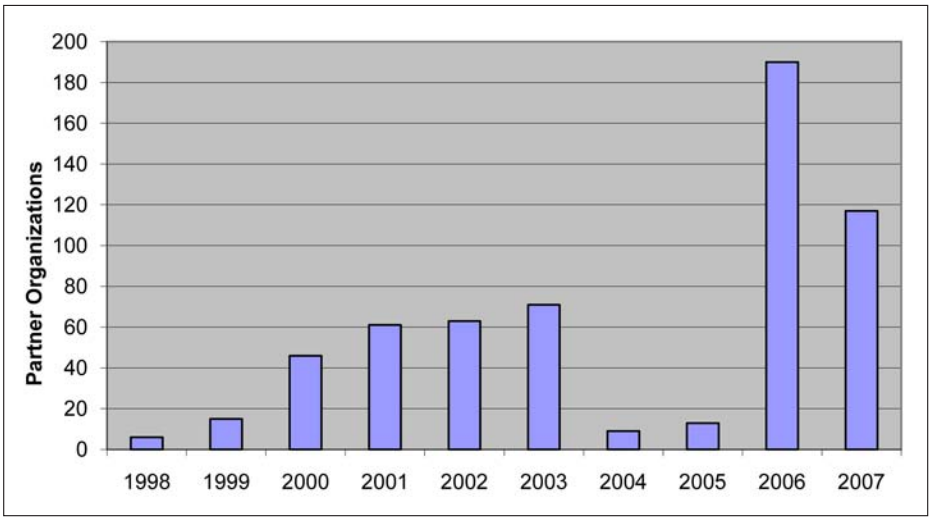

Figure 4. Partnerships held by development and regulatory agencies, 1998-2007.

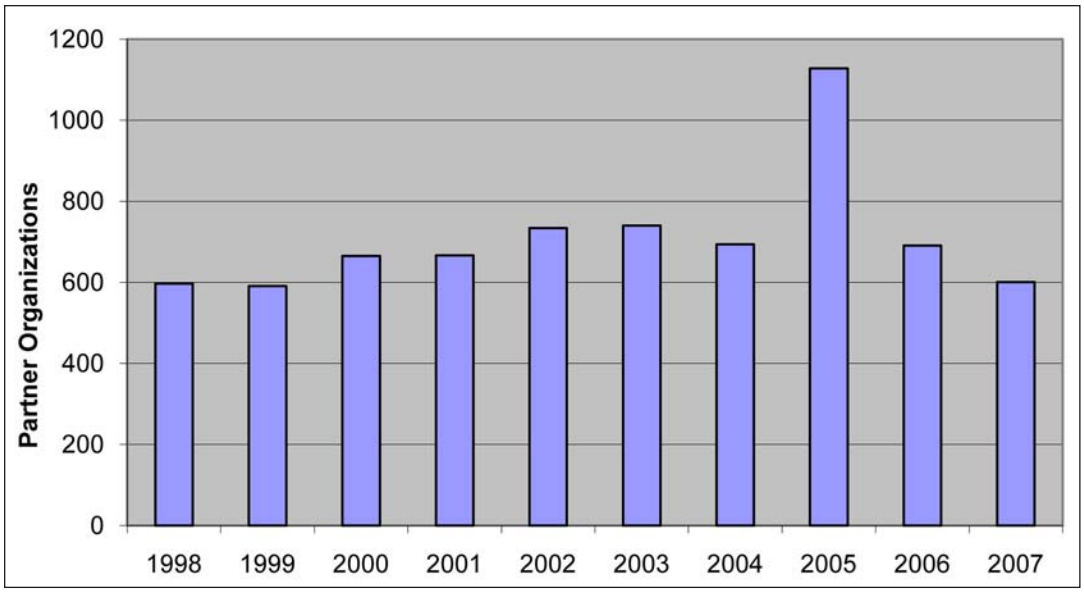

Figure 5. Archeological resource partnerships with land managing Federal agencies, 1998-2007.

Archeological volunteer programs may be the most intensive kind of public outreach. Federal archeological volunteer programs are fertile ground for expansion, if additional personnel are available to oversee activities. With additional professional archeologists, public participation programs that involve excavations or other field studies, curation activities, site stewardship, and other tasks can be expanded.

Public Service and Partnerships

A number of regulatory and development agencies also coordinate partnerships and volunteer programs (Figure 4 and Table 9). A total of 329 partnerships were reported between 2004 and 2007. These partnerships contributed $357,017 and over 3,884 volunteer hours for archeology activities.

Land managing agencies reported a total of 3,114 partnerships for archeological resources between 2004 and 2007 (Figure 5 and Table 9). USFS reported doubling the numbers of partnerships in 2005, accounting for the spike during that year. Partnerships contributed more than 87 million dollars directly or in labor or equipment between 2004 and 2007.

Conclusion

Education and outreach is essential to the development of public support for archeology. The Federal Archeology Program develops and supports initiatives to engage different communities in archeology. Classroom education, public programming, and interpretive materials are all ways to promote civic engagement, develop a stewardship ethic, and recruit partners, volunteers, and future archeologists.

The capacity to sustain archeological programs for volunteers is directly related to the number of archeologists available to oversee projects. Archeological personnel are not only needed to manage project logistics, they are essential for the intensive educational experiences that volunteering can provide. Without an adequate archeological staff, outreach, education, and volunteer programs cannot thrive. Public support of Federal archeology, consequently, erodes as well.

Recommendation

Recommendation 4: In order to strengthen archeological stewardship, Federal agencies should coordinate and train volunteers, and encourage and promote civic engagement by community and descendent groups, and support public education and outreach related to agency archeological activities and projects.

Chapter 6

ARCHEOLOGICAL RESOURCE PROTECTION AND PROSECUTION OF LOOTERS

Looting and vandalism carry a cost that exceeds the monetary value of stolen objects, repair to damaged sites, or the cost of prosecution. More tragic than the loss of the objects is the loss of information about the past that looting causes. Even if artifacts are recovered, the information that can be gained from their context in the ground is gone forever. Looters, often motivated by the prospect of sale, seek objects of commercial value from archeological sites. Vandalism causes malicious damage or destruction of archeological resources, for example, painting graffiti on ancient rock art panels or carving initials into ancient or historic masonry walls. Visitors to archeological sites sometimes illicitly take artifacts as souvenirs. Even the theft of only one or two artifacts at a time will result cumulatively in the destruction of the value of the archeological site for scientific investigation. Construction activities on Federal land without prior archeological review also can be prosecuted if they impact archeological resources. All these acts can be prosecuted under Federal laws.

Looting and vandalism of the nation's archeological heritage still challenge preservation efforts and require continuing attention by Federal agencies. The amount of funding reported for law enforcement devoted to the protection of archeological resources has increased from just under $960,000 in 1986 to over $2.7 million in 2007 (Figure 6 and Table 10). Adjusted for inflation, this is about a $1 million increase in funding over the 20 year period (1986-2007). The largest amount however, $4.7 million, was reported over a decade ago in 1994. Despite an overall increase in funding and more legislative support, looting activity has not diminished. Hundreds of looting incidents on Federal lands are reported annually. Many more looting incidents are never reported. Furthermore, the funding for archeological law enforcement efforts has been roughly level between 2004 and 2007; indeed, it is down slightly from the 2001-2003 period (Table 10).

Increased recreational use of Federal land is stretching agency law enforcement personnel thin. Rangers and other staff who are out on the public lands have much more to do and to watch than even a decade ago. Artifact removal and activities causing unintentional damage can be reduced through public education programs, such as those Federal land managing agencies

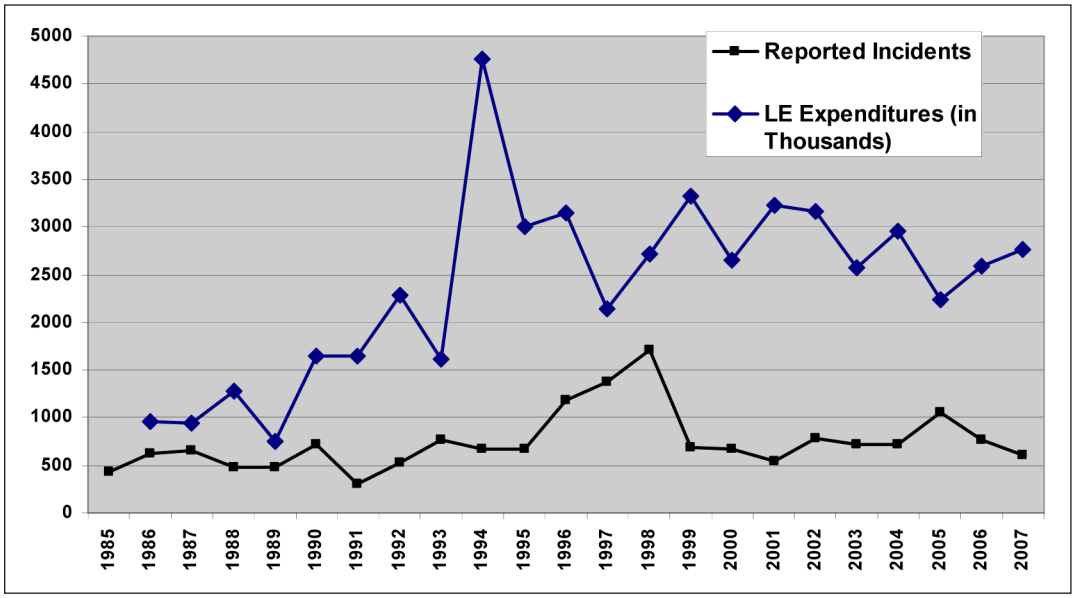

Figure 6. Reported incidents of looting and vandalism of archeological resources on Federal lands and law enforcement funding, 1985-2007.

are required to provide by Section 10(c) of ARPA. Additional support is needed.

Looting and Vandalism on Federal Land

Land managing agencies reported 3,143 documented incidents of looting and vandalism of archeological resources on Federal lands between 2004 and 2007, an average of 785 incidents per year (Figure 6 and Table 10). Documented incidents are the number of times that staff in land managing agencies actually observed and recorded damage, or attempted damage, to an archeological resource. Since most Federal land is not regularly inspected for signs of archeological site damage, the documented instances are only a fraction of the actual number of incidents.

The number of documented violations reported annually has increased over the period of data collection, from 438 in 1985 to 601 in 2007 (Figure 6 and Table 10). Federal agencies reported 96 incidents in which arrests of looters were made between 2004 and 2007, down slightly from the previous four years, during which 139 cases involving arrests were reported. Citations were issued to 351 individuals, also down from the previous four years. The reduction in arrests and law enforcement funding devoted to archeological resource protection during 2004-2007 probably indicates a reduction in the personnel available to patrol sites and pursue investigations when looted sites are discovered, since the number of incidents reported during the same time period has not decreased.

Table 10. The reported incidents of looting and vandalism of archeological resources on Federal lands, 1985-2007, did not decrease over time.

Year	Documented Violations	Cases Involving Arrests	Number of People Arrested	Number of People Cited	Law Enforcement Expenditures (in Dollars) [1]
1985	438	No data	27	45	No data
1986	627	No data	6	37	959,508
1987	657	No data	16	52	935,096
1988	475	No data	34	114	1,280,431
1989	475	No data	8	65	749,948
1990	716	No data	47	108	1,652,550
1991	306	No data	26	43	1,639,833
1992	524	No data	22	70	228,0321
1993	770	No data	37	90	1,615,122
1994	672	No data	53	158	4,755,698
1995	674	No data	41	45	2,997,658
1996	1,181[2]	No data	50	95	3,146,570
1997	1,372[2]	No data	34	87	2,146,983
1998	1,706[2]	12	36	154	2,720,964
1999	693	8	33	127	3,324,037
2000	675	40	45	146	2,646,974
2001	541	10	39	74	3,219,824
2002	787	80	115	197	3,157,259
2003	723	9	15	95	2,565,004
2004	713	10	37	122	2,960,803
2005	1,055	20	48	94	2,235,283
2006	774	47	23	78	2,588,409
2007	601	19	6	57	2,760,492
2004-2007 Total	3,143	96	114	351	10,544,987

Notes

[1] Law enforcement expenditures reported by agencies for archeological resource protection during this reporting year. Within the National Park Service, law enforcement costs refer to budgetary allocations for law enforcement within specific parks with frequently visited archeological sites. Other land managing agencies may use a different measure for identifying relevant costs.

[2] U.S. Forest Service reported large numbers of violations for a non-permitted event near archeological resources during two of these years. NPS reported an unusually large number of incidents for one year.

Agencies also reported data about fines, restitution, and seized property (Table 11). ARPA contains provisions for levying fines and civil penalties, ordering restitution, and seizing property (including trucks and boats) that is used to loot or vandalize archeological resources. During 2004-2007, Federal agencies reported an overall average per year of $35,776 in fines levied; $111,544 in restitution payments ordered; and $250,411 in property seized from perpetrators.

The reported cost of rehabilitation and repair to damaged archeological resources was estimated to be $2,136,833, an average of $534,208 during each of these four years. The funds realized by fines, restitution, and property seizures were only 75 percent of the estimated cost of repairing damage to archeological resources. Federal officials, as a result, should seek larger fines and restitution fees in their prosecutions and civil penalties to ensure that costs for site rehabilitation and repair are covered. Site rehabilitation, however, cannot restore the destroyed contexts of the looted artifact and the information about our heritage that the contexts represent.

Table 11. Reported costs associated with damage to archeological resources on Federal Lands (in dollars) are more than reported fines.

Year	Fines	Restitution Given	Cost of Restoration and Repair	Reward Given	Value of Seized Property	Law Enforcement Expenditures[1]
1985	23,221	104,085	No data	500	1,575,328	No data
1986	13,031	2,775	125,059	200	120,404	959,508
1987	12,475	530	105,480	500	60,901	935,096
1988	11,232	61,728	4,362,025	50	41,459	1,280,431
1989	8,995	4,350	4,500	0	90,393	749,948
1990	4,175	10,850	107,500	0	24,581	1,652,550
1991	10,300	3,008	97,166	200	522,040	1,639,833
1992	25,574	15,758	18,675	400	330,936	2,280,321
1993	41,100	23,284	69,986	0	423,586	1,615,122
1994	No data	No data	585,594	No data	No data	4,755,698
1995	No data	No data	1,466,910	No data	No data	2,997,658
1996	No data	No data	3,356,090	No data	No data	3,146,570
1997	No data	No data	501,918	No data	No data	2,146,983
1998	127,250	102,040	821,709	5,000	34,811	2,720,964
1999	137,539	85,575	428,828	0	19,450	3,324,037
2000	23,275	213,110	1,554,997	2,454	1,336,120	2,646,974
2001	62,283	326,366	1,399,068	400	27,098	3,219,824
2002	164,090	136,035	4,596,273	8,400	51,925	3,157,259
2003	66,952	153,184	2,545,272	6,000	25,465	2,565,004
2004	46,379	116,231	825,278	4,000	266,205	2,960,803
2005	52,042	98,386	350,976	5,010	10,027	2,235,283
2006	32,635	89,907	325,512	1,000	34,894	2,588,409
2007	12,049	141,650	635,067	10,910	690,520	2,760,492
2004-2007 Total	143,105	446,174	2,136,833	20,920	1,001,646	1,054,4987

Notes

[1] Law enforcement expenditures reported by agencies for archeological resource protection during this reporting year. Within the National Park Service, law enforcement costs refer to budgetary allocations for law enforcement within specific parks with frequently visited archeological sites. Other land managing agencies may use a different measure for identifying relevant costs.

Table 12 presents information about legal prosecutions for destruction of archeological resources on Federal lands. Within a given year, there is not a direct relationship between the number of prosecutions and the number of violations in which perpetrators were identified, however, these data provide a general picture of law enforcement efforts to protect archeological resources.

More specific information about prosecutions comes from data in the NPS Listing of Outlaw Treachery (LOOT) Clearinghouse. It maintains information about individual adjudicated civil or criminal cases pertaining to archeological resources on Federal lands. It shows that archeological looters and vandals were prosecuted under more than 40 Federal laws in addition to the Antiquities Act and ARPA (Table 13).

Table 12. Reported prosecutions for looting and vandalizing archeological resources on Federal lands, 1985-2007, do not keep pace with the number of documented violations.

Fiscal Year	Documented Violations	Reported ARPA Prosecutions	Reported Prosecutions Under Other Laws	Reported ARPA Misdemeanor Convictions	Reported Misdemeanor Convictions-Other Laws	Reported ARPA Felony Convictions	Reported Felony Convictions-Other Laws	Reported Cases with Guilty Defendants	Reported Cases with Defendants Not Guilty
1985	438	0	48	34	No data	9	No data	No data	No data
1986	627	0	30	7	No data	2	No data	No data	No data
1987	657	5	23	16	No data	13	No data	No data	No data
1988	475	38	64	7	No data	2	No data	No data	No data
1989	475	12	47	11	No data	3	No data	No data	No data
1990	716	24	80	7	No data	1	No data	No data	No data
1991	306	0	31	13	No data	2	No data	No data	No data
1992	524	0	89	38	No data	8	No data	No data	No data
1993	770	0	52	28	No data	13	2	0	0
1994	672	0	0	28	No data	15	0	0	0
1995	674	0	0	18	No data	23	0	0	0
1996	1,181[1]	0	6	16	No data	0	0	0	0
1997	1,372[1]	0	0	15	No data	6	0	0	0
1998	1,706[1]	64	63	21	10	11	2	42	14
1999	693	54	361	29	83	3	4	19	6
2000	675	98	76	86	15	15	4	31	14
2001	541	46	56	57	26	14	12	41	2
2002	787	50	77	80	31	7	3	24	1
2003	723	48	266	44	21	2	5	13	4
2004	713	49	103	51	19	0	8	22	0
2005	1,055	49	80	47	7	7	9	11	0
2006	774	36	70	43	32	14	5	26	0
2007[2]	601	25	24	40	18	4	17	21	0
Grand Total	17,155	598	1,646	736	262	174	71	250	41
2004-2007	3,143	159	277	181	76	25	39	80	0

Notes
Land managing agencies report both on ongoing prosecutions, and convictions in cases that were initiated in previous years.

[1] U.S. Forest Service (USFS) reported large numbers of violations for a non-permitted event near archeological resources during two of these years. National Park Service reported an unusually large number of incidents for one year.
[2] No data from USFS.

A total of 1,202 separate charges are recorded among the cases included in the clearinghouse. They can be grouped into four general categories: Antiquities Act and ARPA; injury to government property, which includes archeological sites on public land; theft of government property, which includes artifacts taken from archeological sites on public land; and other miscellaneous laws. Miscellaneous laws such as trespassing, conspiracy, or permit violation were invoked in addition to, or in place of, laws specifically designed to protect cultural resources, and account for about 60 percent of the total sample of citations (Figures 7 and 8).

Between 2004 and 2007, Federal agencies reported 159 ARPA prosecutions, an average of 40 per year, and 277 prosecutions under other laws, an average of 69 per year. (Note, however, the USFS did not provide data in 2007, which means that the totals for this year and the four year period are artificially low.) The relative number of ARPA cases compared to cases prosecuted under other Federal laws in general has increased over time, however, suggesting a growing familiarity with ARPA on the part of U.S. Attorney Offices and other Federal agency lawyers. For example, ARPA was used more frequently than other statutes to obtain *misdemeanor* convictions between 2004 and 2007. Overall, between 1993 and 2004 more ARPA *felony* convictions were reported than other statutes. Between 2004 and 2007, however, felony convictions using other statutes were more common, 39 compared to 25 (Table 12).

Site Stewardship Programs

Federal agencies work with regional and state site stewardship programs to enhance the protection of archeological resources on public lands. Archeological site stewardship programs are composed largely of volunteers who assist in the care, protection, preservation, documentation, and other appropriate management activities for archeological sites (Kelly 2007:1). A site steward program on public lands is typically administered and coordinated directly by the land managing agency on whose lands they operate, or through a nonprofit organization that is allied with the agency (see Kelly 2007:26, Table 1 for details). Federal archeologists are crucial to site stewardship programs on Federal lands.

Site stewardship programs help Federal agencies to monitor archeological sites for signs of looting and vandalism. They can also be effective in deterring looters and vandals. For example:

- The volunteer-based Southern Nevada Site Stewardship Program is a partnership between private citizens, five Federal agencies, the Nevada State government, and the University of Nevada-Las Vegas. Its volunteers report to land managers about any changes to the condition of archeological resources as a result of human or natural disturbance. Volunteers also work to improve public understanding. Funding through the Southern Nevada Public Land Management Act enabled the program to hire a manager. As of 2007, 269 volunteers monitored several hundred sites in Clark County. In 2007, the team received a national Department of the Interior (DOI) Cooperative Conservation Award for the preservation and protection of cultural and natural resources on DOI lands.

- The San Juan Mountains Association (SJMA), a partner of the San Juan National Forest, in Colorado developed a site stewardship program with three goals: to develop a cadre of trained volunteers to monitor cultural resources on public lands, to conduct cultural education outreach activities and, to form partnerships with other organizations to further combine efforts in the area of historic preservation. The initial work focused on the Canyon of the Ancients National Monument, administered by BLM. The effort, which now includes over 100 site stewards, expanded in 2004 to also include national forest lands in the San Juan NF and continues to grow.

Table 13. Laws and regulations under which people involved in looting and vandalism on Federal lands were prosecuted, as reported in the NPS LOOT Clearinghouse.

Citation	Description
15 CFR 922.71(A)(3)(iii)	National Marine Sanctuary Act regulation - altering the seabed of the Channel Islands Marine Sanctuary
15 CFR 922.71(A)(6)	National Marine Sanctuary Act regulation - removal of historical or cultural resources from the Channel Islands Marine Sanctuary
16 USC 1361	FWS - Marine Mammal Protection Act
16 USC 1431-1445	Marine Protection Research and Sanctuaries Act
16 USC 1538	Endangered Species Act
16 USC 19jj	Park System Resource Protection Act
16 USC 433	Antiquities Act
16 USC 460k	FWS - Refuge Recreation Act
16 USC 470	NHPA - National Historic Preservation Act
16 USC 470ee(a)	ARPA- Unauthorized excavation removal, damage, defacement
16 USC 470ee(b)	ARPA- trafficking in archeological resources
16 USC 470ee(c)	ARPA - trafficking
16 USC 470ee(d)	ARPA - Penalties for violations
16 USC 470ff	ARPA - penalties
16 USC 470gg(b)	ARPA - forfeitures
16 USC 551	FS - Organic Act?
16 USC 668dd	National Wildlife Refuge System Act
16 USC 701-12	Migratory Bird Treaty Act
18 CFR 1312	TVA-ARPA regulations
18 USC 1001	Making fraudulent representations and statements
18 USC 1163	Embezzlement and theft from Indian tribal organizations
18 USC 1170	NAGPRA -trafficking in human remains and cultural items
18 USC 1361	Injury to government property; depredation
18 USC 1382	DOD -trespassing
18 USC 1623(a)	Making false statements before a Federal Grand Jury
18 USC 2	Aiding and abetting a crime
18 USC 2314	Transportation of stolen goods,
18 USC 2315	Sale or receipt of stolen goods
18 USC 3	Accessory after the fact
18 USC 3146	Bail jumping
18 USC 371	Conspiracy to injure government property
18 USC 641	Theft of government property
18 USC 668	Theft of major artwork
18 USC 922(g)	Felon in possession of a firearm
19 USC 2609	Cultural Property Implementation Act
21 USC 841	Possession of controlled substance
21 USC 952	Smuggling of controlled substance
25 USC 3001(3)(C)	NAGPRA
25 USC 3001(3)(d)	NAGPRA
25 USC 3002(c)	NAGPRA
31 USC 3701-3720	Federal Claims Collection Act
36 CFR 1.5	NPS regulation - entering a closed area
36 CFR 1.6	NPS regulation - failure to obtain backcountry permit

Citation	Description
36 CFR 1.6(g)(2)	NPS regulation - permit violation
36 CFR 2.1(a)	NPS regulation -preservation of natural, cultural and archeological resources
36 CFR 2.1(a)(1)(ii)	NPS regulation – removal of plants or the parts or products thereof
36 CFR 2.1(a)(1)(iii)	NPS regulation – removal of nonfossilized and fossilized paleontological specimens, cultural or archeological resources
36 CFR 2.1(a)(1)(iv)	NPS regulation - possession or disturbing mineral resources
36 CFR 2.1(a)(3)	NPS regulation - throwing rocks at natural and archeological features
36 CFR 2.1(a)(4)	NPS regulation - possession of firewood
36 CFR 2.1(a)(5)	NPS regulation - walking and climbing on archeological resources
36 CFR 2.1(a)(6)	NPS regulation - preservation of natural, cultural and archeological resources
36 CFR 2.1(a)(7)	NPS regulation - possessing or using a mineral or metal detector
36 CFR 2.1(c)(3)(i)	NPS regulation - possession of natural products
36 CFR 2.10	NPS regulation - prohibits camping and food storage
36 CFR 2.13(a)(3)	NPS regulation - lighting, tending, or using a fire, stove or lantern in a manner that threatens
36 CFR 2.17(a)(1)	NPS regulation – prohibited use of aircraft
36 CFR 2.17(a)(3)	NPS regulation – prohibited retrieval of object or person via aircraft
36 CFR 2.23	NPS regulation - failure to pay recreation fee
36 CFR 2.31(a)(3)	NPS regulation –vandalism, destroying, injuring, defacing, or damaging property
36 CFR 2.32(a)(2)	NPS regulation -violating the lawful order of a government employee
36 CFR 2.32(a)(3)	NPS regulation - giving false information
36 CFR 2.35(b)(2)	NPS regulation - possession of a controlled substance
36 CFR 261.10(a)	USFS regulation - forbidden constructions on FS lands
36 CFR 261.10(j)	USFS regulation - operating or using a public address system
36 CFR 261.10(k)	USFS regulation - unpermitted use of area
36 CFR 261.3(b)	USFS regulation -giving any false, fictitious or fraudulent report
36 CFR 261.52(a)	USFS regulation - building, maintaining, attending or using a fire, campfire, or stove fire
36 CFR 261.53	USFS regulation - entry into closed areas
36 CFR 261.9(a)	USFS regulation - damaging any natural feature or other property
36 CFR 261.9(e)	USFS regulation - entering building, structure, or enclosure that is not open to the public
36 CFR 261.9(g)	USFS regulation - digging in, excavating, disturbing, injuring, destroying, or in any way damaging
36 CFR 261.9(h)	USFS regulation -removing any prehistoric, historic, or archaeological resource, structure, site, artifact, property
36 CFR 296.4(a)	USFS regulation - excavation of archeological resources
36 CFR 327.14(a)	ACE regulation -destruction, injury, defacement, removal or any alteration of public property
36 CFR 4.10(c)(3)	NPS regulation - operating a motor vehicle without activated headlights and taillights
36 CFR 4.19(a)	NPS regulation - driving off established public roads
36 CFR 5.14	NPS regulation - prohibits prospecting, mining, and mineral leasing except as authorized
36 CFR 7.19	NPS regulation - entering the Canyons of Canyon de Chelly with out a guide
43 CFR 2920.1-2e	BLM regulation - unauthorized use
43 CFR 7.4	DOI regulation -prohibited acts and criminal penalties
43 CFR 8341.1(b)	BLM regulation - operating an off-road vehicle on areas designated as limited
43 CFR 8352.4	BLM regulation - improper conduct of non-recreational authorized activities in primitive area
43 CFR 8360.0-7	BLM regulation –penalties for visitors' services laws
43 CFR 8364.1(d)	BLM regulation -closure and restriction orders
43 CFR 8365.1-5(a)(1)	BLM regulation -willfully defacing, disturbing, removing or destroying cultural or natural resources
50 CFR 27.61	FWS regulation -destruction or removal of property
50 CFR 27.62	FWS regulation -search for and removal of objects of antiquity
50 CFR 27.63(a)	FWS regulation - prohibits search for buried treasure, treasure trove

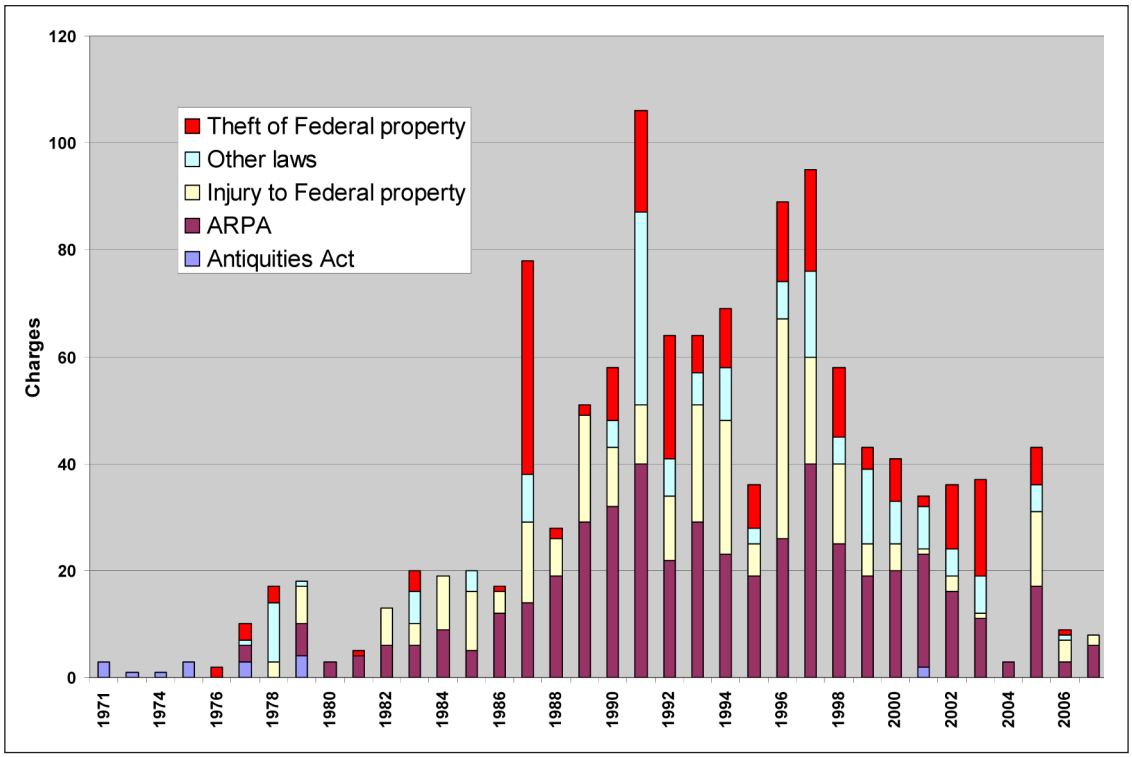

Figure 7. Distribution of legal tools used to charge vandals, according to the NPS LOOT Clearinghouse 1971-2007. (Year refers to year that prohibited activity ceased, not year of prosecution.)

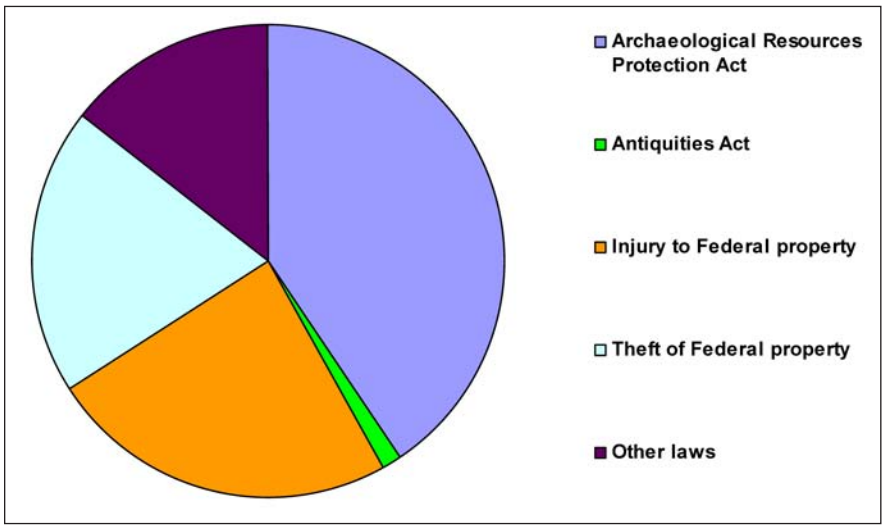

Figure 8. Types of archeological resource violations cases in the NPS LOOT Clearinghouse.

Stacked Rocks, Haleakala National Park

Conclusion

Looting and vandalism of our common archeological heritage challenge the protection efforts by Federal agencies. For the 2004-2007 reporting period the reduction in arrests of looters and lower amounts of reported funding devoted to archeological protection by law enforcement programs seems to reflect overstretched field law enforcement staff, unable to focus adequately on archeological resource monitoring and protection.

The consistently high number of reported incidents of damaged sites indicated that the problem of archeological looting of Federal lands has not been eradicated. Agency staffs are trying to maintain protection and preservation programs by developing partnerships with site steward programs. These are valuable efforts, but also require professional oversight, leadership, and coordination from agency staff archeologists and law enforcement officers. Agencies also are working cooperatively to pool important case information, such as in the LOOT clearinghouse, so that there is a ready resource available to appropriate use by all.

Artifacts and other archeological remains lose their scientific and humanistic value when they are removed from sites without scientific documentation. In this sense, archeological sites are like one-of-a-kind books in a publically owned library. When a site is looted, all or part of the book is destroyed. The information that might have been learned from proper study of the looted portion of the site, which belongs to all Americans, is lost forever.

Recommendation

Recommendation 5: To better protect the integrity of archeological sites on Federal lands and to deter looting and vandalism, strengthen working relationships between Federal archeologists, law enforcement officers, and Federal prosecutors. Provide training for archeologists, law enforcement personnel, and attorneys to heighten awareness of ARPA and its requirements, as well as other laws which may be used to prosecute archeological resource crimes.

Bighorn Canyon Blue team excavating at Two Eagle

Section III.

Critical Issues

Legislation developed over the past forty years requires an archeologist – not any other cultural resource professional or subject area expert – to carry out many responsibilities for archeological resources on Federal lands. Staffing, however, is one of the most pressing challenges currently faced by the Federal Archeology Program. As shown in the previous sections, the workload for Federal archeologists has increased as the work force has decreased.

Federal land managing agencies are chronically understaffed in offices that carry out archeological stewardship responsibilities. Hiring has not replaced archeologists who leave the Federal government. The aging of the workforce poses additional problems as Federal archeologists retire and their positions go unfilled. Without focused succession planning, the Federal Archeology Program stands to lose significant experience, expertise, and manpower. Chapter 7 examines the issue in more detail, while Chapter 8 outlines the effects on the Federal Archeology Program activities.

Chapter 7

MAINTAINING THE FEDERAL AGENCY ARCHEOLOGICAL WORK FORCE

The Federal Archeology Program is in a work force crisis. Increased emphasis on data collection and data management have increased efficiency and competency, but significantly added to archeologists' workloads. Development of contracts or cooperative agreements between Federal agencies and private firms or universities requires Federal archeologists' oversight and project management, to which they bring expertise in law, policy, procedure, and best practices. Beyond the technical aspects of day-to-day stewardship, no substitute exists for the enthusiasm and knowledge that Federal archeologists bring to public education and working with volunteers. The need for Federal archeologists grows, yet the Federal archeological work force is actually shrinking. Archeological resources under the Federal government's stewardship are, as a result, increasingly at risk.

The following sections review the number of archeologists employed by land managing Federal agencies in relation to the amount of land managed, retirement trends, and present Federal hiring practices.

Expanding the Archeological Workforce

The Federal Archeology Program cannot meet all of its responsibilities in a timely manner due to a shrinking work force. Quantitative survey data and anecdotal data from the field demonstrate that Federal archeologists are hard pressed to fulfill their agencies' stewardship responsibilities. Downward trends in staffing must reverse to ensure efficient and competent care for Federal archeological resources.

One recommendation of the Secretary's Report is to increase staffing levels. Table 14 shows that the nineteen reporting agencies employ 1,171 archeologists. Based on the ratio of land to archeologists employed by the Department of the Army, Federal agencies actually require 8,264 archeologists. The addition of over 7,000 archeologists is needed to fulfill the range of responsibilities of the Federal Archeology Program (Table 14). The Army provides the current best-case scenario since it has the highest ratio of archeologists to land managed: one position for 90,200 acres (Table 14). Comparison with statistics for archeologists employed by other Federal agencies in 2007 demonstrates the extent of the problem. The BLM manages the largest acreage of any Federal agency. Under the DOA ratio, it would employ 2,918 archeologists instead of 195. The USFS manages the second-largest acreage. It would employ 2,134 archeologists instead of 390. The archeological workforce would increase 70-fold at the USFWS and four-fold at the NPS. Judging by the standard set by the Army, most archeological programs in Federal land managing agencies are significantly understaffed. It is likely that regulatory and development Federal agencies are understaffed as well.

Understaffed agencies face a number of consequences in the day-to-day management of archeological resources. Federal agencies reported in 2007 that 65-99 percent of managed lands remained uninventoried for archeological sites. Understaffed offices mean that lands remain uninventoried and, as a result, Federal agencies cannot protect archeological resources because they do not know where sites are located. Inadequate staff numbers also affect the preparation of nominations to the National Register under Sections 106 and 110 of the National Historic Preservation Act. National Register listing provides additional protections through procedural requirements designed to enhance the long-term preservation of archeological resources.

Public outreach and education – a primary vehicle for demonstrating the public benefits of Federal archeology – are particularly compromised by low staff numbers. Inadequate staff numbers limit the amount of time that archeologists can work with the public. Volunteer programs are one example. If a Federal agency has neither the staff to manage volunteers, nor staff time to devote to supervision, then the agency must turn away volunteers and lose the important assistance they provide. They also lose an opportunity for the public to become personally invested in Federal archeological resources. One such instance comes from the USFS, which in recent years has turned away a third of the people who contacted them to work on archeological projects.

To reiterate, the Federal Archeology Program work force is insufficiently staffed to enact the responsibilities to preserve, protect, and interpret America's archeological resources. An estimated 7,000 archeologists are necessary to carry out the breadth of functions. Trends in retiring and hiring further draw down the Federal Archeology Program work force.

Table 14. Comparison of archeologists employed to archeologists needed in 2007, showing the insufficiency of work force numbers to meet Federal stewardship responsibilities.

Agency	Land Managed (Acres)	Percent Surveyed	Archeologists employed	Archeologists needed*
Bureau of Land Management	263,621,285	35	195	2,918
U.S. Forest Service	192,511,012	25	390	2,134
U.S. Fish and Wildlife Service	95,075,000	12	15	1,053
National Park Service	77,415,476	10	212	858
Bureau of Indian Affairs	55,700,000	7	27	617
U.S. Navy	16,449,650	2	27	182
Department of the Army	11,907,533	1	132	132
Army Corps of Engineers	11,700,000	1	113	130
Bureau of Reclamation	8,700,000	1	28	96
Air Force	8,613,275	1	19	96
Department of Energy	3,103,986	1	11	35
National Aeronautics and Aviation	339,190	1	0	4
Tennessee Valley Authority	293,000	1	1	3
U.S. Coast Guard	66,000	1	0	1
Air National Guard	47,550	1	0	1
Bureau of Prisons	43,600	1	0	1
Federal Aviation Administration	33,159	1	0	1
Veterans Affairs	25,303	1	1	1
General Services Administration	17,752	1	0	1

* Projection is based on acreage managed by each agency, using the number of archeologists employed by the Department of the Army in 2007 as a standard.

Excavating at Lewis and Clark National Historic Trail.

Table 15. Permanent Federal agency archeologists, 2007-2008, reported by age.

Federal Agency Archeologists	Total	Age 20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79
U.S. Forest Service[1]	337	8	55	94	157	23	0
		2%	16%	28%	47%	7%	0
National Park Service[2]	159	1	33	43	70	11	1
		1%	21%	27%	44%	7%	1%
All Federal Agencies[3]	974	21	167	252	437	97	No data
		2%	17%	26%	45%	10%	

Notes
[1] U.S.Forest Service data on permanent employees, January 2008.
[2] National Park Service data on permanent employees, March 2007.
[3] Data on all Federal permanent archeologists, September 2007.

Table 16. Permanent Federal agency archeologists, 2007-2008, reported by years to retirement.

Federal Agency Archeologists	Retirement Eligibility Now	Next 5	Next 10	Next 15	Next 20	Next 25	Next 30	>30(est.)	Total
U.S. Forest Service[1]	23	85	72	49	45	31	24	8	337
	7%	25%	21%	15%	13%	9%	7%	2%	
National Park Service[2]	12	43	32	18	31	19	4	no data	159
	8%	27%	20%	11%	19%	12%	3%	no data	
Bureau of Land Management[3]	no data	70	35	25	9	20	7	28	194
	no data	36%	18%	13%	5%	10%	4%	14%	

Notes
[1] U.S. Forest Service data on permanent employees, January 2008.
[2] National Park Service data on permanent employees, 31 March 2007.
[3] Bureau of Land Management data, March 2007.

Table 17. Permanent and temporary Federal archeologist positions (GS 193), 2000-2007.

	2000			2001			2002			2003			2004			2005			2006			2007		
	Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Temporary	Total
All	841	227	1068	876	277	1153	927	248	1175	960	233	1193	982	215	1197	998	185	1183	975	148	1123	974	160	1134
BLM	145	14	159	154	16	170	161	26	187	171	27	198	168	24	192	167	20	187	167	22	189	170	25	195
COE	98	2	100	103	2	105	105	2	107	110	2	112	112	1	113	111	2	113	102	5	107	108	5	113
NPS	146	99	245	155	119	274	158	87	245	163	74	237	166	85	251	171	85	256	164	57	221	154	58	212
USFS	297	100	397	303	125	428	329	120	449	333	115	448	344	88	432	351	63	414	340	51	391	339	51	390

(Data from Office of Personnel Management; www.fedscope.opm.gov/; accessed May 27, 2009)

Trends in Retiring and Hiring

Like much of the American work force, the cadre of professional archeologists employed by Federal agencies is aging. Over half of the permanent archeologists in Federal agencies are over 50 years old. Federal archeologists in the first half of their careers (estimated as ages 20-39) constitute no more than 19 percent of the professional archeological work force (Table 15). The permanent archeological workforce of the USFS and NPS totals about half of all Federal archeologists (Table 16). Together, the USFS and NPS report that 15 percent of their permanent archeological professionals are eligible to retire in 2008 (Table 16). Between 2008 and 2013, 25 percent of USFS archeologists, 27 percent of NPS archeologists, and 36 percent of BLM archeologists will become eligible to retire. Overall, between 53 and 55 percent of the professional archeologists currently employed by BLM, NPS, and USFS already are eligible or will become eligible to retire during the next ten years.

The Federal government is not hiring archeologists on pace with retirement trends. Data from the Office of Personnel Management show changes in the total number of Federal agency archeologists between 2000 and 2007, as well as the number of permanent positions (Table 17). Also shown are the same two numbers broken down for the four largest Federal agency archeology programs: Bureau of Land Management (BLM), Army Corps of Engineers (USACE), National Park Service (NPS), and US Forest Service (USFS). Overall, the number of permanent Federal archeologists increased by about 125 positions between 2000 and 2004, but declined by about 63 positions thereafter. The decline is even more dramatic in temporary positions, which decreased by 100 vacancies between 2001 and 2007, which means that agencies are not able to fill seasonal and term positions. Archeologists in temporary positions assist the permanent archeological workforce in carrying out seasonal fieldwork or complete individual projects, such as data recovery or inventory.

At present, the hiring of new career professionals is not sufficient to replace the senior professionals who have already or soon will be retiring. For example, the NPS hired nine professional archeologists in the five-year period between 2003 and 2007. During the same period, however, the NPS lost 23 archeologists through retirement. If the status quo in hiring and replacing NPS archeologists continues during the next decade, the NPS will begin its second century as steward of some of America's most important archeological resources with less than 100 career archeologists (Table 18).

An informal review of a sample of fourteen retirements or resignations of NPS archeologists from permanent, full-time positions between 2004 and 2007 found that, in eleven cases (78 percent), the positions were eliminated or left vacant following the incumbents' departure. The positions in question were not clustered in one region or state; examples come from Pennsylvania, Florida, Nebraska, Colorado, New Mexico, Washington State, California, and Washington, DC. In some cases, the functions that were carried out by the former employees were assigned to others, sometimes on a rotating basis, sometimes permanently. In all cases, a smaller work force has severely increased the work load for remaining employees.

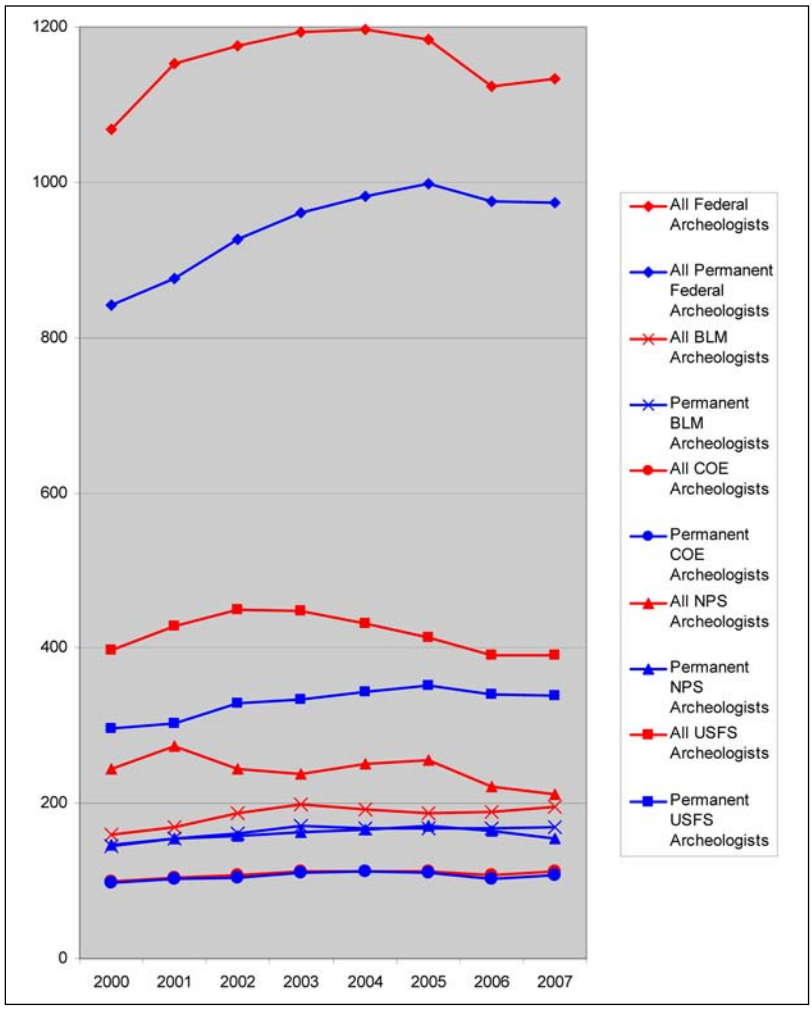

Figure 9. Permanent and temporary Federal archeologist positions (GS 193), 2000-2007.
(Data from Office of Personnel Management).

Table 18. Projected numbers of permanent Federal agency archeologists in 2017 on the basis of present replacement rates.

Federal Agency Archeologists	Current[1]	New Hires[2]	Retirements[3]	Estimated 2017 Professional Staff[4]
U.S. Forest Service	337	47	185	199
National Park Service	159	22	87	94
Bureau of Land Management	194	27	87	134
All Federal Agencies	974	136	536	574

Notes
[1] Numbers of permanent archeologists employed by Federal agencies (as in Tables 13 and 14).
[2] Estimated number of archeologists who will be hired during the ten-year period, 2007-2017, using the hiring rate for new National Park Service (NPS) archeologists documented between 2002 and 2006 by NPS Personnel Office.
[3] Estimated number of retirements of archeologists during the ten-year period, 2007-2017, if retirements occur when retirement eligibility is reached by individuals.
[4] Estimated number calculated as: Current + New Hires – Retirements.

If the professional work force of Federal archeologists continues at the current rate of replacement of less than parity, the number of professional archeologists in Federal agencies will likely decline by as much as half in ten years. It is critical that the positions of retiring archeologists be filled by permanent professional archeologists. Consulting archeologists are not a suitable substitute. Professional staffs develop and hold institutional knowledge of both archeology and their agency culture, but also Federal law and policy, procedure and best practices. Reliance on consultants who do not have access to such knowledge can lead to unexpected, unintended, and costly problems.

Conclusion

Federal archeologists have assumed new responsibilities from legislation over the past forty years tied to environmental stewardship without significant increase in the number of positions. While archeological survey and site assessment continue, they occur at a slower pace and time sensitive opportunities to interact with the public through volunteering, site stewardship, civic engagement, and public education are frequently missed with limited personnel. Public support of archeology erodes through insufficient staff sizes. Likewise, low staffing numbers affect other programs that archeologists assist, such as law enforcement, museum management, and visitor services.

Federal agencies are faced with the double challenge of carrying out expanding archeological resource stewardship effectively in an environment of restricted budgets and a work force composed of a high proportion of experts already eligible or soon to be eligible for retirement. Federal agency leaders must take steps to ensure the replacement of retiring professionals. They must act so that agencies' professional archeological staffs are sustained. The preservation of our archeological heritage depends on it.

Recommendation

Recommendation 6: In order to maintain a high level of care for archeological sites, collections, and data, and sustain professional outreach and communication about archeological resources, an adequate workforce is required. All agencies, but especially land managing agencies, need to hire more permanent archeologists. Succession planning should ensure that retiring "baby boomer" archeologists are replaced by permanent, well qualified professional archeologists.

Chapter 8

CONCLUSIONS

For over a century, the American people have sought to protect and preserve archeological resources through their elected representatives. The actions of Congress and the President in enacting laws, such as the Antiquities Act and the Archaeological Resources Protection Act, affirm the importance of archeological resources to the American people. The cultural, historic, and scientific values of archeological resources anchor our understanding of our place as a nation and a people in the geography and history of North America, and our ties to other parts of the globe.

Archeological resources are a unique gateway for learning about the past. They provide opportunities for self-reflection and for community engagement about the times in which we live and the ways we fit into the continuum of American history. Archeological resources are tangible evidence of important events, individuals, and cultures.

> Material culture may be the most objective source of information we have concerning America's past. It certainly is the most immediate. When an archaeologist carefully removes the earth from the jumbled artifacts at the bottom of a trash pit, he or she is the first person to confront those objects since they were placed there centuries before. When we stand in the chamber of a seventeenth-century house that has not been restored, we are placing ourselves in the same architectural environment occupied by those who lived there in the past. The arrangement of gravestones in a cemetery and the designs on their tops create a *Gestalt* not of our making but of the community whose dead lie beneath the ground...
> The written document has its proper and important place, but there is also a time when we should set aside our perusal of diaries, court records, and inventories, and listen to another voice. Don't read what we have written; look at what we have done (Deetz 1977: 160-161).

Federal archeologists and archeologists working on contracts related to Federal undertakings conduct investigations necessary to ensure effective stewardship of the American archeological record. The activities needed are the ones described in the various chapters of this report: resource identification, evaluation, documentation; preservation and access to collections, data, and reports; public education, outreach, and participation opportunities; and resource protection.

Preserving Archeological Resources

Overview and identification, evaluation, and documentation of archeological sites are among the most basic of tasks carried out as part of Federal agency archeological programs. Mainly these activities are conducted as part of the planning review of proposed Federal undertakings. Field surveys locate and determine the significance of archeological sites that may be affected by the proposed undertaking. In some cases, significant sites are preserved in place by moving a project location. In other cases, the data from affected sites is collected and the undertaking's impact is mitigated by scientific excavation, analysis, documentation, and curation of the collected artifacts, materials, data, and other associated records.

In the next decades, the expected effects of climate change and the increase of development for energy extraction require increased attention to archeological site identification, evaluation, and documentation. Models to predict the effects of climate change in specific geographic regions are needed to plan and prioritize site identification, evaluation, and documentation activities. If significant sites are to be documented before they are forever lost, it is necessary to begin assessment programs focused on identifying the sites, evaluating their relative significance, and planning how to preserve them in place or document them through data recovery efforts.

Also in the next decades, the expected increase in development for energy extraction, either traditional sources or wind and solar power, are expected to add to the volume of Federal archeologists' responsibilities. An adequate work force is needed to carry out or monitor archeological projects. In areas where energy projects will be focused, large scale archeological surveys to identify sites, evaluate them, and take steps to preserve them or conduct data recovery at significant sites are

Midwest Region research team conducting experiments at Wind Cave National Park. (NPS)

needed so that important archeological resources are not irreparably lost.

Increases in the recreational use of public lands are also straining the ability of agency archeologists and other resource management personnel to monitor sites to ensure their preservation and protection. Substantial increases in energy exploration and extraction on Federal lands is requiring some agency archeologists to focus full time on compliance for these undertakings, making it impossible for them to devote any time to resource documentation, public outreach, resource protection, or other archeological stewardship activities. New agency units such as national parks and national monuments expand the areas that Federal agency archeologists must cover as part of their duties.

Preserving Archeological Collections

Federal agency archeology programs are responsible for more than archeological sites. They also care for collections, including materials and associated records from archeological sites on agency lands or from agency investigations. Since 1990, when the DOI issued regulations describing this responsibility and providing standards and guidelines, significant progress has been made. Even so, almost half of the materials in Federal archeological collections are not cataloged and, therefore, not available for use in research, education, public outreach, or other legitimate purposes. These uncataloged materials also cannot be adequately accounted for.

The long-term preservation and access to associated records is also threatened because of a lack of appropriate curation for digital data and documents. Computer and digital technology are changing at a swift pace. Data stored in digital formats and computer storage media today will not be retrievable within a short time. A new approach to long-term preservation and access to these archeological data are needed. Federal agencies must find a solution to this dilemma.

Access to reports of Federal archeology investigations also is a problem. Most reports have been produced in small numbers with limited distribution. Copies often are difficult to locate and to access. NADB-R, a publically available searchable database contains citations of 350,000 studies, but no citations after 2002. Funding is needed to systematically digitize paper reports. Agencies also must develop, in concert with

academic experts, archivists, and curators, common standards and guidelines for such an effort so that sensitive information is appropriately shielded and protected.

Promoting Civic Engagement

Federal agencies have led the surge in public education and archeological outreach programs during the past twenty-five years. Public outreach to descendant and local communities has been an area of special focus. Efforts have also aimed to forge positive relationships with Native American communities through collaborative projects. Using archeological projects to engage local communities in dialogue is another aspect of public outreach. Local communities may find in a better understanding of the past, gained through exploring and interpreting the archeological record, a means to overcome modern challenges they face with a united front.

Primary school archeological programs are another way that Federal archeologists have engaged a special part of the public – our youth – in archeology and in public lands more generally. These programs supplement standard curricula, add a new dimension to classroom learning, and promote a stewardship ethic, sowing seeds that will bear fruit in decades to come.

Citizen volunteers have become another focus of Federal agency programs. Site stewardship efforts, in particular, have contributed to the preservation and protection of archeological sites. For one thing, site steward groups have extended the areal coverage for site monitoring that agencies manage. Other volunteer efforts have been vital to Federal agency archeology projects to document sites, to catalog archeological collections, and to assist in public interpretation of archeological resources.

Several studies have demonstrated that the effectiveness of public outreach and education is closely liked to available personnel to coordinate, monitor, and participate. These findings suggest that the support that the Federal Archeology Program currently enjoys from the public will erode without adequate workforce to maintain and exceed current levels of public participation and education.

An educated and well-informed public is one of the best ways to protect and preserve archeological resources and the nation's heritage, and Federal archeologists work to make that heritage accessible in a variety of ways. The Preserve America E.O. and NHPA, in particular, encourage archeologists' participation in public outreach and education. While necessary and worthwhile, the development of outreach materials and coordination of information delivery place additional workload on the Federal Archeology Program.

Preventing Looting and Vandalism

Efforts to prevent the looting and vandalism of sites continue to be an important aspect of archeology programs. In these efforts, Federal archeologists are partners with law enforcement staffs and Federal prosecutors. The annual reported incidents of looting and vandalism over the twenty-plus years they have been compiled show these illegal and destructive activities continue to occur. A positive aspect of the challenge of fighting archeological looting is that law enforcement officials and Federal prosecutors are much more aware of the problem and poised to fight it in concert with agency archeological staffs.

Federal archeologists are working smarter in their fight against looting and vandalism. At least one region of the country has developed a program to share expertise to collect high quality evidence to aid in prosecutions when looters are caught. Many agencies actively partner with citizens' site stewardship organizations to monitor archeological sites. Good working relations with law enforcement and Federal prosecutors, as well as training in archeological resource protection laws, will make a significant different in the fight against looting.

Maintaining the Archeology Workforce

The tension between competing responsibilities for appropriate stewardship of archeological resources and limited personnel to carry out these responsibilities continues into the 21st century. In addition, the current archeological workforce is shrinking and the rate will accelerate unless current hiring priorities are reversed. All of the necessary work that is being done and needs to continue to be done and even improved upon, relies on a strong, professional archeological work force in Federal agencies. These experts are critical to both carry out the necessary work and oversee it.

Unless agency leaders take effective action, they soon will be looking back at an enormous professional

Archeologists record a prehistoric tent ring feature in Gates of the Arctic National Park and Preserve, July 2005. Photo by Jeff Rasic. (NPS)

archeological "brain drain." Agencies will suffer the consequences of losing key and necessary staff. Existing stewardship procedures cannot be followed, nor responsibilities met without a professional archeological work force or equivalent replacements. If the United States is to sustain its commitment to the care and wise use of archeological resources for public benefit and enrichment, renewal of the Federal professional archeological work force is required. Additional spending by Federal agencies for projects and programs will be an important factor in maintaining archeological data as well.

The recommendations in this report highlight areas of specific needs that must be met if the Federal Archeology Program is to meet the expectations of the American people. Wise planning, increasing current levels of archeological staff, and commitment to the deployment of labor saving technologies will sustain our vital work and adequately prepare us for success in future challenges. Our archeological resources – and the American people who value them – depend on it.

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