REPORT ON THE FEDERAL ARCHEOLOGY PROGRAM
FY 1991 - FY 1993

By

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Mission: As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department also encourages stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for the people who live in Island Territories under U.S. administration.

Bruce Babbitt
U.S. Department of the Interior Secretary

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EXECUTIVE SUMMARY

This report is prepared by the National Park Service (NPS) at the direction of the Secretary of the Interior for the Senate Energy and Natural Resources Committee and the House Natural Resources Committee of the U.S. Congress, pursuant to Section 5(a) of the Archeological and Historic Preservation Act (AHPA) and Sections 10(c) and 13 of the Archaeological Resources Protection Act as amended. The report describes the activities and accomplishments of the Federal archeology program between FY 1991-1993. It includes information on the scope and effectiveness of the Federal archeology program and a description of a wide range of Federal archeological activities. The Secretary is to provide recommendations to Congress on how to improve the program. The Secretary's recommendations follows;

Public education and participation. Volunteers are providing needed support and services for many projects and activities on public land. They are participating more than ever in agency archeology programs and are contributing directly to preserving the past in their local communities. NPS and the Bureau of Land Management (BLM) together reported 459,000 contributed hours equivalent to $7 million over the reporting period. BLM introduced Project Archeology, a program that provides a systematic approach to integrating archeology into school curriculum for K-12. Land management agencies continued to sponsor and participate in state archeology weeks nationwide.

Recommendations

☛In order to measure the success of outreach programs and to keep pace with satisfying public needs and desires, agencies need to track closely public contributions to their programs and evaluate their effectiveness.

☛Both avocationals and professionals need to expand communication and understanding of each other's roles and expectations with creating and maintaining programs that are mutually beneficial.

☛Federal agencies should establish partnerships with educational institutions locally and nationally to provide resources in archeology and education to teachers and students.

☛Education products and materials should be evaluated to determine if the public are gaining a better understanding of archeology and the preservation of archeological resources.

☛Federal agencies need to publicize the results of their archeological projects in popular publications that interpret scientific information into an understandable format for public consumption and use.

☛The archeological profession needs to pursue a more active role in planning and decision-making by the recreation and tourism industry.

Efforts to Fight Looting and Preserve the Archeological Record in Place. Between $1 million to $2 million was spent in archeological law enforcement annually. The number of arrests and citations for violations declined, while the number of violations are increasing. The good news is that the number of prosecutions and convictions are rising and the success rate of prosecutions is climbing. This improvement in prosecutions and convictions can be partly attributed to improved training for attorneys prosecuting archeological resource crimes and the commitment by land managers and the Department of Justice (DOJ) to spend time and funds to aggressively pursue archeological resource crimes. A comprehensive sourcebook on the Archaeological Resources Protection Act (ARPA) is available as a reference tool in every U.S. Attorney's office. In addition, a wide network of trained Federal attorneys are communicating and sharing information about ARPA cases.

Recommendations

☛Improve law enforcement efforts between land management agencies by developing regional strategies to combat looting.

☛Elevate the use of ARPA as the primary statute for prosecuting archeological resource crime, both criminal and civil cases.

☛Federal agencies and Tribes should pursue civil action more vigorously when criminal prosecution is not the selected course of action.

☛Federal agencies should develop and implement agency-wide archeological resource protection plans to better integrate law enforcement with archeological resource protection needs.

☛Federal agencies should establish a standardized reporting process for archeological resource crime.

Interagency Cooperation and Improvements in the Exchange and Availability of Information. Federal archeology programs are developing partnerships to leverage funds through donations, cooperative research activities, and challenge cost share projects. The Forest Service (FS), BLM, and NPS have cost-share programs to engage in a variety of research and interpretive projects. Agencies continue to work together on interagency archeological initiatives. Professional staff working in adjoining management areas are sharing technical expertise and together solving common management problems. This effort is best exemplified by local and regional approaches to battle looting and with agencies assisting nearby Tribes with survey and evaluation.

Recommendations

☛Federal agency programs should develop, prioritize, and schedule archeological projects that can be undertaken when funds become available or that can be marketed to potential partners.

☛Federal agencies should develop nationwide agreements that resolve procedural differences and streamline the transfer of funds and materials to support interagency projects.

☛To increase research on public land, Federal agencies should create and promote opportunities for researchers to compete for the limited cost-share funds.

☛Federal agencies should develop standardized measures and fully implement computerized databases' for resource management, research and public information.

☛Revise and update resource overviews with current archeological information.

Site inventories. Identification (inventory) and evaluation projects numbered 55,470 in the three year period and were predominantly agency funded. The number of projects conducted annually has declined

by 6,000 since FY 1991, and by FY 1993 represented 43% of all agency investigations. The amount of Federal and Indian lands inventoried by the end of FY 1993 was 43.2 million acres or 6% of the land base; only 3% have been thoroughly investigated to identify all archeological sites. The number of known sites reported on Federal and Indian land totalled 466,970, a fraction of the estimated 6-7 million. The long-term management and protection of known archeological resources is the biggest challenge facing land management agencies. Another notable shortcoming is the small percentage of known sites being evaluated for the National Register of Historic Places (NRHP). Although the number of evaluations is increasing, it is not keeping pace with the rate of site discovery. By the end of FY 1993, the majority (67%) of archeological sites were unevaluated. Under ARPA Section 14, six of the 21 agencies in the Department of Defense (DOD), Department of Interior (DOI), Department of Agriculture, and the Tennessee Valley Authority (TVA) that provide data for this report have initiated systematic, regional inventory programs of their lands.

Recommendations

- Federal agencies with large land bases need to design innovative, inventory strategies that provide better understanding of their archeological resource base and to improve their long-term management strategies.

- Federal agencies with small land bases can and should set goals to completely inventory their lands.

- Development of more reliable inventory strategies are needed to curb the steady increase of unanticipated site discoveries.

- Federal agencies should utilize thematic site evaluations, or multiple property nominations to reduce the backlog of unevaluated sites.

Curation of Collections and Records

Several agencies and Departments, including BLM, the Fish and Wildlife Service (FWS), DOD, and the Corps of Engineers (COE), are following the lead of NPS in developing agency-wide policies and guidelines for adequate long-term curation of archeological remains and associated records.

Recommendations

☛Federal agencies should continue to account for their collections and records curated at nonfederal facilities and plan for their appropriate treatment when located in substandard curatorial facilities.

☛Federal agencies should consider pooling resources and forging partnerships with State and local institutions to find a common location to house archeological collections and records.

☛Federal agencies should work closely with museums holding their collections and records to provide the public with opportunities to learn about America's past.

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LIST OF ACRONYMS USED IN THE REPORT

ACHP	Advisory Council on Historic Preservation
AHPA	Archeological and Historic Preservation Act of 1974
AF	Air Force
ANG	Air National Guard
ARNG	Army National Guard
ARPA	Archaeological Resources Protection Act of 1979
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BOP	Bureau of Prisons
BOR	Bureau of Reclamation
CG	Coast Guard
COE	Corps of Engineers
CRM	Cultural Resource Management
DCA	Departmental Consulting Archeologist
DOA	Department of Army
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of Interior
DOJ	Department of Justice
EDA	Economic Development Administration
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FERC	Federal Energy Regulatory Commission
FHA	Federal Highway Administration
FmHA	Farmers Home Administration
FRA	Federal Railroad Administration
FS	Forest Service
FTA	Federal Transportation Administration
FWS	Fish and Wildlife Service
GIS	Geographical Information System
GSA	General Services Administration
HHS	Health and Human Services
HUD	Department of Housing and Urban Development
IHS	Indian Health Service
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
INS	Immigration and Naturalization Service
Legacy	Legacy Resource Management Program
LOOT	Listing of Outlaw Treachery
MMS	Minerals Management Service
NADB	National Archeological Database
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NASA	National Aeronautics and Space Administration
NEH	National Endowment for the Humanities
NHL	National Historic Landmark
NHPA	National Historic Preservation Act

NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRC	Nuclear Regulatory Commission
NRHP	National Register of Historic Places
NSF	National Science Foundation
NTHP	National Trust for Historic Preservation
OSM	Office of Surface Mining
PHS	Public Health Service
REA	Rural Electrification Administration
RTC	Resolution Trust Corporation
SAA	Society for American Archeology
SCS	Soil Conservation Service
SHA	Society for Historical Archeology
SHPO	State Historic Preservation Office
SI	Smithsonian Institution
SLSDC	St. Lawrence Seaway Development Corporation
SRC	The Secretary of the Interior's Report to Congress on the Federal archeology program
TVA	Tennessee Valley Authority
UNESCO	United Nations Economic and Social Council
UNIDROIT	Institute for the Unification of Private Law
USBM	U.S. Bureau of Mines
USGS	U.S. Geological Survey
USMC	U.S. Marine Corps
USN	U.S. Navy
USPS	U.S. Postal Service
VA	Veteran Affairs

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THE FEDERAL ARCHEOLOGY PROGRAM

Introduction

The Secretary of the Interior's Report to Congress on the Federal archeology program (SRC) describes the activities and accomplishments of the Federal archeology program between FY 1991-1993. The U.S. Congress requires this report to assess the impact of Federal programs and activities on the nation's archeological heritage. It is required under the Archeological and Historic Preservation Act of 1974 (AHPA) which provides for the preservation of historical and archeological data that might be "irreparably lost or destroyed" as the result of "alterations of the terrain" caused by a Federal agency or federally licensed activity or program. The Secretary of Interior is authorized to coordinate and undertake the recovery, protection, and preservation of such data. These responsibilities have been delegated to the NPS.

This report provides information on the scope and effectiveness of the Federal archeology program, the specific projects surveyed, the results produced, and the costs incurred by the Federal government. The scope of the program covers activities used for recovery, protection, and preservation of data. The reporting requirement was added to the Act for the following reasons; (1) to maintain adequate oversight and coordinating responsibilities; (2) to identify problems, accomplishments and costs of the program; (3) to assure a relatively uniform Federal program; and (4) to review the efforts of agencies[1].

The Archaeological Resources Protection Act of 1979 (ARPA) also requires the Secretary to *comprehensively* (my emphasis) report on the activities carried out under the provisions of this Act. The Secretary compiles information on law enforcement, permitting, intergovernmental coordination, and

[1] Report Accompanying HR 296 (April 11, 1974); Report No. 93-992 and Congressional Record-House, May 6, 1974, H3549.

cooperative activities with private individuals and provides recommendations deemed appropriate to change and improve provisions of the Act. In 1988, ARPA was amended to strengthen the criminal provisions of the Act by including attempted violations as prohibited acts; lowering the felony threshold from $5,000 to $500; requiring Federal land managers to develop archeological public awareness programs; requiring plans and schedules for archeological survey of Federal and Indian lands; and systematically documenting ARPA violations. This information on ARPA is reported to Congress as part of the SRC.

Federal Archeology Program

The Federal archeology program embodies a variety of activities defined by authorities, regulations, and guidelines that provide for the preservation and protection of archeological sites and objects (Figure 1.1). The program is an integral part of the national historic preservation program. Archeological activities can involve projects on Federal and Tribal land as well as federally financed or licensed actions on nonfederal land. Permits are issued under ARPA to regulate archeological work conducted for these projects. Many archeological projects are required under Section 106 of the National Historic Preservation Act (NHPA). In brief, Section 106 requires any Federal agency with jurisdiction over a Federal, federally assisted, or federally licensed undertaking to take into account the effects of the agency's undertaking on properties included in or eligible for the NRHP. The archeological work involves the identification, evaluation, and nomination of historic properties to the NRHP. Though many properties are preserved after discovery, significant archeological sites that are going to be altered or destroyed require recovery, analysis, reporting, and curation. Public participation throughout the Section 106 process is vital to the successful completion of archeological projects.

The long-term management of archeological resources also is an integral element of the Federal archeology program. Federal agencies with these responsibilities actively are protecting archeological sites from looting and deterioration using both law enforcement and conservation techniques. Research is being used to better understand the resources under their jurisdiction. In addition, cooperation between governmental authorities, the professional archeological community, and private individuals aid in this effort. Education and outreach also is becoming an important tool for promoting the long-term preservation of archeological resources.

Abandoned Shipwreck Act (43 U.S.C. 2101 *et seq.*)

Abandoned Shipwreck Act Final Guidelines, 55 FR 50116 (1990) and 55 FR 51528 (1990) and 56 FR 7875 (1991)

American Indian Religious Freedom Act (42 U.S.C. 1996)

Antiquities Act (16 U.S.C. 431-433)

43 CFR 3: Uniform Rules and Regulations Prescribed by the Secretaries of the Interior, Agriculture, and War to Carry Out the Provisions of the "Act for the Preservation of American Antiquities"

Archaeological Resources Protection Act (16 U.S.C. 470aa-470mm)

ARPA Uniform Regulations 18 CFR 1312 (Tennessee Valley Authority), 32 CFR 229 (Department of Defense), 36 CFR 296 (Department of Agriculture), and 43 CFR 7 (Department of the Interior), DOI Supplemental Regulations 43 CFR 7(7), BIA Supplemental Regulations 25 CFR 262

36 CFR 79: Curation of Federally-Owned and Administered Archeological Collections

Archeological and Historic Preservation Act (16 U.S.C. 469-469c)

Historic Sites Act (16 U.S.C. 461-467)

National Historic Preservation Act (16 U.S.C. 470)

36 CFR 60: National Register of Historic Places
36 CFR 800: Protection of Historic Properties
Secretary of the Interior Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716).
Guidelines for Federal Agency Responsibilities, Under Section 110 of the National Historic Preservation Act (53 FR 4727).

Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 *et seq.*)

Reservoir Salvage Act (16 U.S.C. 469)

Figure 1.1. Federal archeology program authorizations, regulations, guidelines.

Between FY 1991-1993 Congress passed legislation with a significant effect on Federal archeology; Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), Intermodal

Surface Transportation Efficiency Act of 1991 (ISTEA), Legacy Resource Management Program (Legacy), and the 1992 amendments to NHPA.

NAGPRA affects archeological investigations, discoveries and curation. The Act delineates a process by which human remains and certain artifacts presently held by Federal agencies, federally assisted museums or other institutions may be returned to Native Americans, Native Hawaiians, and Native Alaskans upon their request. It also gives Native Americans a formal role in decisions about activities carried out on Federal and Tribal lands that may affect culturally significant sites.

Two mandated deadlines under NAGPRA are impacting Federal agencies and the management of their archeological collections. By November 1993 summaries of holdings or collections of unassociated funerary objects, sacred objects, or objects of cultural patrimony are to be compiled. The summaries describe the scope of the collection, the kinds of objects included, where they were found, how and when they were acquired, and their cultural affiliation, where readily ascertainable. By November 1995, an inventory identifying the geographical and cultural affiliation of such items are to be completed. A grant program administered by NPS was authorized to assist Tribes and museums in this effort. However, funds were not appropriated by Congress during FY 1991-1993, which effected progress in fulfilling these requirements.

ISTEA authorized $151 billion in Federal Highway Administration (FHA) funds to construct and maintain highways, bridges, and mass transit facilities. Ten percent of the state grant funds were allotted for transportation facility "enhancement" projects that included the following activities; (1) acquiring scenic easements and historic sites; (2) initiating scenic or historic highway programs; (3) landscaping and scenic beautification; (4) rehabilitating and operating historic transportation buildings and facilities; (5) preserving abandoned railroad corridors; and (6) sponsoring archeological planning and research. Many outstanding projects were funded during FY 1991-1993 that interpreted archeological resources as part of the development of bikeways and trails. ISTEA also generated many Section 106 projects involving archeological resources.

Legacy was authorized in 1991 to provide agencies in the DOD with funds over five years to identify, protect, and maintain natural and cultural resources on land owned by the military or affected by its activities. The program emphasized cooperating with Native Americans and preserving the history

and artifacts associated with the Cold War. Between FY 1991-1993 about $95 million were made available for cultural resource studies.

The 1992 amendments to NHPA will dramatically effect how Federal agencies implement Sections 106 and Section 110 of the Act. Section 110 requires Federal agencies to develop and implement historic preservation programs. The amended provisions set new requirements for agency historic preservation programs that are more consistent with the regulations of the Advisory Council on Historic Preservation (ACHP). The Federal archeology program will be impacted by the increased attention to developing comprehensive preservation programs that include planning, procedures, education, training, and protection issues. Also, agencies are to contribute assistance to the preservation of non-federally owned prehistoric and historic resources and to strengthen partnerships and consultation with States, Indian tribes, Native Hawaiians, local government, and the public.

National Strategy

The Secretary of Interior is looked to as a leader in historic preservation issues. In this role, the Secretary issued a national policy statement on the future direction of archeological preservation (Lujan 1991). The policy, titled *National Strategy for Federal Archeology*, recommended six strategies for the Federal archeology program based on findings in the Secretary's report to Congress for FY 1985-1986 (Keel et al. 1989:53-54) (Figure 1.2). The strategies included; enhancing public education programs, integrating the knowledge gained from archeological studies with general principals of human adaptation and ecosystem management, renewing efforts to battle looting, improving interagency cooperation and information exchange, expanding inventory efforts, and adequately curating collections and records. These strategies are used in this report as a barometer to measure the effectiveness of the Federal archeology program (See Chapter 7).

Involved Departments and Agencies

Numerous Federal agencies conduct activities that are part of the Federal archeology program (Appendix A). The structure and scope of these activities vary by agency mission. Land management agencies with long-term management responsibilities have archeologists on staff who assist managers with carrying out their responsibilities. Agencies primarily involved with permitting and licensing, have fewer,

- **Public Education and Participation:** Federal and other public agencies should provide more and better public education about and opportunities for the public to participate in archeology--Archeology Week celebrations, open houses, tours, volunteer programs, and films. Federal and other public agencies that conduct archeological investigations or manage archeological sites should include public participation and education activities.

- **Public Use of the Archeological Paleoenvironmental Record:** Federal and other public agencies should provide for public use of the archeological record of thousands of years of human adaptation to changing environments. The paleoenvironmental record identifies the conditions in which people have lived and the changes made in society, technology, and human habits in response to changing climate and natural resources; This can help us understand and shape our present responses to changing environments.

- **Fight Looting and Preserve the Archeological Record in Place:** Federal and other public agencies should focus attention on archeological site preservation in place, provide increased law enforcement personnel trained in archeological protection, and use the strengthened Archaeological Resources Protection Act to prosecute looters.

- **Interagency Cooperation in Information Exchange:** Federal and other public agencies must work to improve archeological information exchange at the national, State or regional, and local levels.

- **Site Inventories:** Federal agencies need to find the means to undertake archeological inventories of the public lands. They should also encourage Tribes, States, local governments, private organizations, and individuals to inventory and provide information about the distribution and characteristics of the archeological resources in this country.

- **Curation of Collections and Records:** Federal agencies must systematically preserve the artifacts, other excavated remains, and related records from archeological sites on the public lands they manage or control, and encourage other private and public organizations and individuals to do the same.

Figure 1.2. Objectives of the Secretary of the Interior's National Strategy for Federal Archeology.

if any, staff archeologists and rely on archeological consultants. To analyze and compare their accomplishments in this report, agencies are grouped by their primary missions; these groups are land management, development, and regulatory.

Land management agencies manage vast tracts of land that are geographically diverse and contain hundreds of thousands of archeological resources. These agencies provide research and technical

assistance to the Federal, State and private sector and issue land use permits. They manage many resources, including range, recreation, timber, minerals, watershed, fish and wildlife, wilderness, and cultural resources. Agencies that manage large tracts of land, such as the Bureau of Land Management (BLM), Forest Service (FS), NPS, Fish and Wildlife Service (FWS), and Corps of Engineers (COE) have established agency-wide archeology programs. Agencies with smaller tracts of land to manage, such as Bureau of Prisons (BOP), Coast Guard (CG), and Veteran Affairs (VA) are not widely recognized for their archeology programs. However, unlike the agencies that manage large tracts of land, they can more realistically inventory all their lands. Facilities are usually completely surveyed and long-term management plans are established for the known archeological resources.

Development agencies principally provide financial or technical assistance for projects, such as highways and power lines, on lands that they may or may not own. For example, the Rural Electrification Administration (REA) assists electric and telephone companies in obtaining financing for utility work on Federal, state and private land. The Soil Conservation Service (SCS) develops and carries out a national soil and water conservation program in cooperation with private landowners and other land users in Federal, State, and local government. The agency ensures that cultural resources are protected from SCS-assisted activities. The Federal Highway Administration (FHA) is responsible for the protection of archeological resources during road development and maintenance on land that the agency does not manage. The agency directs funds to state highway departments, which share responsibility for the administration of the program.

Regulatory agencies primarily issue Federal licenses or permits for a wide variety of activities. For example, Minerals Management Service (MMS) manages resources on the Outer Continental Shelf and is responsible for leasing, exploration and development of Federal offshore lands. Office of Surface Mining (OSM) has regulatory authority for the permitting of surface coal mining. These and other regulatory agencies are responsible for protecting archeological sites from regulated activities.

Responses and Data Collection

This report to Congress includes both numerical and narrative data provided by 44 Federal departments and agencies. The data for FY 1991-1993 was collected using a questionnaire to capture a range of program activities authorized under AHPA and ARPA (Appendix B). The questionnaire used

was basically the same as the one used for the FY 1988-1990 report (Knudson, et.al. 1995: Appendix I), except that 5 questions were omitted because either past responses reported no data, the data could be generated from other sources, or the question was unrelated to activities defined by AHPA or ARPA.

Forty-four Federal departments and agencies provided data for FY 1991-1993 (Appendix C). However, agency responses varied by year, with 80% (35) reporting in FY 1991, 75% (33) reporting in FY 1992, and 93% (42) reporting in FY 1993. Agencies did not respond because: (1) the agency had no method to collect the data; (2) the agency had no authority to collect data and; (3) the agency had other priorities that prevented them from collecting the data.

The lack of data from certain agencies has a major impact on the analysis and findings. FS, SCS, FHA, Federal Energy Regulatory Commission (FERC), and Department of Housing and Urban Development (HUD) have archeology programs that, if not measured, can dramatically influence inventory and evaluation figures. Data from FY 1991-1992 particularly are affected by incomplete data or the lack of responses from these agencies. We will continue to work with these agencies in developing methods to better measure their archeological activities.

As with any data collection effort of this magnitude, incomplete data has consistently affected interpretations in past reports and will continue to do so in the future. Knudson, et.al.(1995) attempted to remedy this problem by introducing "correction factors" (1995: Appendix B). Correction factors would be useful, if the quantitative data reported by agencies were precise. However, most data reported are estimates and correcting estimates was not considered a useful exercise for this report. Raw numbers from FY 1988-1990 were used for comparative analysis throughout the report.

In addition, the success and accuracy of this report depend on the quality of agency records. The numerical information presented herein is a general measure of activity rather than a precise calculation. The narrative information helped considerably with evaluating the accuracy of the numbers. Thus, the FY 1993 data is a fair representation of agency programs, while FY 1991-1992 data is less representative.

Summary

The SRC has significant benefits for the Federal archeology program in that it provides both comprehensive and detailed, government-wide information on archeological activities and serves as a measure for assessing the current condition of the program. Information provided during FY 1985-1986 on looting and ARPA law enforcement was pivotal for development and passage of the 1988 amendments to ARPA. The report provides a comprehensive source of data for agencies to collectively or individually approach Congress for support of their respective programs. In addition, agencies can use this information for sharing ideas on how to improve their programs. The data also are useful for researchers who are studying the Federal archeology program and the history of cultural resource management. Generally speaking, the data in this report are comparable to data in previous reports and can be used to analyze historic trends within the program.

The following chapters present the results of the Federal archeology program as defined by AHPA and ARPA. Chapter 2 describes archeology-related activities on Federal and Tribal land, including agency planning and the inventory and management of sites, collections, and associated records. Chapter 3 outlines the accomplishments and costs of permit programs, overview and planning studies, identification and evaluation, data recovery, unanticipated discoveries, and other archeological studies. Chapter 4 describes how archeological information is exchanged among Federal agencies, Tribes, private organizations, avocational archeologists, and other partners in the U.S. and international communities. Chapter 5 describes efforts in archeological protection and law enforcement. Chapter 6 describes the success of education and public outreach programs. Chapter 7 summarizes the accomplishments in the Federal archeology program and provides recommendations for improvement.

2

ARCHEOLOGICAL RESOURCES ON FEDERAL LAND

Introduction

Archeological resources are the material remains of past human activity distributed across the landscape. They can include isolated objects or sites visible on the surface, deeply buried in the earth, or submerged in water. The presence of archeological resources is determined by systematic inventory using surface reconnaissance methods or remote sensing and geophysical techniques for sites that are buried. The material remains and associated records resulting from archeological investigations are conserved and maintained permanently in a museum or suitable repository for further research and public education.

Federal agencies are responsible for the identification, management, preservation, and protection of archeological resources under their jurisdiction. Because archeological resources are non-renewable and finite, preservation-in-place is the preferred strategy to sustain them for future generations. This strategy is not always feasible when competing values of land use and preservation are considered. To find alternatives that balance these values, integrated environmental planning is fundamental. In order to successfully integrate archeological resource management into overall resource planning, Federal agencies must continually improve their knowledge of archeological sites under their jurisdiction. This charge is reinforced in both Section 14(a) of ARPA and Section 110(a)(2) of NHPA, which address the need for comprehensive approaches to planning and the identification, evaluation, nomination, and preservation of historic and archeological resources.

Agency Planning

Federal agencies are required under Section 110 of NHPA to develop and implement a preservation program for historic properties under their jurisdiction. Preservation planning is critical for integrating archeological work with management policies, guidelines, environmental compliance planning and budgeting. Since 1992, Federal agencies have increased their efforts to develop programmatic agreements and cultural resource management plans at national, regional and local levels (ACHP 1991, 1992, 1993).

DOD has been very active in preservation planning, conducting self-assessments and overviews of their national programs. Air Force (AF) received $1.5 million in FY 1992 for generating comprehensive plans for their bases that are being written with the assistance of NPS under an interagency agreement. Bases have begun large-scale inventory programs and are hiring full-time professionals to carry out the plans.

Department of Energy (DOE) facilities are generating cultural resource management plans and scheduling surveys in areas with high potential for archeological sites. Their plans include statistical models for predicting the location and density of sites which is incorporated with other natural resource information in a Geographical Information System (GIS) database. Some facilities have completed surveys on all their lands and are developing treatment strategies for known sites. VA is compiling plans for their medical center facilities and are scheduling surveys for older facilities that were not previously inventoried. The National Aeronautics and Space Administration (NASA) is conducting an environmental self-assessment of each field installation to evaluate the effect of management policies on cultural and natural resources. The National Oceanic and Atmospheric Administration (NOAA) initiated a historic context study for the National Marine Sanctuaries to assess the potential impacts to archeological sites. NPS is developing regionally-based plans and schedules to inventory units of the National Park System for archeological sites. In FY 1992, NPS received an additional $1.1 million for archeological inventories; in FY 1993 it received an additional $1.0 million.

Development and regulatory agencies are improving plans and coordination for Section 106 projects. SCS drafted an agency-wide revision of cultural resource policy and procedures with the National Council of State Historic Preservation Offices and ACHP. In addition, they are conducting a national assessment of site conditions to measure the impact of their management policies on privately-owned lands. OSM also is working on a national programmatic agreement with the National Council of State Historic Preservation Offices and ACHP that will serve as a basis for developing procedures for State-issued permits to comply with Section 106. The agreement is being finalized after a four year court battle which determined that OSM must protect archeological resources from the harmful effects of strip mining.

MMS completed a 5-year programmatic environmental impact statement for oil and gas lease sales within the Outer Continental Shelf. The statement included an assessment of the potential for historic shipwrecks and for inundated prehistoric archeological sites within sale areas. They accelerated their

program to identify and protect submerged archeological resources from the affects of oil and gas development. Companies holding oil and gas leases on the Outer Continental Shelf are required to collect geophysical data to evaluate the potential for archeological sites and to avoid areas where the potential is high. The information is managed in a GIS system that MMS uses to predict the likely presence of historic shipwrecks in the Gulf of Mexico.

Agreements

Agencies frequently enter into agreements with the State Historic Preservation Office (SHPO) and ACHP to develop historic preservation programs under Section 110. They also enter such agreements to implement mitigation and data recovery plans for Section 106 projects. Mitigation is a process by which to negate or minimize effects to historic properties. Data recovery is the scientific recovery of archeological resources where it is not practical to protect an archeological property in place. Between FY 1991-1993, ACHP reported having entered into 4,169 agreements involving data recovery and 1,775 Memorandum of Agreements with Federal agencies (ACHP 1991, 1992a, 1993). In addition, they entered into 11 programmatic agreements--for example, authorizing geophysical exploration activities on BLM lands in Wyoming, Federal Emergency Management Administration disaster assistance following the 1993 Midwestern floods, regulatory program reviews with COE and the FERC, and to satisfy requirements of Section 106 for the Bureau of Reclamation (BOR) Animas-LaPlata Reservoir Project (Case Study 2.1).

Inventoried Federal and Indian Land

By the end of FY 1993, agencies reported managing nearly 734 million acres, about 32% of the nation's total surface area (Tables C.1-C.2). For the same period the Government Accounting Office (USGAO 1995) reported that the number of acres owned by the Federal government was 650 million acres. The acreage differences between managed and owned land is related mostly to Federal management responsibilities for easements, right-of ways and other conditions on non-federally owned land.

Land management agencies reported managing 680 million acres, or about 93% of the total area under Federal and Tribal management (Table C.1). BLM, FS, FWS, and NPS are responsible for most

Case Study 2.1. Animas-LaPlata Reservoir Project

Agency: Department of the Interior, Bureau of Reclamation
Issue: Section 106 planning and coordination with Native Americans
By Warren F.X. Hurley, BOR Western Colorado Area Archeologist

The proposed Animas-LaPlata Project (ALP) near Durango, Colorado would involve the diversion of water from the Animas River to a reservoir in a dry basin between the Animas and La Plata Rivers. The water would be used for municipal and industrial purposes, as well as irrigation in the La Plata River and Mancos River drainages. The ALP is a cornerstone of the Colorado Ute Water Rights settlement agreement.

The ALP has the potential to affect up to 1,500 archaeological sites across approximately 80,000 acres of Federal, Indian tribal, and private lands in Colorado and New Mexico. Many of the sites are prehistoric Puebloan habitations.

In support of the Final Environmental Impact Statement for ALP, a Traditional Cultural Properties (Ethnographic) survey of the project area was completed by Northern Arizona University and SWCA, Inc. under contract to Reclamation. Of primary concern to the Puebloan Tribes of New Mexico and Arizona is the impact that ALP will have upon Puebloan habitation sites and the burials that they contain. The Puebloans view these sites as an important part of their history because they are what remains of the homes of their ancestors, represent their early patterns of migration, and are likely to contain burials. Furthermore, several southwestern non-Puebloan tribes also expressed concern about these threatened archaeological sites from an ethnic, or pan-Indian perspective. Therefore, Reclamation is recommending that intact Puebloan habitations are eligible to the National Register of Historic Places as Traditional Cultural Properties under Criterion A (that they contribute to the broad patterns of [Puebloan history] as well as archaeological sites under Criterion D (that they are likely to yield information important in prehistory or history).

The ALP is particularly problematical for the Tribes since, although they object to the disturbance of sites and burials, they don't want to interfere with the fulfillment of (Southern and Ute Mountain) Ute Indian water rights.

In 1991, Reclamation, in consultation with the Advisory Council on Historic Preservation and the Colorado and New Mexico State Historic Preservation Officers, executed a Programmatic Agreement to satisfy the requirements of Section 106. However, in response to the 1992 amendments to NHPA the Programmatic Agreement is presently being amended to involve Native Americans in the treatment of Traditional Cultural Properties. Additionally, a Memorandum of Understanding is being circulated among interested Tribes to ensure the proper treatment and disposition of Native American human remains and cultural items.

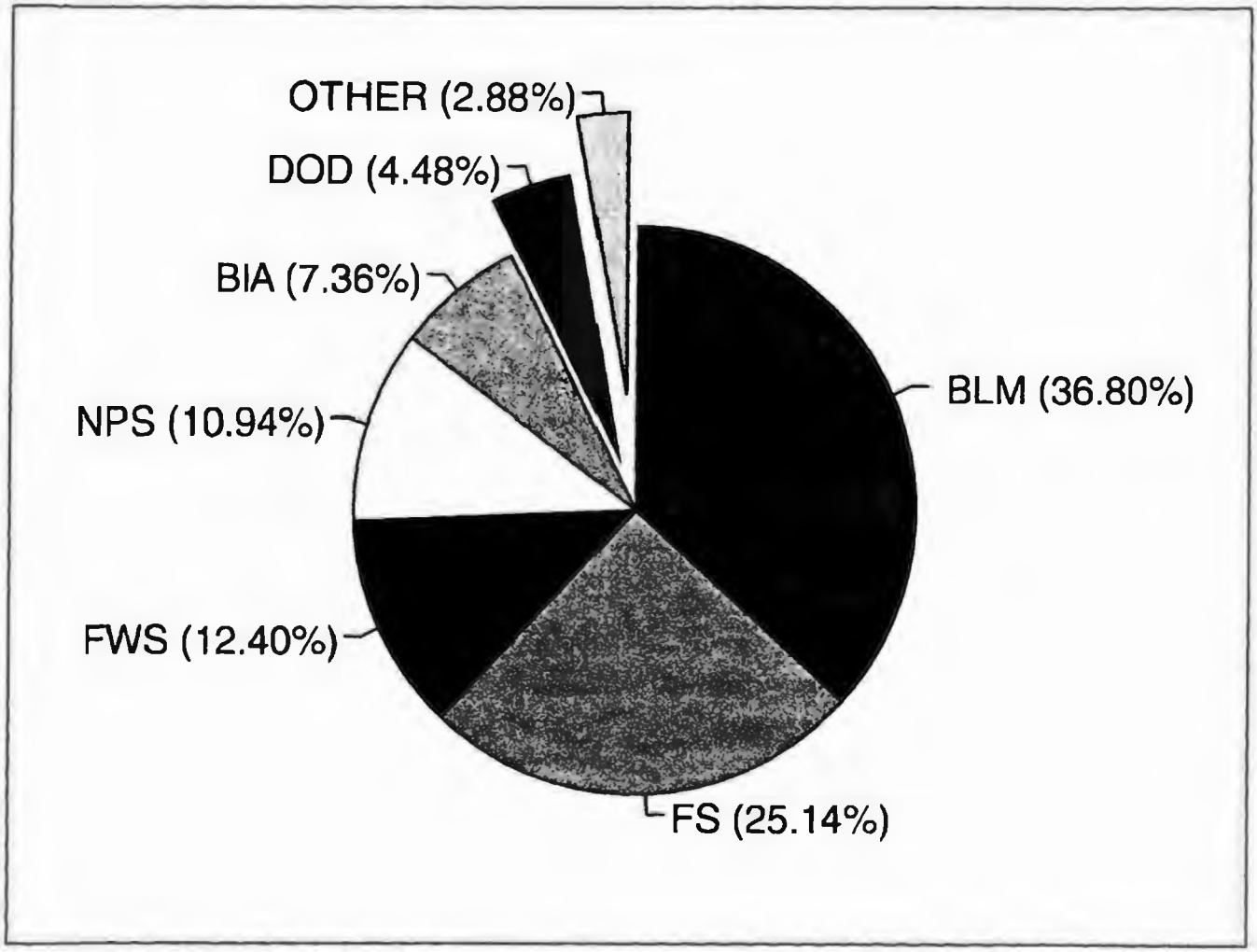
Archeological resources located in the Animas-LaPlata Reservoir Project
Warren Hurley/Bureau of Reclamation

of these acres (Figure 2.1). Development agencies managed around 54 million acres (Table C.2), principally by the Bureau of Indian Affairs (BIA) with nearly 52 million acres of it being trust land for individual Indian allottees or their descendants. BIA does not own or control archeological resources on Indian trust lands except to the extent provided for under ARPA.

Site inventory is the basic method to determine the location of archeological sites. The amount of Federal and Indian lands inventoried by the end of FY 1993 was 43.2 million acres or 6% of the land base (Tables C.1-C.2). The figures for FY 1991-1992 are substantially less; 34 million and 26.8 million respectively. This large discrepancy with FY 1993 data probably is attributed to the lack of data reported for those years rather than a sharp increase in survey activity.

Federal and Indian lands have been inventoried at different levels of coverage. Areas of full coverage have been thoroughly examined to identify, with reasonable certainty, all archeological sites. This level of information is needed in an area selected for disturbance to assess effects to archeological sites. Areas

Figure 2.1. Percent of public land managed and held in trust by Federal agencies and Departments at the end of FY 1993.



that are partially surveyed are used to develop overviews and predictions of potential site locations. These areas might require additional survey and site investigation to collect more detailed information. By the end of FY 1993 areas of full coverage totalled 24.6 million acres, or 57% of the total inventoried acres (Tables C.1-C.2). Partially inventoried areas amounted to 18.6 million acres, or 43% of the total inventoried acres. This fairly equal mix of survey intensity is consistent with information collected from agencies in prior years. After accounting for the level of survey coverage, only 3% of all Federal and Tribal lands have been thoroughly investigated to identify all archeological sites.

Land management agencies accounted for 42.8 million (99%) of the acres surveyed between FY1991-FY 1993 (Table C.1). Yet, a large portion of the land they manage remains unsurveyed (93%). BLM reported 10.7 million acres surveyed followed by FS (9.7 million), NPS (6.9 million), Department of Army (DOA) (4.1 million), FWS (3.7 million), and COE (3.3 million). These agencies combined account for 89% of the acres surveyed on Federal and Indian lands (Figure 2.2). Those agencies with the most acreage surveyed do not necessarily have the highest percent of their land surveyed. The DOD Services have surveyed the highest percentage of land; U.S. Navy (USN; 49%), COE (46%), DOA (35%), and Air National Guard (ANG; 32%). DOD Services are inventorying more land in order to fulfill survey schedules identified in installation Cultural Resource Management (CRM) plans. The AF plans to completely inventory their lands by 1999. These type of initiatives and the fact DOD manages about 5% of all Federal and Tribal lands results in these high figures for percent of land surveyed. In contrast, BLM and FWS have surveyed only 4% of their lands followed by FS (6%) and NPS (9%)(Figure 2.3).

Land management agencies with the largest land base are making little headway with comprehensive surveys of their lands (Figure 2.3). The numbers, however, do not reflect the increased Federal activity with regional surveys authorized under Section 14 of ARPA and Section 110 NHPA. Federal agencies are to develop plans and schedules for surveying lands under their control to determine the nature and extent of archeological resources. Regional surveys provide a broad view of the type and nature of resources across the landscape, and with this information managers can develop better long-term management goals for resources in these areas. Another strategy is to focus on areas that may contain significant resources which might not be discovered for decades. Federal agency efforts in this area are described below.

Figure 2.2. Percent of total acres surveyed by Federal agency at the end of FY 1993.

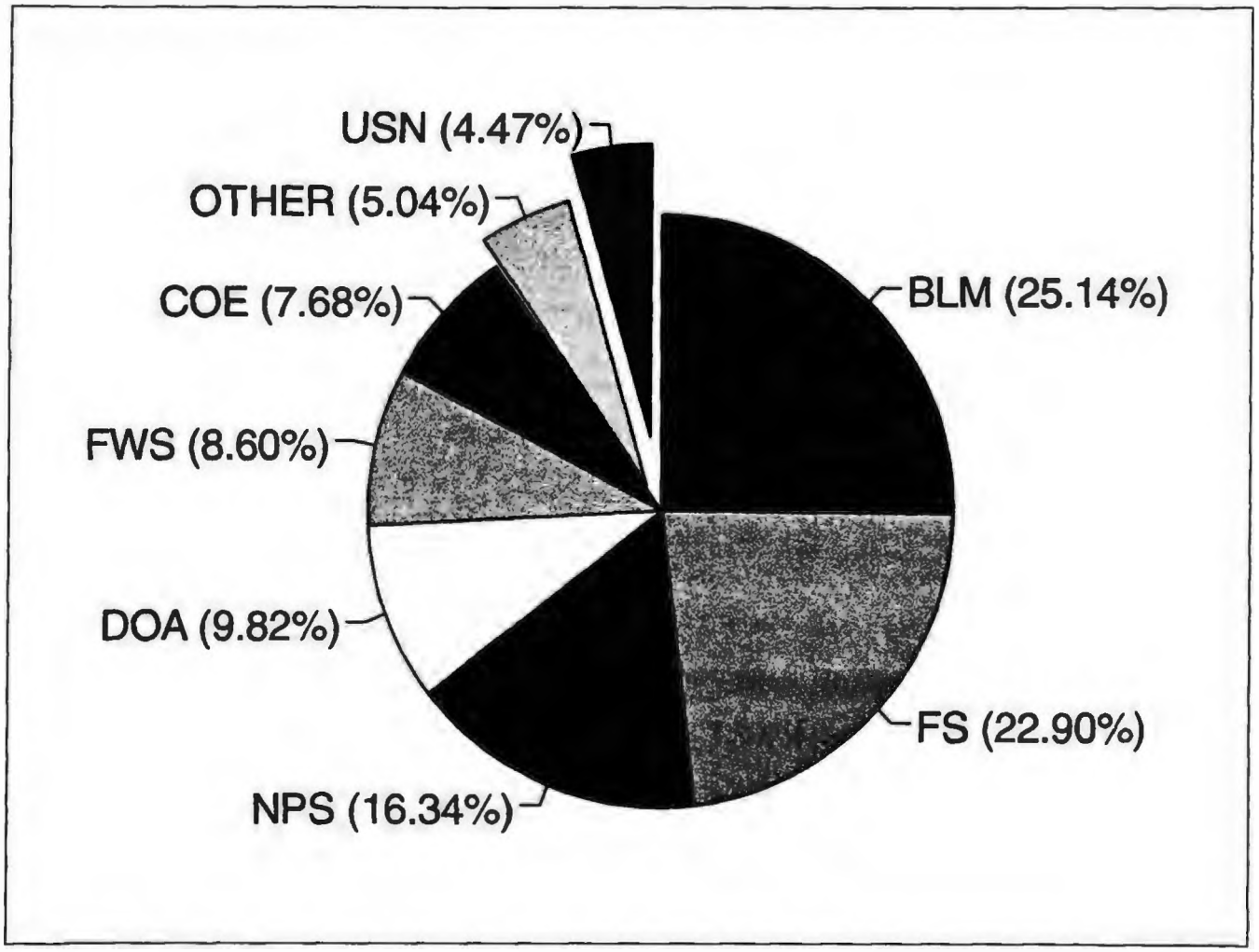
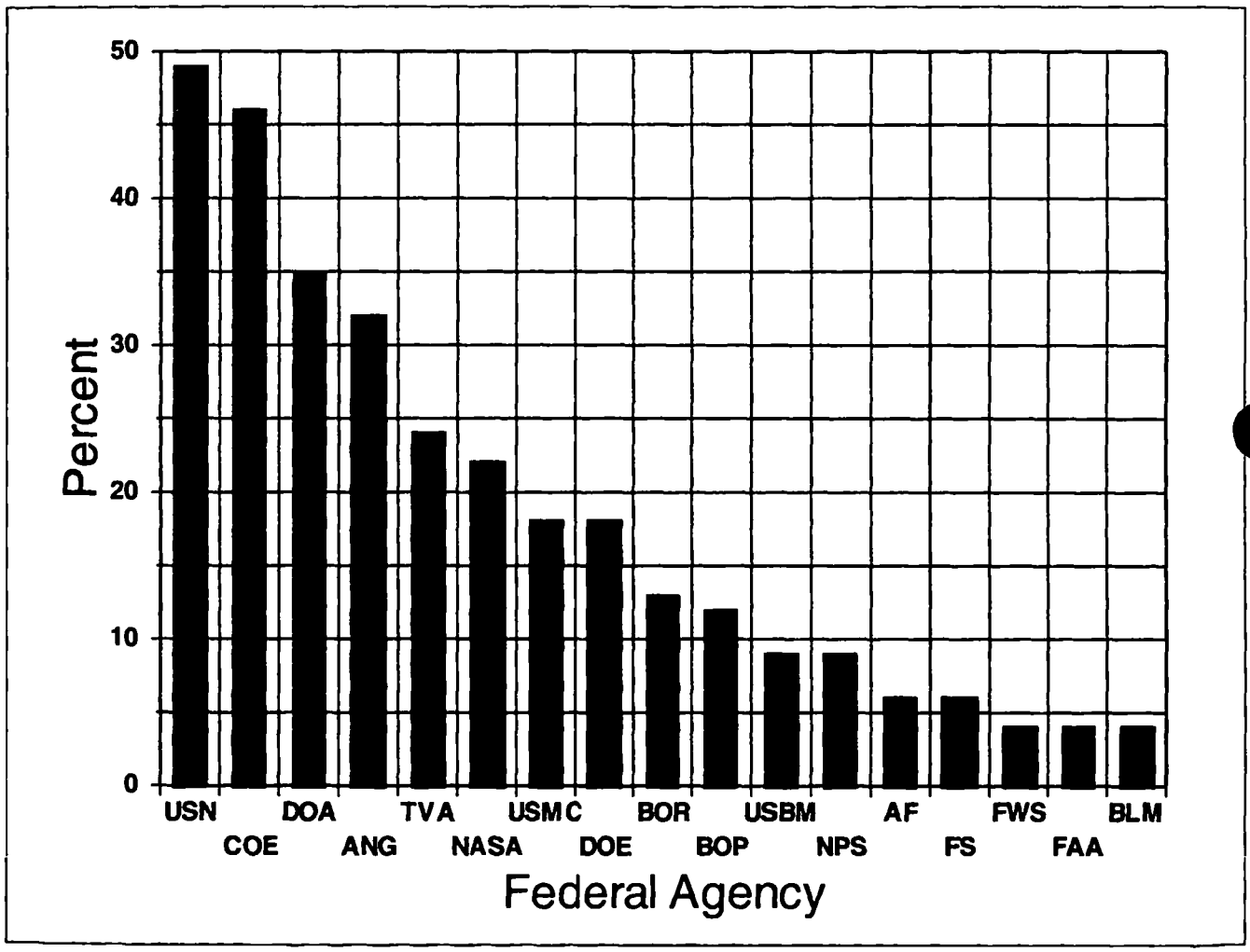


Figure 2.3. Percent of managed acres surveyed by land management agency at the end of FY 1993.



NPS finalized and approved its Systemwide Archeological Inventory Program during this reporting period. The goal of the program is to conduct systematic, scientific research to locate, evaluate, and document archeological resources on NPS lands. The program establishes systemwide requirements, standards, and priorities to assist in planning, programming, funding and conducting inventories. Each Regional survey plan is being developed to describe and assess the status of inventories in the parks and to establish strategies and set targets for performing inventories in the future. Parks have established multi-year survey plans with budgets that ensure their completion.

Each BLM State Office has identified a priority list of areas with potentially significant archeological and historic resources and scheduled them for survey. Upon completion, the information is used to produce cultural resource management plans. However, few areas have been inventoried to date because of reductions in agency base funding. In FY 1993, BLM State Offices inventoried about 40,000 acres, or 7% of their total inventory. BLM is also conducting intensive surveys in wild and scenic river corridors, wetlands, and wilderness as part of integrated resource planning in these special feature management areas.

The Tennessee Valley Authority (TVA) completed full coverage survey on about 38% of its reservoirs to provide resource information for reservoir planning. BOR is developing schedules to inventory all their lands which will be followed by evaluation sites for the NRHP. The agency also is intensively surveying recently-acquired lands and is examining selected reservoirs for traditional cultural properties. NOAA is conducting resource inventories (includes archeological survey) of their sanctuaries.

DOA is developing survey plans and full coverage inventories of installations for terrestrial and submerged archeological resources. Installations are encouraged to divide their land holdings into high, medium, and low probability areas. For example, Ft. Leonardwood is surveying 4,000 acres of high probability areas and evaluating 10 sites a year through 1999. Several AF installations are scheduling full coverage surveys prior to preparing cultural resource management plans.

DOE facilities are developing plans to verify the location of all known sites and to systematically survey areas of high and low site probability. For example, the Idaho National Engineering Lab completed a preliminary predictive model of prehistoric sites and is monitoring known significant sites.

Land management agencies are expanding regional survey programs to increase their total inventoried acres. NPS developed an excellent model for building a base program using multi-year planning and budgeting strategies. Key agencies -- BLM, FS, COE and FWS-- with large land bases and a diverse resource base should accelerate their efforts in this area. Survey techniques such as sampling, predictive models, overviews, and remote sensing, are excellent approaches for broad-scale survey that can produce useful information on the geographic distribution of archeological resources.

Development agencies manage about 8% of Federal and Indian lands. Only a small portion of this area (2.05 million acres) is federally owned, and most of it is under BIA jurisdiction. The remaining area (51.9 million acres) is trust land. BIA and Health and Human Services (HHS), the only agencies in this category to provide data, reported that about one percent of this area has been surveyed (Table C.2).

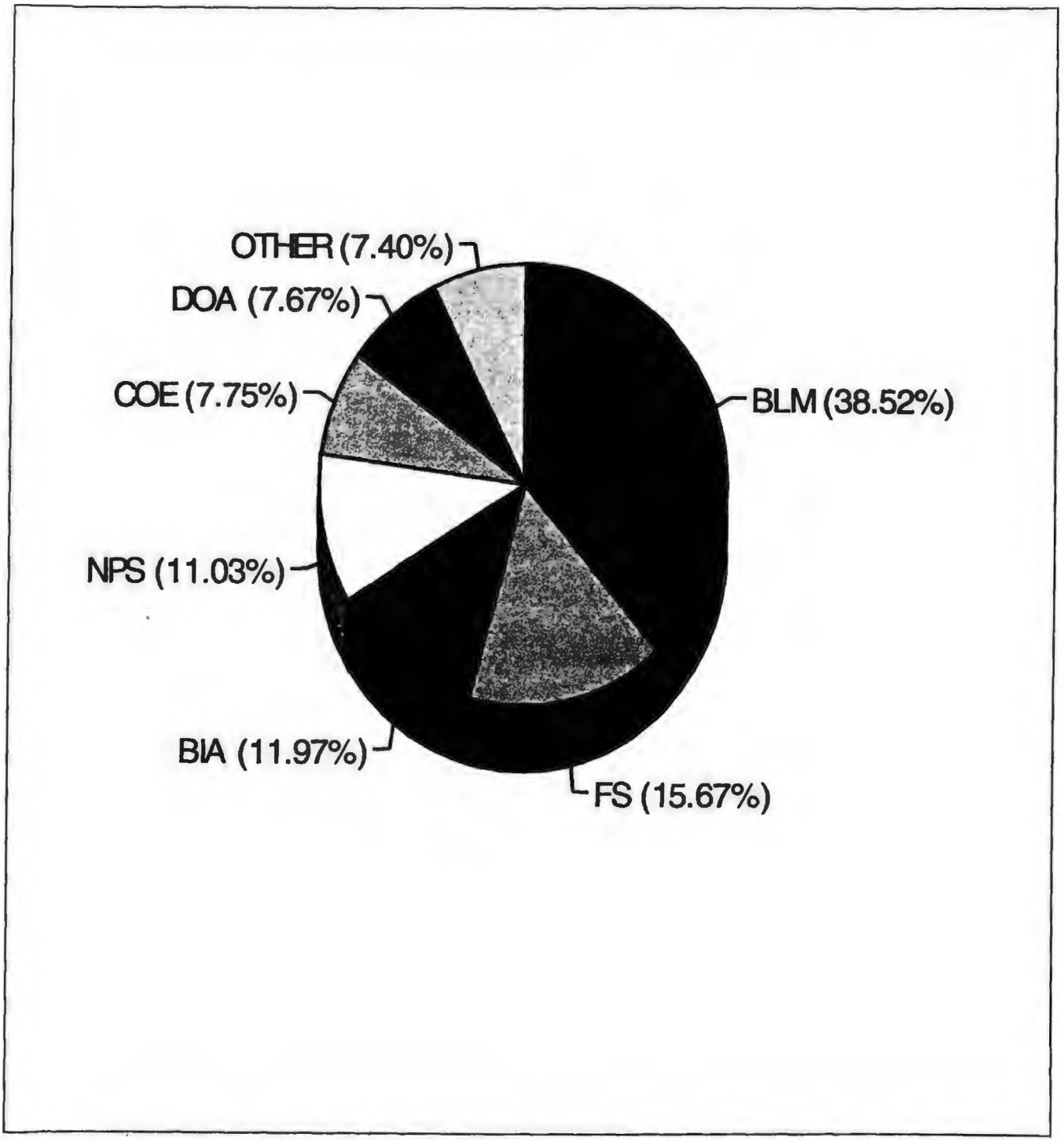
OSM is the only regulatory agency that reported on inventories carried out under Section 110. Several states are working with the Crow, Hopi, and Navajo tribes with inventory, evaluation and data recovery projects in conjunction with reclamation activities on Federal, State, Indian and private lands (Table C.3).

Archeological Resources

Agency estimates of the number of archeological sites under their management including Federal, Indian and federally-impacted lands range from 6 to 7 million. Only a small percentage of these potential sites have been identified to date. By the end of FY 1993, the number of known sites reported on Federal land totalled 466,970 (Tables C.4-C.6). The number of sites was substantially higher than the previous two fiscal years (FY 1991: 365,448; FY 1992: 388,787). As mentioned for inventory acres, this difference is accentuated by the lack of reported data for these years. Known sites have increased by 30,000 since FY 1990. BLM managed the most sites (38.5%) followed by FS (16%), BIA (12%), and NPS (11%) (Figure 2.4).

Of the known sites identified by the end of FY 1993, the majority (67%) have not been evaluated for the NRHP (Tables C.7-C.8). Site evaluation on the remaining sites have produced the following results: (1) 6% listed on the National Register, (2) 9% eligible for the National Register, (3) 9% evaluated but insufficiently for determination of eligibility, and (4) 9% determined ineligible.

Figure 2.4. Percent of known sites managed by Federal agnecy at the end of FY 1993.



Land management agencies managed 88% (410,889) of the known archeological sites by the end of FY 1993 (Table C.4). BLM (179,991), FS (73,224), NPS (51,358), COE (36,193), and DOA (35,828) accounted for most of this total (Figure 2.4). The number of unevaluated sites was high, particularly for the agencies with a large land base --BLM (75%), FS (68%), NPS (61%), DOA (55%), and COE (51%) (Table C.7).

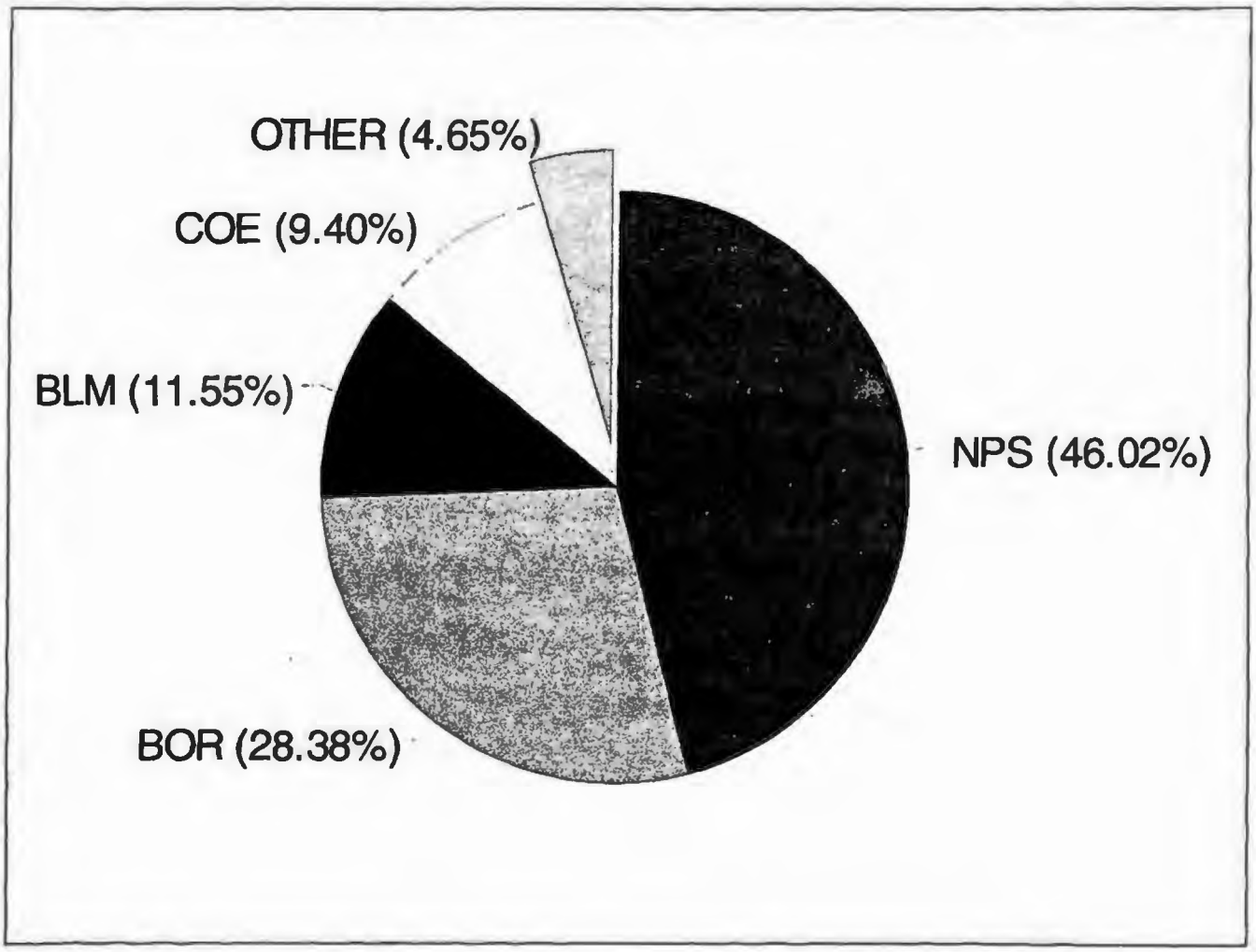
NPS has the highest percentage of its known sites listed on the NRHP (25%) compared to similar large landholders, such as BLM (2%) and FS (1%) (Figure 2.5). Most agencies have fewer than 15% of their known sites determined eligible. Agencies varied considerably regarding the percentage of sites that were evaluated, but not thoroughly enough to determine eligibility. For example, FWS (79%) and DOE (76%) had high percentages, while BLM (0%), NPS (10%), FS (13%) and COE (16%) had the lowest percentages. AF and BOR were the only agencies with 20% or more of their sites determined ineligible.

Most development agencies provided little information about the eligibility status of sites (Table C.8). These agencies do not have long-term management responsibility for sites located on non-agency land, where most of their activity occurs. Consequently, the agencies do not maintain information about sites. However, more information is needed from them on sites under their ownership. BIA and HHS reported 12% (56,081) of the total known archeological sites reported by Federal agencies by the end of FY 1993 (Table C.5). These two agencies accounted for 17% of the unevaluated sites and 3% of the sites in each of the other eligibility categories. The percentage of unevaluated sites under their management was higher (92%-93%) than for the land management agencies.

A principal goal of NHPA is to identify significant sites that qualify for the NRHP. National Register status provides a legal framework and formal procedures for protecting significant sites when they are being threatened by a Federal program or project. The preferred treatment for National Register sites is preservation in place and retention of their significant qualities. The low percentage of archeological sites (6%) listed on the National Register has remained constant over time. This trend does not reflect that fewer sites are being determined eligible, to the contrary, there is a higher ratio of eligible sites to ineligible sites (3:2).

Two factors are contributing to the low rate of sites listed on the NRHP. First, archeological sites determined eligible for the National Register between the agency and SHPO are being mitigated through

Figure 2.5. Percent of sites listed on the NRHP by Federal agency at the end of FY 1993.



data recovery rather than being protected in place. In Section 106 jargon, these projects commonly are referred to as having no adverse effect. Since the archeological resources are being scientifically recovered from their physical location, they are not being nominated and listed on the NRHP. Secondly, agencies are not completing the nomination process after receiving a formal determination of eligibility from the Keeper of the National Register. The Keeper is charged with reviewing nominations and listing sites on the National Register. Once sites are determined eligible, agencies treat these sites as if they were listed on the National Register promoting preservation in place and protecting them. With these protection measures in force, some agencies do not perceive a need to complete the nomination process.

Another apparent trend is the high number of unevaluated sites. By the end of FY 1993, the ratio of unevaluated sites to National Register-evaluated sites was 4:1, a slight increase from FY 1990 (3:1). A number of reasons may explain this increasing ratio. Agencies utilize avoidance strategies rather than evaluate large numbers of sites in the area of an undertaking, particularly if the undertaking can be modified. In addition, site evaluation, which generally involves some level of excavation, can be expensive and time consuming. Many agency projects do not have adequate funds to undertake this work. Consequently, site avoidance is the preferred treatment over excavation and data recovery.

Site avoidance is a passive management strategy that considers site identification as the means to an end to help complete environmental compliance requirements. Sites, once located, fall into the category of being potentially eligible for the National Register. This strategy does not generate archeological information which is needed to determine site significance and knowledge about the resource base. This information would lead to better planning and management decisions. Agencies need to actively study and research the numerous unevaluated archeological resources. Thematic evaluations are an excellent alternative to site-specific project evaluations. Thematic studies provide the historic context for focusing questions of significance on groups of similar sites, minimize the collection of redundant data, and reduce evaluation costs. Non-destructive evaluation techniques offer another promising avenue. Geophysical methods are being used more effectively to identify surface and subsurface archeological information for assessments of site significance without extensive excavation plans.

The 1992 amendments to NHPA established that properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined eligible for inclusion on the National Register. Traditional cultural properties might be archeological sites or contain them.

BLM in California nominated Tecate Peak, the first property ever listed solely by virtue of its historic religious significance to Native Americans (Case Study 2.2).

National Historic Landmarks

The National Historic Landmark (NHL) program lists the preeminent historic and cultural resources of the nation. By the end of FY 1993, the Secretary of the Interior had designated 2,081 sites as NHL's (NPS 1993). BLM manages the highest number (22) reported by Federal agencies. In the reporting period, 11 federally-owned properties were designated as NHL's. Properties with archeological resources included the Clover site in West Virginia (FWS), Nauset Archeological District in Massachusetts (NPS), Minisink Historic District in Pennsylvania (NPS), and the African Burial Ground in New York (General Services Administration; GSA).

On behalf of the Secretary of Interior, NPS monitors the condition of NHL's and reports its findings to Congress (Section 8 of the General Authorities Act of 1970, as amended in 1976). In FY 1993, 73 NHLs with archeological resources were reported as endangered or potentially endangered (NPS 1993: 29-129). This number represents 21% of the damaged and threatened NHL's.

Federal agencies are wholly or partly responsible for 25 NHL properties with archeological resources that were reported as endangered or potentially endangered in 1993 (NPS 1993: 29-129)(Figure 2.6). It should be noted that in multiple-ownership situations, the threat or damage may not be occurring on the federally-owned portion. Also, NHL's comprised of buildings and structures with no reference to archeological deposits that were being threatened or damaged are not included in Figure 2.6. These properties may have associated archeological deposits that were not identified in the NHL nomination.

The natural and cultural threats to the archeological value of NHL properties included severe site erosion, damage from agricultural activities (eg. grazing, deep plowing), overuse by visitors, off-road vehicles, looting, and vandalism. Erosion and vandalism are the most common threats (NPS 1993: 25).

Case Study 2.2. The Tecate Peak National Register property.

Agency: Department of the Interior, Bureau of Land Management
Issue: Nomination of sacred sites to the National Register
By Russel Kaldenberg, California BLM State Archeologist

Tecate Peak is the first property ever included in the National Register solely by virtue of its historic religious significance to Native Americans. The importance of Tecate Peak (known to Native Americans as Kuchamaa), and Little Tecate Peak, lies in their extreme religious and spiritual importance to the Kumeyaay People. In particular, Kuchamaa holds special significance because it is where the shamans obtained their power and knowledge, and where initiates were brought into the shaman (spiritual/religious) order. Since time immemorial to the present day these mountains have also served as places to hold sacred dances, ceremonies, ancient sacramental acts, and to receive healing and spiritual cleansing.

These mountains also act today as a cultural link with the Kumeyaay ethnic past and their religious heritage. Parallels have been drawn comparing the Native American view of Kuchamaa to the Christian respect for a cathedral, as both represent places of great religious importance.

Contemporary Native American religious activities on Tecate Peak have become somewhat expanded from that of the past. Whereas formerly only shamans and their initiates were allowed on the summit, today the summit is open to all Kumeyaay who feel worthy of involving themselves with the spiritual power of Tecate Peak. Kumeyaay visits to the mountain are for the purposes of praying, spiritual cleansing, and other religious activities. Though religious practices have diversified, the importance of the mountain has not lessened.

The BLM's California State Office designated 355 acres at Tecate Peak and 269 acres at Little Tecate Peak as an outstanding natural area for the protection of Native American religious heritage. This area is not available for mineral material sales or livestock grazing, and motorized vehicle use is limited to specified routes. Plans are underway to acquire and add 422 acres to this designation and to relocate the existing communication site facilities on Tecate Peak.

[illegible] Peak
National Register of Historic Places/National Park Service

State	Site	Owner(s)
Alaska	Cape Krusenstern	BIA,BLM,NPS,Private
	Eagle Historic District	BLM,State,Local,Private
	Yukon Island Main site	FWS,Private
Arizona	Awatovi Ruins	BIA,Tribal
	Kinishba Ruins	BIA,Tribal
	Old Oraibi	BIA,Tribal
	Yuma Crossing	BOR,Tribal,State,Local,Pvt.
California	Bodie Historic District	BLM,State,Local,Private
	Yuma Crossing	BOR,Tribal,State,Local,Pvt.
Colorado	Lowry Ruin	BLM
Iowa	Ft. Des Moines Provisional Army Officer Training School	DOA,State,Local,Private
Hawaii	Honokohau settlement	NPS,State,Private
	Puukohola Heiau	NPS,State
Idaho	Fort Hall site	BIA,BOR,Tribal
Montana	Virginia City Historic District	BLM,State,Local,Private
Nebraska	Palmer site	BOR,Private
Nevada	Virginia City Historic District	BLM,State,Local,Private
New Mexico	Abo	NPS
	Big Bead Mesa	BLM,FS
	Manuelito Complex	BIA,Tribal,State,Private
	Pecos Pueblo	NPS
	San Lazaro	BLM,Private
South Dakota	Molstad village	COE,Private
Tennessee	Shilo Indian Mounds	NPS
Utah	Alkali Ridge	BLM
Wyoming	Medicine Wheel	FS

Figure 2.6. List of NHL properties with archeological resources under Federal ownership that are damaged or threatened (Source: NPS 1993).

Site Conservation

Site conservation is becoming the preferred mitigation alternative for treating archeological properties. The incessant destruction of the archeological data base from development, looting, and natural deterioration is creating a need to find effective, in-place treatment methods as alternatives to data recovery, which is in itself a destructive method. In-place preservation encompasses more than site avoidance; it requires a commitment of resources to offset manmade and natural deterioration. Natural deterioration is a major factor in the disturbance and destruction of sites. The cumulative effects of natural disturbances will diminish the significant information value of resources, if left untreated. Federal agencies are experimenting with different conservation strategies to mitigate adverse impacts on sites.

Some agencies have research laboratories and experimental stations that focus on site conservation methods and techniques. COE is very active in this field at their principal labs, including the Engineer Waterways Experiment Station, the Cold Regions Research and Engineering Laboratory, and the Construction Engineering Research Laboratories. For example, they are conducting studies about impacts to archeological sites exposed during the drawdown of reservoirs, with bank stabilization on the Apalachicola Fort site in Alabama, and with erosion control measures at Moundville and the Fort Toulouse site in Alabama. BLM established a rotating team of conservation specialists that assist field offices with conserving threatened resources. For example, on the Moab District in Utah, the team of specialists completed a study and evaluation of pictographs, Freemont petroglyphs, and Ute petroglyphs in Barrier Canyon and developed methods to remove graffiti and patch bullet holes.

Information on efforts to stabilize archeological sites is being collected and disseminated through the National Clearinghouse for Archeological Site Stabilization (Thorne 1991: 5). The Clearinghouse is maintained by the University of Mississippi under a partnership with NPS and TVA. This computerized database is an annotated bibliography of technical studies and case histories. In 1992, the COE Waterways Experiment Station compiled an annotated bibliography of COE studies pertinent to planning and designing archeological site protection projects. This bibliography was published in their *Archeological Sites Protection and Preservation Notebook*, which contains a technical notes series that describes various treatment strategies. In 1992, the technical notes included information on off-road vehicle impacts, intentional site burial, stabilization using retaining walls, shoreline erosion control using revegetation and

floating breakwater, scale modeling of impacts and protective structures, and experiments on moss removal from pictographs.

Archeological Collections and Associated Records

Federal agencies are responsible for the management and preservation of their archeological and paleontological collections and records. Records include both the printed material associated with the archeological project and the repository's inventory of the collections. Agencies maintain their collections in numerous ways. Collections may be in a Federal repository under agency administration or interagency agreement, transferred to another Federal agency or permittee to provide curatorial services, or under contract or agreement in a state or private facility. Regardless of the location of the collections, agencies are responsible for the long term care of materials and records generated by their projects.

Most agencies are unsure about the location and number of their archeological collections. Few agencies own curatorial facilities or have staff to care for the materials. Most agencies lack a data management system to maintain information about the collections and associated records. Frequently, the contracts or permits for archeological projects are not inspected to assure that curation stipulations are properly completed. In some cases, agencies have found contractors storing materials in unsecured conditions. For example, the Hoosier National Forest almost lost collections that were being sold at a public auction after an archeology contractor went bankrupt and the materials were transferred to an auction house (Case Study 2.3). Agencies are beginning to systematically identify the location and number of their collections.

Procedures and guidelines for Federal agencies to preserve collections and associated records are outlined in *36 CFR Part 79, Curation of Federally-owned and Administered Archeological Collection.* Repositories must possess the capability to provide adequate long-term curatorial services and to maintain administrative records on the disposition of each collection. Agencies are directed to evaluate the adequacy of the facility to maintain the integrity and research value of the collections, and their availability for study, loan and use for exhibits, teaching, and interpretation. Agencies are beginning to assess the condition of collections by conducting onsite inspections of curatorial facilities.

Case Study 2.3. Public archeological collection saved from auction block at the Hoosier National Forest

Lead Agency: Department of Agriculture: U.S. Forest Service
Issue: Care of public archeological collections
Excerpt from McManamon 1990

Thanks to alertness, quick action, interagency cooperation, and good detective work, government archeologists in south central Indiana have rescued a large and valuable cache of artifacts and documents from the auction block. How the artifacts and documents reached the auctioneer's hands is an interesting, but unfortunate, tale. What is even more distressing is that the incident may be only a single instance of a more widespread problem, the inadequate curation of archeological collections and documents.

Sometime this past spring, the manager of a public storage facility in Bloomington took possession of the contents of a storage unit when the owner of the stored goods, Resource Analysts, Inc. (RAI), failed to make the rent payments. He then sold the items--boxes of field notes, maps, photographs, reports, and artifacts--to a local auctioneer.

Fortunately, the auctioneer didn't realize the nature of the collection. He contacted a geologist from the U.S. Geological Survey to assess the value of his "rocks". The geologist recognized immediately the significance of the materials and notified the State Historic Preservation Officer.

Hoosier NF archeologist Ruth Brinker and her team discovered that RAI had been a private consulting firm owned by Dr. John T. Dorwin. Dorwin had been the manager of the Bloomington branch office of Soil Systems, Inc. until 1980 when he purchased the business and changed its name to Resource Analysts, Inc. Both firms had done archeological projects under contract to various State and Federal agencies. Most of the artifacts and other materials recovered were from those contract projects.

The auctioneer refused to relinquish control, but agreed to permit an inventory of the collection under the condition that the State move the cardboard boxes and map tubes from his auction barn to an old dirt-floored storage shed on his property. During the subsequent inventory, items were sorted by ownership or jurisdiction. Seventeen agencies were identified, with projects in 12 states. Most of the items were from projects sponsored by the Forest Service, U.S. Army Corps of Engineers, and State of Indiana. Armed with this information, the negotiations between the Forest Service, Corp of Engineers, and National Park Service, and the auctioneer's attorney began in earnest. Finally, on May 15, the auctioneer agreed to relinquish the materials. Forest Service and Corps of Engineers archeologists worked out the logistics of transporting and sheltering the collection.

This situation in the Midwest underscores the need for greater attention to the proper curation of public archeological collections, both the excavated remains and associated objects.

The Interagency Federal Collections Working Group was established in 1992 to address Federal curation issues. This group is composed of 28 agency representatives whose mission is to facilitate communication between Federal collections managers and encourage consistent Federal policies on the care of federally associated museum collections. They launched a survey of non-Federal repositories concerning their holdings of federally-associated collections (Interior Museum Property Program 1993:1). The survey will gather information on the number of cultural (art, history, archeology, ethnology, and document) and vertebrate paleontology collections at over 13,000 institutions. NPS is coordinating the survey which will be reported in FY 1994.

In 1990, the Department of Interior (DOI) formed the Museum Property Management program "to develop standards, policies, and procedures for museum property; assess the size, preservation and protection of their museum property holdings; and develop Bureau plans and cost estimates to correct deficiencies and gain accountability for museum property" (Interior Museum Property Program 1994). NPS is the lead agency in this initiative. By 1993, the program revised the *Departmental Manual* (Chapter 411) (USDI 1993a, 1993b, 1993c), developed the DOI *Museum Property Handbook* and are assisting Bureaus, through technical assistance and training, in implementing the new requirements. Bureaus within DOI are making progress with plan development to guide future curation needs.

About 324 national parks have collections located at park units and research facilities, museums and universities. For example, the NPS Southwest Region has cooperative agreements with the University of Texas, University of Arkansas, and the Museum of Northern Arizona to provide curatorial services for some of their archeological collections. NPS received a combined total of $4.1 million in 1991 and 1992 to address storage, security, and fire protection needs (USDI 1993d:2). Parks are writing collection management plans to evaluate and prioritize their curation needs. NPS maintains information on its collections using an automated catalog system and reports on the number of new items and transactions annually. Training is offered to park staff on current issues in collections management. The agency has established policy, guidance, and technical information in *Management Policies*. *Cultural Resource Management Guideline* (NPS-28), *Museum Handbook*, and a series of technical leaflets called *Conserve-o-grams*.

BLM administers collections at three agency facilities including the Anasazi Heritage Center, Billings Curation Facility and the National Historic Oregon Trail Interpretive Center (Flagstaff Hill). The Eastern

States Office holds its collections at State-operated facilities. By the end of FY 1993, the BLM had 15.2 million archeological objects in its care.

BLM has a collection management plan that identifies critical areas where improvement is needed to assure long term preservation of collections and a strategy to achieve these goals. First, a committee composed of representatives from each BLM State Office was organized and is being trained to assess the condition of museum property collections at BLM offices and later in non-federal repositories. Second, under an interagency agreement, BLM and NPS began a survey of Antiquity Act and ARPA permit files held by the Smithsonian Institution (SI) and the Departmental Consulting Archeologist (DCA) in Washington D.C.. The survey includes information on the location of collections for NAGPRA compliance. COE has contracted with BLM to visit 200 of these repositories holding BLM collections to write condition assessments for each facility and to evaluate them for compliance with 36 CFR 79 requirements. These regulations provide definitions, standards, procedures, and guidelines to provide for the care of archeological collections generated by public projects.

FWS relies mostly on non-federal curation facilities that meet requirements of 36 CFR Part 79. COE under agreement with FWS will evaluate how collections are being managed in these facilities. BOR has collections stored at numerous universities and museums. For example, the Great Plains Region stores its collections at more than 50 universities and museums, while the North Platte office uses the BLM Billings Curation facility and the University of Wyoming. The Central Arizona Project collections are located temporarily in a facility administered by the NPS Western Archeological and Conservation Center through the Arizona State Museum. BOR does not know the number of non-federal repositories holding their collections.

DOD agencies are beginning to address curation issues. COE created a Technical Center of Expertise for Archeological Curation and Collections Management located at the St. Louis District. The Center performs work nationwide for a variety of Federal agencies. For example, a model curation center was designed at the Construction Engineering Research Laboratory but has not yet been implemented. Also, they are writing assessment reports for other DOD installations and the FWS.

DOA relies on installations to develop a curation system for materials and records. The agency recognizes the general problems with this approach. Materials and records are often maintained at

unsecure, on-post military museums. Catalogue systems generally are composed of manually sorted file cards. Some materials and records are unaccounted for or are on loan to institutions with no special use permits or tracking mechanisms. Many installations have materials stored at State and county facilities, but the condition of the materials is unknown. DOA is examining alternatives to the current approach. Plans are underway to renovate WWII buildings to function as interim curation facilities.

AF collections are kept at universities, historical societies, or museums located near the sites where the collections were obtained. Vandenberg AFB executed a curation agreement with the University of California at Santa Barbara to build a facility meeting 36 CFR Part 79 requirements. The Air Mobility Command stores its collections at various museums and universities recommended by NPS or at the major command centers. AF has entered into an agreement with COE to conduct a study of their archeological collections and has issued a policy letter to guide efforts until a more comprehensive plan is developed.

DOE is examining the condition of repositories holding their collections and in some cases moving the collections to facilities that meet 36 CFR Part 79 standards. Collections are usually located at universities and in secured buildings at DOE project areas. For example, the Yucca Mountain project office has their archeological collections stored in climate-controlled, secure buildings. The collections have been reinventoried and reorganized and treated in accordance with 36 CFR Part 79. The records are being maintained in an electronic database. BOP prepares its collections, including field notes, drawings, and photographic data and donates them to the nearest State-approved curation facility. Their policy is to maintain archeological collections near the area where they were recovered and to use repositories that provide the best conditions for permanent curation.

Most development and regulatory agencies do not maintain collections and associated records and do not track the location and nature of these materials. They do require applicants, contractors, or permittees to specify where materials and records will be curated and to do this in consultation with the SHPO. Arrangements are made usually on a case by case basis with approved local repositories. BIA, GSA, HHS and FERC identified more specific standards.

BIA maintains archeological collections from Bureau-owned lands at BIA facilities and is conducting museum property inventories following DOI standards. Materials from trust lands are located in various Federal and State facilities, and are being curated until such time as they are claimed by the respective

Indian landowners. All materials are being curated either at cost to the sponsoring applicants or through State or private funding. BIA does not maintain information regarding the location of these collections.

GSA cooperates with other Federal agencies in establishing regional repositories that meet 36 CFR Part 79 standards. HHS offices curate materials or require contractors to curate materials with private contractors, responsible Native authorities, and museums. FERC, Office of Pipeline Regulation requires project sponsors to curate materials from public land in an appropriate facility approved by SHPO and the Federal land manager. The project sponsor returns materials collected from private land to the land owner unless the owner releases control to an approved repository.

The number and location of Federal archeology collections is a critical issue. Many agencies are unable to produce systematic and detailed inventories of their collections. For this report, the quantity of Federal archeological collections was estimated using cubic feet. Some general statements can be ascertained from the data reported. This percentage was also observed during FY 1991-1992. DOD Services reported that over 80% of their collections were catalogued. Land management agencies reported the highest percentage of catalogued collections.

Bureaus within DOI have the most accurate picture of the total number of museum objects (archeological, ethnographic, historic artifacts, etc.) in their holdings. In FY 1993, the number of objects in DOI was estimated at 66.5 million, of which 72% are archeological. Over half (53%) of the objects are located in DOI facilities (IMPP 1993). NPS, BLM, BOR, FWS, and BIA accounted for more than 99% (66,432,948 objects) of the collections. NPS had the majority of these objects in its facilities. NPS and BOR were able to estimate the amount of their records at 11,800 linear feet and 1,202 linear feet respectively.

Only NPS and BLM reported in the SRC questionnaire the number of archeological objects under their management. In FY 1992, NPS maintained 25 million objects, of which 8 million (32%) are catalogued. In FY 1993, BLM estimated that 15.2 million archeological objects are being held by approximately 200 non-Federal repositories, and about 3 million archeological objects are being held at three BLM curation facilities. About 75% of BLM-held objects have been catalogued.

Development and regulatory agencies provided little information regarding the location and amount of archeological collections generated from their activities. BIA estimated that about 20% of its collections are catalogued, while GSA and HHS estimated this figure at 100%. In FY 1993, these agencies combined estimated about 6,300 cubic feet of collections with about 1,800 cubic feet added annually. GSA reported the largest increase in collections from previous years because of the enormous quantity of materials recovered at the Foley Square project (See Case Study 3.1). Other agencies stated that for collections obtained on public land, the agencies owning the land are responsible for the collections. Little information was provided for collections obtained from private land.

NAGPRA Summaries & Inventories

Prior to enactment of NAGPRA, Federal agencies were beginning to work with Tribes on reburial issues on a case by case basis. Many such cases were prompted by unanticipated discoveries or by Tribal concerns with human remains recovered from past excavations. For example, FWS culminated a memorandum of agreement with the Burns Paiute tribe in Oregon to recover, analyze, and rebury 51 sets of human remains uncovered by severe flooding. Vandenberg AFB completed a memorandum of agreement with the Santa Ynez Band of Mission Indians concerning the disturbance of human burials due to site erosion at the Purisma Point site. The agreement details the recovery of burials and site stabilization measures. Sequoia-Kings Canyon National Park consulted with representatives of the Tule River Reservation and the Wukchumni Tribal Council about reburial of human remains that had been excavated in 1960 at the Hospital Rock site, a late prehistoric and historic Native American and pioneer campsite in the park.

NAGPRA became law in 1990, establishing a formal process to repatriate human remains and associated cultural items recovered from Federal and Tribal land. The process requires Federal agencies and federally-assisted museums and institutions to return human remains and certain artifacts to Native Americans, Native Hawaiians, and Native Alaskans upon their request. It also gives Native Americans a formal role in decisions about activities carried out on Federal and Tribal lands that may affect certain resources of cultural significance. Agencies are moving forward to meet the completion dates for summaries and inventories (Figure 2.7). By the end of FY 1993, a small percentage of agencies had submitted acceptable summaries, which is an important prerequisite for determining the breadth and magnitude of collections for treatment under the law.

Figure 2.7. List of Federal agencies/offices with accepted NAGPRA summaries and inventories as of September 30, 1993.

Summaries:	Inventories:
BLM: 3 State Offices	NPS: Joshua Tree National Monument
BIA: 1 Area Office	NPS: Lassen Volcanic National Park
COE: 3 Districts	
DOA: 3 Facilities/Museums	
DOE: 5 Operation and Field Offices	
DOI Museum	
DOI Indian Arts & Crafts Board: 3 Museums	
FWS: 1 Regional Office	
FS: 16 National Forests, 1 Management Unit	
NPS: 5 Park Units, 1 Regional Office	
SCS: 2 State Offices	
TVA	

During the period of this report, BLM continued to work on its summaries and began work on its inventories. They contracted with COE to visit repositories and compile inventories. Five New Mexico repositories and 51 archeological collections identified in Washington were inventoried and letters transmitted to appropriate Tribes to initiate consultation. FWS, under an interagency agreement with COE, is conducting inventories of collections in non-Service facilities in the Southeast.

The NPS Southeast Archeological Center, under cooperative agreement with Florida State University, undertook a project to analyze and catalog all human remains in the Southeast Region's park collections. The parks and most non-NPS repositories transferred the remains to the archeological center. At Joshua Tree National Monument, NPS employees and representatives from tribal communities in Arizona and southern California participated in a ceremony to rebury Native American human remains and associated funerary objects from the Campbell Collection repatriated under NAGPRA.

Bellow AFB returned all human remains and associated cultural items previously curated at the Bishop Museum to a local Hawaiian organization for final disposition. The Bishop Museum inventoried for the USN more than 1,300 probable Native Hawaiian human remains that had been discovered and removed from Mokapu Peninsula.

The DOE Yucca Mountain facility provided its summaries to 16 concerned Native American tribes and other organizations. The FS Southwest Region began a regional inventory of collections to meet the 1995 inventory deadline.

Summary

Federal agencies manage an estimated 6 to 7 million archeological sites on Federal and Indian lands of which less than 1% of the archeological resources have been identified. Land managers are faced with the challenge to protect a large number of known sites with the knowledge that many unrecorded archeological sites exist in unsurveyed areas. Site protection and preservation will continue to demand more time and attention. With this realization, agencies are planning and implementing comprehensive overviews and site inventory programs to broaden their knowledge of the resource base and associated protection needs.

Archeological resource overviews provide the baseline for information about known or suspected site locations, their historic context and significance, and strategies for management and treatment. In the 1970's, some land management agencies, such as FS, developed overviews for management units as the first step in carrying out their historic preservation responsibilities. Yet, some agencies have not initiated this crucial step, while others, like DOD and DOE, are in the process of completing plans. Land management agencies that lack comprehensive overviews operate on a project by project basis, which may lead to inappropriate decisions in terms of finding and treating sites. Also important, older overviews should be updated incorporating the information gathered from recent archeological studies.

Section 14 of ARPA outlines the need for certain Departments to initiate inventory programs in areas that might contain significant archeological resources. Progress is being made by some agencies such as NPS, TVA, DOE and OSM. The NPS systemwide inventory program is an excellent model for agencies to follow in building a sustained program. If agencies do not build base operational support for this work, the program will wither with the first budget shortfall. Federal agencies should consider building line item support for their survey initiatives under ARPA and NHPA. Agencies with small land bases should consider completely surveying their landholdings, which in the long term will reduce costs and improve management. The work by VA to survey medical facilities and the BOR and TVA to survey reservoirs is commendable in this regard.

Inventories on Federal and Indian lands increased by over a million acres between FY 1991 and FY 1992 but decreased by over 2 million acres by the end of FY 1993. This rise and decline in annual inventoried acres is likely related to fluctuation in the number of Section 106 actions. Most agencies lack necessary budgets for systematic surveys under Section 14 of ARPA and Section 110 of NHPA. Without a systematic program agencies can not consistently increase the amount of inventoried land. Only 6% of Federal and Indian lands have been surveyed, and only 3% have been thoroughly investigated to identify all archeological sites. More importantly, agencies that manage most of the estimated archeological resource base have about 93% of their lands unsurveyed. It is unrealistic to believe that these lands will be completely surveyed in the near future. Thus, systematic and programmatic survey approaches must be devised using more refined and cost efficient techniques. Geophysical techniques and predictive modeling are emerging as potential avenues to more reliably discover sites. More research is needed with survey techniques in a variety of environmental settings to assist Federal agencies with identifying resources under their care.

Agencies are using more innovative and non-destructive techniques to reliably identify archeological resources. NOAA applied remote sensing and sub-bottom profiling sonar to locate early-Holocene cultural settlement on the Continental Shelf. BLM used a low altitude, remote-controlled, balloon system to identify archeological features and to photograph sites. MMS applied remote-sensing seismic cruises in the Apalachee Bay region to model submerged prehistoric site distributions. Finally, CG and NPS implemented magnetometer surveys to identify submerged archeological resources.

Of the known sites on Federal and Tribal lands, about two-thirds (67%) have not been evaluated for the NRHP. This scenario has not improved over the years and is an impediment to fulfilling the intent of NHPA to preserve America's most significant sites for future generations. As agency budgets and staff decrease and as looting incidents increase, agency resources will be strained considerably by the time and energy spent on data recovery and protection. Many factors contribute to this situation; poor environmental planning, costly site evaluation, site avoidance, and poor contextual information, to name a few. New approaches must be explored to reduce the number of unevaluated sites, including regional synthesis of archeological information, refined excavation strategies and subsurface exploration techniques, research, and thematic nominations.

Agencies are spending more attention on the care of their collections and records. This effort is in large part due to the requirements of NAGPRA. Agencies must determine the type of collections and their location in order to meet the deadlines for summaries and inventories under NAGPRA. The efforts of the DOI Museum Property Committee and the Interagency Federal Collections Working Group are also important for helping agencies implement 36 CFR 79 and seeking solutions to collections problems. The treatment of associated records is improving as agencies develop and utilize electronic catalogue systems. However, records should be treated with the same level of care as the associated objects.

Many agencies are actively locating and assessing the condition of collections at curation facilities. Though development and regulatory agencies are ultimately responsible for completing the Section 106 process for their actions, many expressed a view that the SHPO was responsible for maintaining collections and records related to regulatory activity on State and private lands. These agencies should assist in the long-term maintenance of these collections. Some agencies are only beginning to systematically inventory archeological collections in non-Federal repositories. With better knowledge of where collections and associated records are located, agencies and museums can increase accessibility to them for education and research.

By the end of FY 1993, most agencies are making slow progress toward completing NAGPRA summaries and inventories. This situation, in part, is related to the problems with knowing where collections are located. Federal agencies need to expand their efforts to complete NAGPRA requirements within the deadline.

3

FEDERAL ARCHEOLOGICAL STUDIES

Introduction

Archeological studies comprise most of the activity undertaken in the Federal program. These studies are generated by requirements under the National Environmental Protection Act, Section 106 actions, or to satisfy program responsibilities under Section 110 and ARPA. Cooperative research projects and cost-share partnerships are an important ingredient of this work. Archeological studies generally require a purposive, step-by-step approach depending on the nature of the work and the types of resources involved. The guidelines for this work are outlined in the *Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation* (USDI 1983).

Planning and overview studies are the initial step for developing contextual information about the archeology in a geographical area and the archeological resources that may be found. This information is used to determine the need for further investigations. If there is potential to discover significant archeological resources, fieldwork is likely required to identify and evaluate these sites for the NRHP. Discovered sites which can't be preserved in place may require data recovery. Data recovery includes the removal of archeological materials from an archeological site for study. This involves, for example, collecting artifacts from the surface or large scale excavation. Site discovery techniques are not 100% reliable and may result in the unanticipated discovery of sites that must be treated after completing the Section 106 process. Unanticipated discoveries are an important measure of the reliability of identification methods. This chapter outlines the accomplishments and costs of these studies.

Permits

Both the Antiquities Act and ARPA require permits to conduct archeological studies on Federal and Indian lands. Section 3 of the Antiquities Act stipulates that a permit is needed for "the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity". Section 4 of ARPA requires a permit "to excavate or remove any archaeological resource located on public lands or Indian lands and to carry out activities associated with such excavation and removal". Agencies also issue

permits for archeological investigations under agency-specific authorities. Agency archeologists or contractors working for Federal agencies may conduct archeological studies without a permit under the ARPA Uniform Regulations (Section 5(c)) when "carrying out official agency duties under the Federal land manager's direction, associated with the management of archeological resources". This work, however, must comply with ARPA standards.

The cost of archeological study may be passed on to applicants for permits. Under Section 208(2) of AHPA, "reasonable costs for identification, surveys, evaluation, and data recovery carried out with respect to historic properties within project areas may be charged to Federal licensees and permittees as a condition to the issuance of such license or permit".

The permits issued and in effect during FY 1991-1993 numbered 2,210, a reduction from the 2,800 permits reported between FY 1988-1990 (Table C.9). The number of applications totalled 1,770, and only 34 applications were denied, which is a small percentage (2%) of the total (Table C.10). Applications were denied primarily because applicants did not meet professional standards for conducting the work. Eleven permit denials were appealed, but the administrative decisions were not provided in the agency responses. In FY 1993, the number of permits issued and in effect (919) was greater than previous years.

The majority (83%) of authorized studies on Federal land were conducted without a formal permit, demonstrating a reliance on contracting and agency archeologists to administer, conduct or supervise the bulk of archeological work (Table C.9). Many land management agencies employ qualified professional archeologists, either as full-time staff or temporaries. By the end of FY 1993, archeologists (Office of Personnel Management Series 193) working full-time in the Federal government numbered 1,059 (personal communication, Christine Steele (Office of Personnel Management). The Department of Agriculture, primarily represented by the FS, employed 466 followed by DOI (437), DOA (118), AF (10), DOE (8), USN (7), TVA (2), Department of Transportation (1), HHS (1), and other agencies (9). These figures do not include archeologists employed under another job series or as temporaries.

Land management agencies authorized 86% of the permits issued and in effect during the reporting period (Table C.9). BLM administered 61% of the total followed by COE (4%), BOR (3%), FWS (3%) and NPS (3%). FS provided data only for FY 1993 (207), which represented 22% of the permits issued that year. With the absence of FS data for the previous two fiscal years, the total permits reported is

likely underestimated (Table C.9). BIA was the only development agency that reported permits representing 14% of the total (Table C.9). BIA issued permits for most of the archeological work on Indian trust lands. Permits on Indian lands are issued by the Tribe with jurisdiction, and an ARPA permit is perforce issued subsequent to and contingent on a tribal permit.

TRIBAL NOTIFICATION HIGHLIGHTS

- USN notified Native Hawaiian organizations to recover and later rebury human remains.
- DOE, Nevada Operations office notified 14 Tribes with historical ties to the area.
- DOE, Hanford facility notified Tribes for projects planned for 53 miles of river frontage along the Columbia River, which was and remains an important fishing source for Native Americans.
- FWS notified the Burns Paiute Tribe in Oregon to recover, analyze, and rebury 51 human burials damaged by flooding.
- BOR notified several Tribes regarding emergency excavation of a prehistoric human burial near Carter Lake, Colorado.

Federal agencies are required to monitor permittees for compliance with the permit conditions. BLM, which administers the most permits, does not track the number monitored and thus, is not included in this analysis. Only 18% of the total permits issued or in effect during the reporting period were inspected (Table C.10). This percentage varied by agency ranging between 13% to 53%. NPS monitored the highest percentage of permits followed by BOR, DOA, DOE, FS, and COE. Though few permits were monitored, only one reported suspension indicated that permittees were adequately fulfilling their responsibilities under ARPA.

Regulatory agencies do not issue ARPA or Antiquity Act permits. Permits for archeological work under their programs on Federal and Indian land are authorized by the Federal agency or Tribe having land management jurisdiction. However, regulatory agencies can require additional permits under other authorities.

Section 4(c) of ARPA stipulates that if a permit issued under this section may result in harm to, or destruction of, any religious or cultural site, as determined by the Federal land manager, before issuing such permit, the Federal land manager shall notify any Indian tribe which may consider the site as having religious or cultural importance". Between FY 1991-1993 agencies reported 1,589 notifications. Land management agencies reported most of the notifications (73%) with BLM accounting for most of this total (Table C.11). BIA was the only developmental agency that reported notifying Tribes (Table C.11). BLM and BIA combined accounted for 79% of all notifications. Overall, the number of notifications in FY 1993 (683) surpassed all previous years since FY 1987 (411).

Department of Energy employees and Wanapum tribal members along the Columbia River on the Hanford facility.
Beth Simpson/Department of Energy

Overview and Planning

Overview and planning studies include literature review and map searches to document known or potential archeological resources in a study area. The studies are used to initiate consultation under 36 CFR 800.4 of NHPA, to identify cultural resource inventory needs, and to compile archeological background for historic preservation management plans under Sections 106 and 110 of NHPA. Overviews are key to understanding the known resources, for developing effective land use management and resource protection strategies, and for generating historic context for determining the significance of archeological resources.

Over 70,000 overview studies were conducted during the reporting period ranging from 22,000 to 25,000 a year (Tables C.12-C.14)(Figure 3.1). These figures are slightly more than the 20,000 overviews reported annually during FY 1988-1990. Agencies had applicants, licensees and permittees fund 29% of

Figure 3.1. Number of archeological activities, FY 1991-1993.

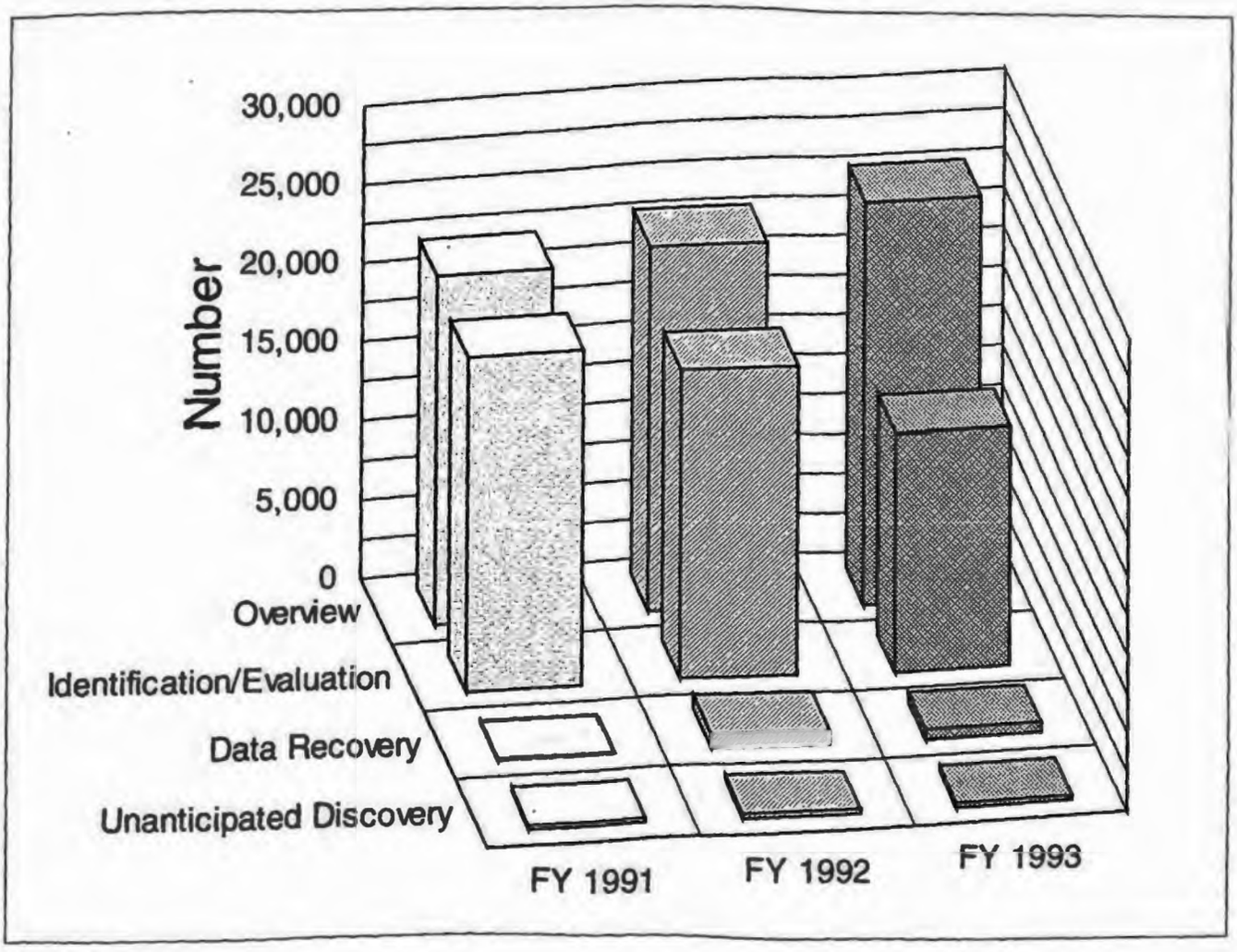
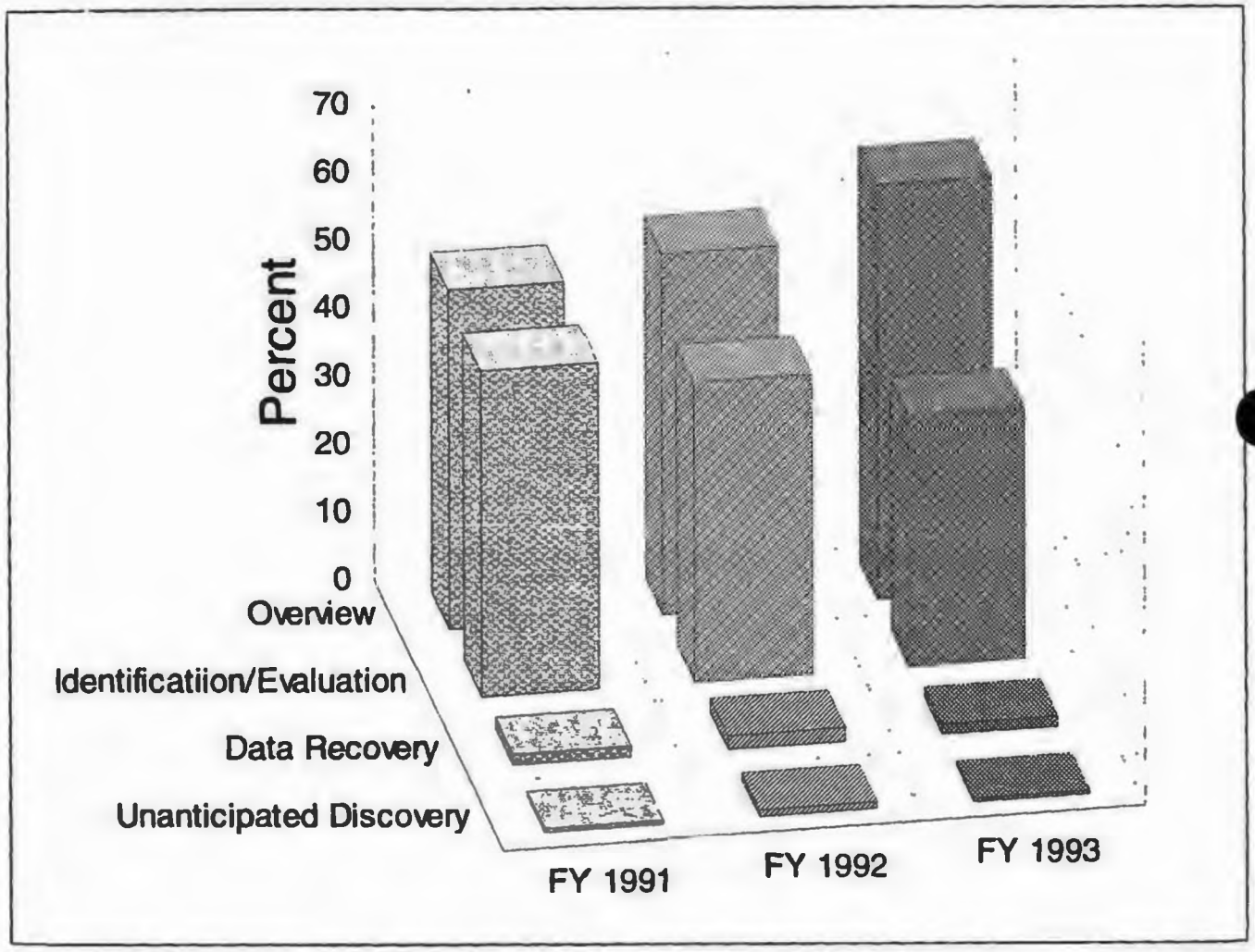


Figure 3.2. Percent of archeological activities, FY 1991-1993.



these projects. The number of overviews conducted during the reporting period increased steadily, and by FY 1993 comprised 55% of all agency archeological studies (Figure 3.2). Overviews have been increasing partly because of Section 110 and ARPA survey initiatives (See Chapter 2). Also, more Federal agencies are recognizing the importance of archeological synthesis in developing effective strategies to locate and manage sites.

Land management agencies accounted for 79% of the overview studies (Table C.12; See Figure 3.1). BLM accounted for 54% of this total followed by COE (21%) and TVA (5%). Development agencies conducted around 21% of the overviews (Table C.13). The Farmers Home Administration (FmHA) sponsored most of these (36%), followed by BIA (35%) and the REA (22%). Regulatory agencies reported less than 1% of the overview studies, which were conducted primarily by FERC (Table C.14).

Identification and Evaluation

Identification and evaluation projects numbered 55,470 and were predominantly agency funded (Tables C.12-C.14). The number of projects ranged between 15,000 to 21,000 annually (See Figure 3.1). The number of projects conducted annually has declined by 6,000 since FY 1991, and by FY 1993 represented 43% of all agency investigations (See Figure 3.2).

Land management agencies accounted for 87% of the identification and evaluation projects (Table C.12). BLM reported 49% of these projects followed by FS (35%) and COE (7%). Development agencies represented about 10% of the projects (Table C.13). BIA (67%) and FmHA (15%) accounted for most of this total. Regulatory agencies accounted for 3% of the projects (Table C.14), primarily sponsored by MMS.

Federal agencies had more applicants (37%) fund identification/evaluation projects than for overviews. Regulatory agencies had most projects funded by applicants, licensees, and permittees (97%), followed by development agencies (49%) and land management agencies (23%).

Dike construction during the Great Flood of 1993 at Gregory Landing, Missouri
Ron Dice/Corps of Engineers

IDENTIFICATION AND EVALUATION HIGHLIGHTS

•USGS conducted an archeo-astronomy study of Taino Indian ball courts on the Caribbean Islands

•COE conducted 117 Section 106 projects under emergency conditions prior to massive levee repair along the Mississippi and Missouri River drainages after the Flood of 1993.

•BLM completed an automated database containing over 350,000 land patents from the General Land Office survey, some of which date to the 18th century, which is a primary source for public land transactions in the East.

•AF collected oral history from Alaska Native elders to document and interpret rock art sites for the Chumash Ethnohistoric Overview.

•USN interviewed WW II veterans who were part of the battle of Midway to provide historic information to help evaluate associated archeological sites

•COE conducted an underwater archeological survey of three Lake Erie locations in Ohio using side scan sonar and marine magnetometer techniques to discover buried wooden vessels.

•FWS preserved a 500 year old cypress canoe from Steele Bayou in Mississippi for display in the State Museum in Jackson

•EPA sponsored an underwater archaeological survey in New Jersey to identify the location of colonial crafts destroyed by a flotilla of British vessels in May 1778.

Data Recovery

During FY 1991-1993 agencies conducted a total of 2,171 data recovery projects ranging between 620 and 908 projects annually (Tables C.15-C.17)(See Figure 3.1). This total is down substantially from the three year period FY 1988-1990, during which over 3,500 total projects were conducted. Data recovery represented about 2% of Federal archeology studies (See Figure 3.2). Land management agencies accounted for 89% of these projects led by BLM (54%) and followed by COE (17%) and DOA (6%) (Table C.15). Development and regulatory agencies conducted 11% of the projects with EPA, BIA and FERC being very active (Table C.16). Most Federal agencies reported a decline in data recovery projects. Between FY 1988-1990, the ratio of identification/evaluation projects to data recovery projects was 17:1, while in this reporting period the ratio increased to 26:1.

DATA RECOVERY HIGHLIGHTS

- BOR conducted data recovery at the Fort Hall National Historic Landmark.
- NPS excavated several 17th and early 18th century French historic sites along the Natchez Trace Parkway.
- NPS excavated the Armstrong site at Canaveral National Seashore, producing artifacts of European manufacture dating to the late 1500s. century shipwreck, lived after escaping from the Spanish.
- DOE initiated a comprehensive data recovery program on prehistoric archeological sites on Pahute and Rainer mesas in Nevada.
- GSA contracted for the excavation and analysis of the African Burial Ground containing a colonial era enslaved African population in New York City (Foley Square project) (Case Study 3.1).

Federal agencies required applicants, licensee and permittees to fund more data recovery than any other archeological study, representing 49% of all applicant-funded studies. FERC, EPA, NOAA, BIA, BLM and COE had the most applicant-funded projects. Federal archeology programs generally lack sufficient annual funds to complete many data recovery projects, unless the work was identified in out-year budget plans. Applicants, licensees or permittees have a choice to either pay for data recovery or wait until the agency finds sufficient funds to complete the work. They are more likely to pay for the data recovery in order to move ahead more quickly with the proposed action.

Unanticipated discoveries

Previously unknown archeological properties can be discovered during an undertaking after completing the Section 106 review and compliance process. The selection of appropriate survey techniques for a particular area or resource is critical to minimizing the potential for unanticipated discoveries. Buried archeological resources are particularly vulnerable to being missed in surface surveys that do not include subsurface testing or subsurface geophysical methods. For these reasons, monitoring during construction is often necessary to identify previously unknown sites and to evaluate the effectiveness of survey strategies. Unanticipated discoveries can be very costly to the project and can destroy the resource. Projects without plans to handle discoveries are frequently delayed, and excavation may be required to recover important data. Agencies need to select and use effective survey methods to reduce the risk of discovering previously unknown sites during the construction phase of a project.

The treatment of unanticipated discoveries is generally included in project agreements. HHS in Alaska notifies concerned agencies and individuals, mobilizing resources to avoid unnecessary disruption of artifacts and permitting revision of construction plans and schedules to minimize delays. FERC's Office

of Hydro Licensing requires licensees to stop activity and consult with the SHPO upon discovering a site. OSM includes a stipulation in all mining permits to report discoveries and provide for their disposition during the course of mining and related activities. Similar provisions are used in all construction, reclamation, and State contracts.

Subject to the requirements of Section 4(a) of AHPA, Federal agencies are required to notify the Secretary of Interior when unanticipated scientific and archeological data are discovered during a Federal undertaking after complying with Section 106, and these materials are being irrevocably lost or destroyed. The DCA, on behalf of the Secretary, coordinates with Federal agencies on unanticipated discoveries. The DCA determines if the data is significant, if the archeological resources may be irrevocably lost or destroyed, and whether they should be recovered and preserved in the public interest. After notification, the agency responsible for the undertaking, in consultation with the SHPO, conducts an investigation of the area, recovering and preserving such data. Alternatively, an agency may meet its responsibilities for unanticipated discoveries by following procedures developed by ACHP (36 CFR 800.11).

Between FY 1991-1993, 801 unanticipated discoveries were reported, ranging from 229-300 cases annually (Tables C.18-C.20; See Figure 3.1). This total represented less than 1% of Federal investigations in the three-year reporting period (See Figure 3.2). The number of incidents were considerably higher than the 583 reported between FY 1988-1990. Most cases (76%) were agency-funded, though applicant-funded cases have increased from 16% in FY 1988 to 24% in FY 1993. Data recovery was required on sites in 60% of the cases between FY 1991-1992, which is lower than the 76% reported between FY 1988-1990. The ratio of unanticipated discoveries to identification/evaluation projects during the reporting period was more frequent (1:69) than between FY 1988-1990 (1:103).

Unanticipated discoveries were slightly more frequent among land management agencies (Table C.18). BLM and COE led land management agencies with 48% and 32% respectively. FmHA led development and regulatory agencies with 36% followed by BIA (25%) and FERC (25%) (Tables C.19-C.20). A number of BIA-reported discoveries involved the discovery of human remains. FERC's Office of Pipeline Regulation monitored a pipe trench for the Colorado Interstate Gas project and discovered 52 archeological sites during construction. GSA encountered a significant discovery at the Foley Square project which cost $6 million in data recovery cost (Case Study 3.1). Land management agencies conducted a substantially higher percentage of data recovery on unanticipated discovered sites compared

Case Study 3.1. Foley Square Project

Agency: General Services Administration
Issue: Impact of emergency discoveries on archeological resources and the local community
Excerpt from ACHP (1992b)

GSA was in the process of constructing two new buildings--a Federal courthouse and a Federal office building--on noncontiguous sites located at Foley Square in lower Manhattan. Section 106 review for the courthouse, initiated by GSA in 1988, was completed with a Memorandum of Agreement in 1989. During site preparation for the office building in the summer of 1991, however, human remains and grave goods associated with the colonial-era, African-American burial ground were discovered. The disturbance of this relatively intact burial ground generated substantial public interest, particularly within the African-American community. It provides an opportunity for scholarly evaluation of the social history of American slaves and free Blacks in an urban context and is an important cultural touchstone for African Americans.

The Advisory Council on Historic Preservation and the New York City Landmarks Preservation Commission determined that GSA needed to develop and implement an approved research design, to involve the African-American community in the decision-making process, and to develop an appropriate method for removing burials to ensure that they were treated in a thorough, respectful and humane manner and to ensure that scientific analysis would not be compromised in the future. By the Spring of 1992, approximately 200 burials had been removed, still absent the research design. Several African-American congressmen spoke to GSA directly, endorsing community recommendations that the human remains be removed only as necessary and onsite reinterment guaranteed.

By late July of 1992, approximately 415 burials had been exhumed and over one million artifacts retrieved from the office building site in spite of continued requests to GSA from the Mayor and the African-American community to cease exhumations until the issues which had been raised could be resolved. Later, it was agreed that only those burials which were exposed would be removed and the remainder of the site would be covered with fill. The pavilion area was to be preserved as a burial ground and decisions regarding a memorial or museum were to be made in consultation with a formal Federal steering committee to be established to advise GSA on this project.

The Section 106 process solidified public participation in the review of the Foley Square project. Because of the Council's continued involvement in the project, issues to which GSA had previously given limited attention were ultimately addressed. The review process also gave the community a forum in which to interact with GSA officials and make its views on this valuable resource known.

View of the archeological excavations at the Foley Square Project
Alan Greenberg/General Services Administration

to other agencies.

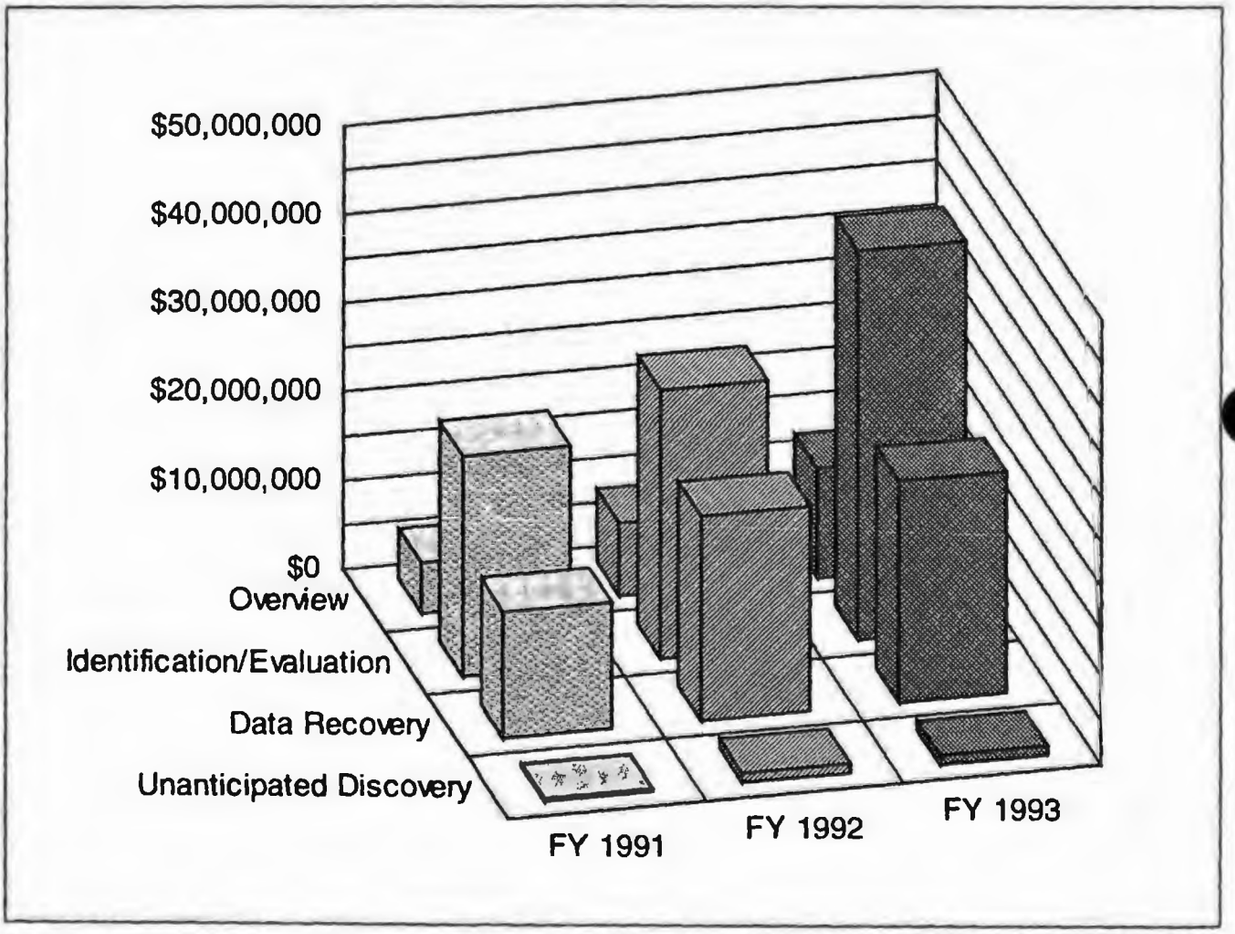
The DCA was notified of 21 cases between FY 1991-1993, or about 26% of the total number reported. HHS and COE notified the DCA most frequently, though the number is well below their overall total. For the most part, agencies preferred to follow the ACHP procedures to resolve their discovery cases.

Costs of Investigations

The cost for archeological investigations between FY 1991-1993 amounted to $189 million (Tables C.21- C.23). The reported costs are affected by several important factors. First, BLM, which has the highest number of archeological studies, does not track expenditures for overviews, identification/evaluation, or unanticipated discoveries, and is not able to provide reliable estimates. The FS and regulatory agencies with substantial archeology programs also did not provide cost data. Second, the reported costs do not include non-agency expenditures incurred by permittees and licensees, which represent about 32% of Federal archeology studies. Agencies do not have mechanisms for compiling and reporting these costs. Thus, the total expenditures reported herein are conservative estimates. Within the reporting period, costs for archeological investigations almost doubled from $43 million in FY 1991 to $82 million in FY 1993 (Figure 3.3). The increase in cost is not related to a sharp rise in the number of agency-funded studies. In fact, the number of agency-funded studies decreased in FY 1993. The total cost over the three year period for the various archeological studies are; (a) identification/evaluation ($99 million); (b) data recovery ($62 million); (c) overviews ($26 million); and (d) unanticipated discoveries ($2 million).

Land management agencies expended the most funds on archeological studies between FY 1991-1993 totalling about $150 million (Table C.21). In FY 1993, they accounted for 86% of the total expenditures. COE reported $49 million, followed by DOA ($19.5 million), BOR ($17 million), NPS ($16 million), and DOE ($10 million). The BLM and FS, having the highest number of archeological studies among all Federal agencies, would probably rank high among agencies in total expenditures if they had reported cost figures. BOR spent a higher percentage of their funds on data recovery in each of the reported years, ranging from 59% to 79% of the total costs. AF and DOA expended a higher percentage of their funds on overview and planning. DOA expenditures doubled between FY 1991-1993 which is related to

Figure 3.3. Cost of archeological activities, FY 1991-1993.



the availability of Legacy funds and the increasing number of agency activities. The cost figures for other land management agencies increased steadily from FY 1991-1993 with most funds being spent on identification/evaluation and data recovery.

Development agencies spent around $38 million during the reporting period (Table C.22). BIA accounted for most of this amount ($20 million), followed by GSA ($10 million), EPA ($2 million), and FMHA ($1 million). GSA expended around $6 million on data recovery work for the Foley Square project (See Case Study 3.1).

Regulatory agencies reported little cost information for their work, which totalled less than 1% of Federal agency costs (Table C.23). As stated earlier, the majority of their costs are incurred by private industry, which is not tracked.

Other Studies

In addition to expending Federal funds on compliance projects under NHPA, funds were made available through Legacy, ISTEA, the National Science Foundation (NSF;1991,1992) and the National Endowment for the Humanities (NEH;1991,1992,1993) to conduct archeological studies on Federal and Tribal land, state and private land, and for research worldwide. These projects and funds are reported primarily in the previous sections of this chapter though it is important to highlight them separately because of their significant contributions to helping Federal agencies fulfill their Section 110 and ARPA responsibilities, and for studying and preserving archeological resources.

Legacy provided DOD agencies and their partners with opportunities to fully develop their land stewardship efforts. DOD programs benefitted by formalizing and integrating relationships between natural and cultural resource programs, and the public benefitted from the many resulting educational and recreational products and enhanced partnerships. Important partnerships were formed as well. A Native Americans Program Working Group was organized to address issues concerning Native Americans on military lands. The projects funded by Legacy addressed a range of archeological studies including overview, identification, evaluation, data recovery, protection, curation, use, and interpretation.

The number of Legacy projects that incorporated archeology were difficult to ascertain based on published documents. The FY 1992 Report to Congress on the Legacy program described about 75 projects that involved archeology (USDOD 1992). Examples of the range of projects include an interpretive trail at the Knik Bluff Homestead trail, recording and protection of rock art, site stabilization at the Yuchi Town, use of ground penetrating radar to detect human burials, and an ARPA training course for managers. NPS assisted DOD with the administration of 51 Legacy archeology projects totalling around $5.5 million (Table 3.1) (NPS 1994)

Federal funds authorized under ISTEA were spent on activities occurring on a variety of lands by State and private organizations (Patten 1994). Funds were awarded to 48 archeology projects costing around $11.6 million (RTC 1994). The number and cost of archeology projects constituted about 1% of the transportation enhancement activities. The full impact on Federal archeology can not be established because two major elements were not tracked: The number and cost of archeology projects required under Section 106 for construction and related activities, and the number and cost of archeology studies integrated as a minor component of other activities. Overall, ISTEA provided numerous opportunities to enhance and preserve archeological sites.

The NSF Anthropology Program funded 196 archeology projects between FY 1991-1992 totalling about $8 million. The type of projects included excavation of Aztec urban houses at Yautepec, Morelos, Mexico; a bioarcheology database project; a summer institute for teachers on pre-Europe Maryland; a study of ancient houses around the Athenian Agora (3000 BC - AD 700); training on the conservation of archeological collections; an outdoor interpretive site for a recreated Algonquian village; research and writing of a volume on archaeological sites of the Mississippian period (AD 1000-1400), a three-year program of excavation and study at the townsite of Tell el-Muqdam, Egypt; and the acquisition of archeological sites through the Archeological Conservancy.

Summary

Federal agencies conducted over 128,000 archeological studies in the three year period. Overview, planning, identification, and evaluation represented most of this work with overview and planning representing 55% of this total. Some important trends can be observed since FY 1987. The number of studies have increased by about 5,000 annually. Overview and planning have been increasing steadily,

Legacy/NPS Partnership Archeology Projects FY 1991-1993						
Project Type	Agency					
	DOA	DOD	AF	USMC	USN	TOTAL
Overview	3 @ $703,000	1 @ $100,000	8 @ $654,000		2 @ $200,000	14 @ $1,657,000
Identification & Evaluation	2 @ $70,000		6 @ $968,000		2 @ $250,000	10 @ $1,288,000
Data recovery			1 @ $142,000			1 @ $142,000
Public Outreach	4 @ $539,000		5 @ $225,000	))	6 @ $354,000	15 @ $1,118,000
Curation	1 @ $200,000	1 @ $45,000		))	1 @ $58,000	3 @ $303,000
Protection	1 @ $85,000		1 @ $35,000	1 @ $350,000		3 @ $575,248
Training	1 @ $60,000			))		1 @ $60,000
TOTAL	12 @ $1,657,000	2 @ $145,000	21 @ $2,024,000	(1) $350,000	(15) $1,248,248	(51) $5,424,248

Table 3.1. NPS-administered Legacy archeology projects and associated costs by project type for FY 1991-1993.

reaching a peak in FY 1993, when it represented 61% of all studies. This steady improvement in planning efforts reflects a renewed interest on the part of land management agencies (particularly DOD and DOE) in building comprehensive management plans. Identification and evaluation have decreased slightly from 45% in FY 1987 to an average of 43% between FY 1991-1993. This trend might suggest that fewer projects require fieldwork because of better contextual information during the planning stage.

Data recovery also has decreased about 1% and continues to represent a small number of undertakings. A significant trend has been the continued decline in the ratio of data recovery to

identification and evaluation studies. This might be attributed to the selection of site avoidance as the preferred mitigation alternative. Unanticipated discoveries have declined slightly but have remained close to 1% of all studies. However, the ratio of site discoveries to identification and evaluation project has increased to 1:69. More importantly, data recovery was required for 42% of the cases, which represents a significant amount of the $2 million incurred by unanticipated discovery projects.

Expenditures for archeological studies have increased from $52 million in FY 1987 to $82 million in FY 1993. These costs are a fraction of the total expenditures, since non-agency expenditures are not tracked and the BLM, FS, HUD, and FHA did not report costs in certain years. Expenditures have increased for identification, evaluation, and data recovery in this same period. Data recovery, which represented 23% of expenditures in FY 1987 demonstrated the largest percentage increase among archeological studies, reaching 30% in FY 1993. Identification, evaluation and data recovery totalled 83% ($69 million) of the expenditures in FY 1993.

Research programs and non-compliance projects were very active in the reporting period, particularly with the funding available from Legacy, ISTEA, NEH and NSF. Based on partial cost data, these programs contributed $37 million for archeological study at home and abroad. Legacy and ISTEA had a significant impact on State and local preservation efforts, as well as site protection on Federal lands. ISTEA exemplified the value of developing partnerships with private preservation groups to protect and interpret locally significant sites. NSF and NEH predominantly supported research abroad, though a number of projects were funded on Federal lands in the U.S.

4

ARCHEOLOGICAL INFORMATION MANAGEMENT AND EXCHANGE

Introduction

Archeological study generates volumes of assorted project data in the form of proposals, permits, research designs, field and analytical records, and reports. These records document data collection methods, the results of work, and the context behind research conclusions. A fundamental research principal is to test the results of past research with new data to produce a more accurate reconstruction of the past. The collection and care of records are vital to having a useable record of past cultures and form the basis for generating new information. Without useable records, valuable scientific knowledge of the archeological record can be lost.

Federal agencies are responsible for maintaining comprehensive and accurate records of archeological work conducted under their jurisdiction. Section 112(a)(2) of NHPA emphasizes the need for agencies to develop and permanently maintain databases for records and other data produced by historical research and archeological surveys and excavations. Standards, procedures, and guidelines are outlined in 36 CFR Part 79, to be followed by Federal agencies when preserving collections, including all records that are recovered in conjunction with Federal projects and programs. Without these records, agencies are unable to measure the scope and effectiveness of their archeology programs and their impacts on budgets and resource programs.

Information Management

The National Archeological Data Base (NADB) is the only available national directory of archeological information (Canouts 1991, 1992). It is sponsored by NPS in cooperation with the Center for Advanced Spatial Technology, located at the University of Arkansas. The database is an interrelated set of data modules: (1) Reports (on-line), (2) NAGPRA (on-line), (3) Permits, and (4) Multiple Attribute Preservation System. The Reports module now provides a standardized bibliographic inventory of about 120,000 reports of archeological investigations conducted in the U.S. Cooperative agreements have been

signed with SHPOs and Federal agencies to provide bibliographic information of reports in their files. User access is provided through commercial telephone lines via modem, and the Internet via telnet. The Reports database can be queried by a number of fields including state, county, title, author, and keywords.

The Permits module will offer nationwide access to information about Federal archeological permits issued before 1984, when permit administration was delegated from NPS to the agency with jurisdiction. By the end of FY 1993, only permits issued under the Antiquities Act of 1906 and ARPA had been entered. About 2,400 out of an estimated 5,000 permits had been entered. Archeological permits issued after 1984, including those under ARPA, will be entered into the Permits module after the information is collected by the responsible agency. This task will be daunting, since only FS reported having a national database for their permit records. BLM permits are maintained at State offices, while permits for DOA, BIA and NPS are located at local and regional offices or installations. NPS does not have a centralized permit database because of the small number of requests.

The NAGPRA module was created in 1993 and provides: (1) the full text of the law, (2) information on regulations, (3) guidance, (4) contacts for Indian tribes and Federal agencies, and (5) summaries of inventories and repatriation that are published in the *Federal Register*. The Multiple Attribute Preservation System module will graphically display archeological and environmental data by state and county levels in the U.S. By the end of FY 1993, the Center for Advanced Spatial Technology was working to put NADB on the World Wide Web where graphical materials, such as maps and photos, can be presented.

The National Register Information System is another nationwide computerized database of all properties listed in, or eligible for, the National Register. It provides access to information for more than 60,000 listings. About 9,000 eligible properties are included in the related subsystem for Federal determinations of eligibility.

Inventory and site records are the primary accounting of the known archeological resource base. Information in these records is used for compliance work, research, and management. Most land management agencies administer site records locally relying on computer systems or paper records. Federal agencies gradually are shifting to electronic records maintenance and sharing site location data systems within a state or larger geographical area.

NPS continued to develop a systemwide, automated database for information about archeological sites to be used for planning and management purposes (Aubry, et.al. 1992). The Archeological Sites Management Information System database sets forth standardized data elements for entering information about archeological resources. The plan is to enter this information on park base maps, and if appropriate, on other cultural resource lists, such as the Cultural Landscapes Inventory.

The Center for Applied Spatial Technology, in cooperation with NPS, SCS, DOD and SHPOs, is active in the use of GIS technology with archeological information. They have collected a comprehensive data set of site locations nationwide and are using this information to examine geographical patterns and impacts to archeological resources from Federal activity. They have produced an archeological overview of the south-central U.S. and northern Plains that can be used by agencies to develop cultural resource management plans. Finally, in cooperation with the Keeper of the National Register of Historic Places, they are assessing the distribution of Register-listed sites across the country (Limp and Gisiger 1992:2-4).

Many land management agencies are using GIS applications to maintain and manipulate cultural resource information. The technology is ideal for mapping resources and analyzing spatial distributions across broad geographical areas for planning, resource protection,and research. Many units of NPS are using GIS technology to develop a base inventory of cultural resources that can be integrated with natural resource information. The Cultural Resources GIS Facility provides a team of experts who assist parks with data collection and mapping. They also train cultural resource managers on the use of these technologies.

FS and SCS are implementing GIS technology at their field units. Certain DOA installations are compiling inventory data for developing predictive models. BIA Area offices shared GIS information with Tribes, such as the Navajo who have GIS facilities. The Langley Research Center under NASA has a Facilities Master Plan incorporating a GIS component that displays layers for known sites and areas of high archeological potential. OSM tested a GIS system that has a cultural resource overlay for each mine. The coal mining regulatory authority in Texas has a fully operational mapping overlay system using Computer Aided Design software to track cultural resource information.

Regional and State automated systems are efficient methods to store standardized data and to share project and site information between agencies. Federal agencies in the Pacific Northwest use the

Northwest Environmental Database, a menu-driven, user-accessible database system. This database includes a comprehensive inventory of rivers, archeological sites, and other natural resources covering 135,000 miles throughout Washington, Oregon, Idaho, and Montana. NOAA is developing a computerized database of submerged cultural resources in the National Marine Sanctuaries for use by Federal and State agencies that are responsible for submerged bottomlands in and adjacent to the sanctuaries.

AF, DOE, NPS, and BLM used the InterMountain Antiquity Cataloging system to manage cultural resource data in Nevada, Idaho, Utah, and Wyoming. The system is widely accepted and is required by some SHPOs. The system has a site form to record field data and a computerized database of selected fields from the site form. This data can be accessed from personal computers at agency field offices.

Federal agencies in Arizona use a state relational database maintained by the Arizona State Museum. The database can be accessed from local personal computers, and authorized users can change, delete, or update site information. For security, certain information has "read only" access. Colorado has a similar system that offers contractors and agency archeologists direct access for literature searches. In Alaska, the Council on Northern Resource Information Management coordinated archeological databases among Federal and State programs. They utilized the State of Alaska's Heritage Resources Survey Database, which includes sites considered significant by the SHPO and local Tribal authorities.

Some development and regulatory agencies have automated their archeological records. SCS is testing computer software that will integrate planning and cultural resource compliance procedures for the agency's field offices. MMS maintains two archeological databases containing baseline data on historic shipwrecks and on coastal and offshore prehistoric sites. Shipwreck data is being updated, while the prehistoric site data is being compiled from four regions of the Outer Continental Shelf. Several regions of EPA use computer programs at local work stations to track archeological work for large projects that require Environmental Impact Statements. FERC has experimented with a database for pipeline projects that contains locational information about archeological sites found in the right-of-way. The Alaska office of HHS uses a project database that incorporates archeological data for each community.

Some agencies, such as the Nuclear Regulatory Commission (NRC), GSA and FERC, do not maintain a computerized record of their archeology projects. These agencies generally feel that the SHPOs are

responsible for maintaining this information. Most SHPO offices have automated their cultural resource databases and more than half the states have automated their archeological site information (Chittenden 1990: 1).

Federal agencies with collection facilities have automated records management. NPS uses the Automated National Catalogue System for park collections. In FY 1992, parks began submitting annually both a paper and electronic version of their catalog records to the National Catalogue, administered at Harpers Ferry, West Virginia (NPS 1991:5). BLM has three repositories that each use different cataloging methods. The Anasazi Heritage Center is fully automated, while the Billings Curation Facility and the Flagstaff Hill (Oregon Trail) facility use a paper-based record. Many Federal agencies send their records and collections to private, state, and university facilities. These facilities generally do not catalogue or list collections by Federal agency.

Information Exchange and Partnerships

Archeologists employed by Federal agencies routinely communicate and cooperate with each other and other professionals. They participate in professional archeology meetings and sometimes teach university and college courses. Formal agreements among Federal agencies, educational institutions, and other organizations are particularly evident based on the number of reported partnerships. Cooperative ventures build constituents and support for the agency and its archeology program.

BLM reported more than 245 cost share agreements with universities, museums and other Federal, State and local entities. The projects encompassed inventory, protection, excavation, aerial monitoring, site stabilization, fencing, interpretation, public awareness, and training. These agreements generated $8.95 million in matching money, equipment, materials, and staff time on an initial BLM investment of $2.21 million, a return of over 4 to 1 on the dollar.

Multi-agency partnerships facilitate communication and cooperation between area managers, to coordinate resource management actions, and to develop cost-efficient strategies. The Lake Roosevelt Cultural Resource Advisory Group, composed of cultural resource personnel from BOR, NPS, BIA, the Confederated Colville Tribes, and the Spokane Tribe of Indians, work closely on common resource management issues around Lake Roosevelt in central Washington. The Cultural Resources Committee of

the Columbia River Systems Operation, composed of NPS, BOR, COE, BIA and the Bonneville Power Administration, develops strategies to manage cultural resources along the Columbia River from Canada to the Pacific Ocean. BIA works cooperatively with NPS on the Chaco Canyon Protection Sites Program, designed to protect sites outside Chaco Canyon NM in New Mexico. SCS initiated a working advisory group involving NPS and state institutions to develop a strategy for a national assessment of the condition of historic properties and the impact of cultural resource policies on privately owned lands.

Federal agencies also shared cultural resource expertise with those that are enhancing existing archeology programs. For example, NPS and AF signed an interagency agreement for professional and technical assistance in managing and protecting cultural resources. NPS helped AF assess the status of historical and archeological inventory efforts, identify data gaps, develop a strategy for site evaluation, and create a data base for maintaining records. Regulatory agencies, such as Immigration and Naturalization Service (INS) and DOE, used interagency agreements with land management agencies to administer contracts and conduct their Section 106 compliance projects.

Cooperative research activities are part of these interagency partnerships. USN and SCS tested the use of ground penetrating radar to locate human burials and significant buried cultural resources in sandy soils at facilities in Hawaii. FWS, in cooperation with SI, University of Nebraska, and the National Museum of Man in Paris, conducted an interdisciplinary bioarcheological project at the Alaska Maritime NWR in the western Aleutian Islands. FWS, Florida Bureau of Archeological Research, Florida State Academic Diving Program, and NOAA investigated Ray Hole Spring, a significant inundated sinkhole containing prehistoric materials located 32 km off the coast of Florida. NPS and the Colonial Williamsburg Foundation conducted research at the Fort Raleigh NHS to identify subsurface features of colonial period buildings. MMS, Florida State University and USGS directed offshore seismic surveys in the Apalachee Bay Region of Florida to reconstruct the paleodrainage system of this region and to evaluate the prehistoric site potential in the eastern Gulf of Mexico.

Interagency training is important for continued education of cultural resource personnel and agency managers. ACHP, under a cooperative agreement with the University of Nevada-Reno, developed courses tailored to Indian tribes, land managing agencies, and private organizations. Between FY 1991-1993, historic preservation law training was provided to the Navajo Nation, Alaska BIA, and FS. Other ACHP courses are sponsored jointly with the GSA Interagency Training Center. In the reporting period, between

FEDERAL & STATE PARTNERSHIP HIGHLIGHTS

•BOR and NPS sponsored test excavations at Ft. Hall, an NHL property, with permission of the Shoshone-Bannock tribe which provided volunteer labor.

•USN, AF, ACHP, NPS and the Hawaii SHPO conducted oral histories and archeological testing on Midway Island for the commemoration ceremony of the 50th anniversary of Midway.

•NPS with donations from the Idaho Power Company constructed a trail adjacent to wagon ruts of the Oregon Trail.

•NOAA and the Indiana University Underwater Science and Educational Resource Program sponsored a workshop on marine archaeology and historic preservation in the Florida Keys NMS.

•DOA, the COE Waterways Experimental Station and the U.S. Geological Survey (USGS) studied buried landforms and altered landscapes in riverine and interfluvial areas in Missouri to better identify buried archeological components.

•USN and NPS tested the use of ground penetrating radar to better detect human burials and significant buried archeological sites in sandy soils at facilities in Hawaii.

•MMS and Florida State collected seismic data on the Apalachee Bay region in Florida to help reconstruct paleodrainage systems.

700 to 950 trainees attended courses annually (ACHP 1991:103; 1993:61). In FY 1993, ACHP, in partnership with NPS, developed an introductory-level course on cultural resource management law for Federal personnel. Also, in partnership with USN, a series of CRM management workshops were attended by over 1,000 DOD personnel.

NPS, through the Cultural Resources Training Initiative, the Mather Training Center, and the University of Nevada-Reno, offered over 8 courses and workshops on archeological topics each year. These courses included archeological resource protection and law, public interpretation, geophysical techniques, site stabilization, site conservation, archeology for managers, and curation and collections management (Bevitt, et.al. 1993). They were attended by over 150 trainees annually.

Many Federal agencies provide training for their employees and for personnel from State, Tribal and local agencies who work with Federal programs. OSM trained classes on the application of Federal preservation laws to State and Tribal coal mine permitting and abandoned mine land reclamation programs. These classes were attended by over 150 people. MMS held a public workshop in the Gulf of Mexico Region on new archeological resource requirements for lessees. The workshop addressed specific questions from the oil and gas industry and geophysical survey companies on survey and report preparation requirements. Representatives from 22 oil companies and 4 geophysical survey companies attended the session. FERC

staff conducted environmental Section 106 compliance training for the gas pipeline industry and interested individuals and organizations

Tribal Coordination

Between the FY1991-1993 period, Federal agencies took steps to improve their consultation procedures with Native Americans on Section 106 projects, site protection, traditional cultural properties, and interpretation. BOR was recognized for its exemplary performance for intergovernmental coordination with Native Americans during the Glen Canyon Environmental Study (ACHP 1993: 50-51). The study required extensive consultation on issues involving the identification, evaluation, monitoring, and treatment of archeological properties and traditional cultural properties that were being affected by the Glen Canyon Dam project. NPS, FS, BLM, the SHPO, and the California Native Heritage Commission formed the Interagency Native American Policy Committee to address Native American and archeological resource preservation issues in California. The DOE's Yucca Mountain Project Office consulted regularly with Native Americans on the effects of projects on traditional lands. Also, their data recovery projects are required to have Native American monitors and traditional religious leaders who bless collected artifacts upon request by tribal representatives

View of the Oregon Trail overlooking the Snake River valley in Idaho
Neal King/National Park Service

DOA negotiated an agreement with the Comanche Nation on the use of the Leon River Medicine Wheel, a significant ceremonial site located in Texas. DOA also consulted with the Yakima Nation to establish a cooperative agreement for use of lands proposed for acquisition by the Army adjacent to the Yakima Firing Center in Washington. In the past, these lands were used by Yakima tribal members for hunting and gathering native plants. BLM continued consultation with the Shoshone-Bannock Tribes regarding the Chief Tendoy historic cemetery management plan in Idaho. The BLM New Mexico state office cooperated with the Santa Fe Indian School to create a multi-media computer exhibit for the Chama Gateway Interpretive Center in New Mexico. Hickman AFB coordinated a variety of archeological projects with the Oahu Burial Council and local Hawaiian representatives with the assistance of USN archeologists. Hurlburt Field, in cooperation with NPS, COE, the Florida SHPO, and the North Florida Confederation of the Eastern Creek Indian tribes, developed a plan to protect a National Register-eligible Native American village and burial ground from damage by tidal erosion and human encroachment. The plan included planting a marsh on the foreshore of the site by a local Boy Scout troop to reduce or stop the impacts of erosion.

Agencies provided technical assistance for archeological projects on Tribal lands. BOR's Missouri-Souris project office frequently assisted Tribes with Section 106 projects and served as liaison between the Tribal archeology program and other Federal agencies and the private sector. In the Lower Colorado region, BOR assisted the Gila River Indian Community in developing its historic preservation program. In the Pacific Northwest Region, NPS archeologists assisted the Swinnomish Tribe and the Quinault tribe in conducting archeological surveys of their lands, and provided the Makah tribe with advice on managing archeological collections. DOE's Idaho National Engineering Lab entered into an agreement with the Shoshone-Bannock tribes from the Fort Hall Reservation to establish consultation procedures for project review and comment. The projects involve NAGPRA compliance, the identification of sacred sites, and issues of environment, safety, health, and economic self-sufficiency.

Organizations, Avocationals and Individuals

National professional organizations are key partners with Federal agencies in promoting archeological preservation. The Society for American Archeology (SAA) is an active partner with NPS and BOR. Together, the partners produced a booklet for educators titled *Teaching Archaeology: A Sampler for Grades 3 to 12*. They also conducted educational workshops for teachers and environmental organizations,

and delivered educational resource information at national meetings for educators, social scientists and archeologists.

The National Trust for Historic Preservation (NTHP) continued its valuable role in national historic preservation issues, including archeological resource preservation, research, heritage tourism, and public education. They conducted educational programs for students (grades 4-12) as part of excavations at Drayton Hall in South Carolina. Archeological excavations were conducted at Montpelier, the home of James Madison, to collect evidence to challenge historic interpretations regarding slavery and agricultural economy. More than 500,000 people visited their historic and archeological properties annually (NTHP 1992:14). NTHP assisted some military installations with the preservation of historic buildings, archeological sites, historic records, military artifacts, and other cultural resources. Also, they assisted NPS with obtaining funds to begin acquisition of the Palo Alto Battlefield NHS in Texas.

Avocational groups are instrumental partners in Federal archeology programs. They assist agency archeologists with obtaining information about archeological sites within or adjacent to public lands, and volunteer considerable time on site excavations, archeology week programs, and site monitoring. Agency archeologists participated in local avocational societies by teaching archeological certification programs, giving talks at chapter meetings, leading field outings, and assisting members in publishing reports. For example, BLM archeologists served as professional advisors to local chapters of the Utah State Archeological Society. In return, more than 200 society members volunteered on BLM projects. NPS continued to work with the Council of Affiliated Societies, an affiliate of the SAA, on training certification programs and agency volunteer projects.

Many Federal agencies routinely work with the private sector. For example, SCS worked closely with private landowners on projects to stabilize archeological sites. MMS enlisted the support of local collectors to develop information on the extensive collection of artifacts and extinct Pleistocene faunal materials from the McFaddin Beach site in Jefferson County, Texas. The effects of marine inundation and shoreline erosion on the site's prehistoric materials was documented. The Federal Aviation Association (FAA) worked with a local interest group to interpret an African-American cemetery in North Carolina.

International Coordination

Federal agencies participated in several international projects promoting archeological preservation worldwide. NPS is a member of the "Shared Beringian Heritage Program" that involves archeological survey and evaluation of an eroding historic Eskimo village. Work conducted in the reporting period supported background planning for the proposed Beringian Heritage International Park, a collaborative geomorphological and paleo-ecological research project. In Alaska, under cooperative agreement with the University of Alaska at Fairbanks, NPS surveyed and evaluated historic reindeer herding sites with noted Russian archeologists. NPS assisted the Province of British Columbia's Ministry of Lands and Parks on archeological issues and presented papers on submerged cultural resources and shipwreck management in the U.S. at the 10th annual conference of the Australian Institute for Maritime Archaeology.

USN, in partnership with the SHPO, ACHP, and the Government of Japan, jointly managed WWII historic resources and human remains on Navy lands in Guam. The objectives were to: (1) Define procedures and management policies for the inadvertent discovery of WWII era or earlier human remains on all USN properties in Guam and Micronesia (2) Address the issue of the remains of Japanese soldiers (3) Examine the broader issue of the evaluation and management of WWII historic properties, and (4) Define WWII features or locations of importance to the modern local Chamorro community.

Summary

Federal agencies are increasingly using computers to manage and disseminate information about archeological resources located on public lands. Field offices are converting from paper files to electronic data systems. One emerging problem is the use of incompatible computer systems and maintenance of different data categories in field offices of the same agency, which hinders the usefulness and availability of information. NPS is countering this problem by developing a systemwide automated system that is integrated with other cultural resource databases. The FS is piloting an electronic database in association with GIS systems in California for systemwide application. Any electronic-based information management will require a commitment of base funding for long-term success.

Federal agencies are participating in a variety of interagency and regional databases. Regional databases, such as the Intermountain Antiquity Cataloging system, hold site data that are accessible from

field office personal computers. Site information can be gathered immediately for compliance actions. Some SHPO offices also are using statewide systems with information contributed by agencies located in the state. One key component of all these interactive databases is the strict adherence to confidentiality of site information.

Agencies should continue to work together on a national archeological database and produce comprehensive bibliographic sources. NADB is becoming more user-friendly and the number of reports in the database continues to grow. However, this effort needs more State support to keep a current and comprehensive database. The national database is helping with a chronic problem in the Federal archeology program; that of a growing body of reports that is placed into agency files or record centers and is not immediately available for use in new archeological studies.

The rapid development of electronic communication networks will help considerably to make information accessible immediately and globally. Objects and associated records are valuable tools for presenting information about the nation's history and prehistory to the public. Traditionally, museums have used these materials in their educational programs and interpretive exhibits. Federal agencies should provide funding or other support to museums to utilize their collections to increase the public's knowledge about archeological sites on public lands.

Interagency partnerships are being used frequently in all archeological activities. Agency barriers are softening, which facilitates more opportunity for interagency cooperation and information sharing. Interagency cooperation will continue to improve strategies to protect and preserve archeological resources. Examples of these efforts included shared resource management, technical assistance, cooperative research, training, and continuing education. Tribal participation in management issues and historic preservation training is improving as well.

Information exchange and partnerships are the key to offsetting reductions in Federal budgets and staff. Multi-agency efforts that are regional in scope are becoming increasingly important for carrying out holistic and consistent resource management practices. Concurrently, agencies are reaching out to the private sector for assistance in carrying out their resource responsibilities. The public is being actively engaged as stewards of the past, for example, by volunteering to monitor sites or participating in

discussions about site protection. Public benefits from this work are essential to the long term preservation of archeological resources.

Private sector partnerships have a valuable role in agency archeology programs. Cooperative agreements with state and professional organizations are generating successful research and outreach activities. National organizations, such as SAA and NTHP, are assisting agencies with developing strong historic preservation policy. BLM, NPS and FS are leveraging millions of dollars in matching funds from private organizations for preservation projects that benefit local communities. Partnerships and cooperative ventures are being used to accomplish interpretive and research projects that otherwise would not be funded.

Communication and cooperation between Federal agencies and landowners must be fostered to help protect and preserve significant archeological resources located on private land. The 1992 amendments to NHPA direct Federal agencies to provide technical information on site preservation alternatives, to encourage the protection of Native American cultural items, and to encourage landowners undertaking archeological investigations to seek professional assistance. Section 11 of ARPA also encourages Federal agencies to work proactively with all interested parties in archeological resource preservation. Agencies need to expand initiatives targeting avocationals and private landowners, such as the fine work of the SCS in assisting landowners with site conservation projects.

5

ARCHEOLOGICAL PROTECTION AND LAW ENFORCEMENT

Introduction

Significant strides were made between FY 1991-1993 in archeological resource prosecutions, information exchange, training, interagency coordination, and partnership activities. Successful casework also strengthened use of ARPA. In *United States v. Austin*, (902 F.2d 743 (9th Cir. 1990)) the Act's constitutionality was upheld when the U.S. Supreme Court denied Austin's petition for *writ of certiorari* (498 U.S. 874(1990)). In *United States v. Gerber* (999 F.2d 1112 (7th Cir. 1993)), the first conviction under Section 6(c) of the Act, which prohibits the interstate trafficking of archeological resources removed in violation of state or local law, was upheld on appeal. Also of importance, Federal agencies and Tribes are utilizing the Act's civil penalties section, which provides an effective method of prosecution. The Abandoned Shipwreck Act, which protects abandoned shipwrecks and associated cargo in or on submerged lands of the States, was upheld when the U.S. Court of Appeals affirmed its constitutionality in *Zych v. Unidentified, Wrecked and Abandoned Vessel* (No.93-1426 (7th Cir, March 21, 1994)(1994 WL 88377)).

Archeological resource crimes and agency activities

DOI, DOD, FS, and TVA are required to report on their archeological law enforcement activities under ARPA 14(c). For this report, FS did not report on their activities between FY 1991 and FY 1992, which will affect the results reported below.

Documented violations of vandalism and looting increased steadily from FY 1991 to 1993 (Table C.24)(Figure 5.1). The FY 1993 total was slightly higher than the FY 1990 total of 716 documented violations. The cumulative figure for FY 1991-1993 (1,600) was slightly less than the combined total for FY 1988-1990 (1,755). In FY 1993, FS reported 56% of the violations followed by BLM (22%), and NPS (17%).

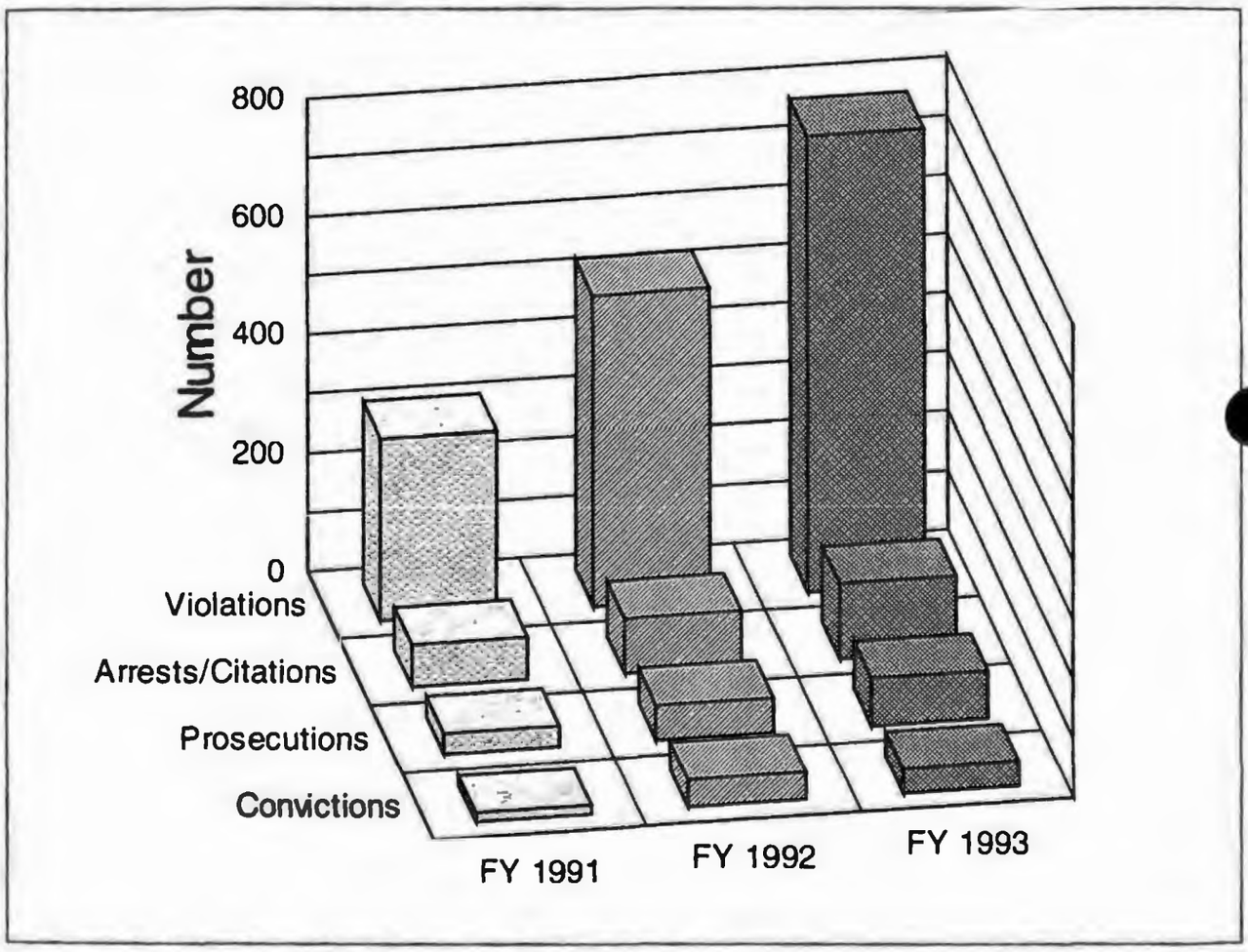
The number of arrests and citations increased steadily between FY 1991-1993 (Table C.24) (Figure 5.1). However, FY 1993 had fewer arrests and citations than FY 1988 (148) and FY 1990 (155). The percent of documented violations resulting in arrests and citations decreased from 23% in FY 1991 to 16% in FY 1993. In FY 1993, FS had the highest number of arrests and citations (35%) followed by NPS (28%), and BLM (19%). Citations far outnumbered arrests over this same period. BLM had about an equal portion of arrests and citations, while NPS, FWS, and COE had a much higher number of citations.

Combining numbers for FY 1991-1993, the percentage of documented violations resulting in arrests and citations totalled 18%. This figure is slightly lower than the cumulative total between FY 1988-1990, which was 21%. The declining rate of arrests and citations demonstrates the difficulty of catching looters operating in vast and remote areas, a typical problem for land management agencies. Surveillance and site protection plans are important tools for guarding sites that are vulnerable to looting. Such measures also result in an increased arrest rate.

The number of prosecutions doubled after FY 1991 (Table C.24) (See Figure 5.1). In FY 1992 and FY 1993 the percentage of arrests and citations that resulted in prosecutions each totalled 63%, almost double the number from FY 1988 (36%). BLM had the highest percentage of successful prosecutions, followed by NPS, FWS, and FS. The increase in prosecutions can be attributed to better training of attorneys and law enforcement officers, as well as, the lower felony threshold.

Convictions followed the same pattern as prosecutions (Table C.24) (See Figure 5.1). Convictions tripled from FY 1991 to FY 1992 with only a slight decrease in FY 1993. The number of annual convictions during the reporting period outnumber the annual totals between FY 1988-1990. These increasing rates also are reflected in the percent of convictions per prosecutions. The conviction rate rose from 23% in FY 1991 to 31% for both FY 1992 and FY 1993. These rates improved from 15% reported in FY 1990. The ratio of ARPA misdemeanor convictions to ARPA felony convictions during the reporting period steadily declined; FY 1991 (6.5:1); FY 1992 (4.75:1); FY 1993 (2.15:1). The reduced felony threshold introduced in the 1988 ARPA amendments likely is helping with the increasing number of felony convictions. Those Federal agencies that identified convictions in the reporting period were BLM, COE, FS, FWS, and NPS. In FY 1991 and FY 1992, NPS had the highest numbers: 73% and

Figure 5.1. Looting and vandalism statistics, FY 1991-1993.



52% respectively. In FY 1993, FS (34%), BLM (32%), and NPS (27%) shared similar conviction rates. No agency reported having any ARPA prosecutions for second offenses.

Two significant cases involving ARPA were concluded during the reporting period. In *United States v. Gerber*, 999 F.2d 1112 (7th Cir. 1993), the first conviction under Section 6(c) of ARPA, which prohibits the interstate trafficking of archeological resources removed in violation of state or local law, was upheld on appeal (Case Study 5.1). The only successful civil penalty case was reported by FS in *Eel River Sawmills v. U.S.* and *Brown and Western Pacific Logging & Construction v. U.S* (Table C.25). These two civil cases resulted in a penalty totalling $43,500, assessed to a timber subcontractor for excavating a road and ponds on an archeological site (Case Study 5.2).

Civil prosecution under ARPA has been neglected and underused, primarily because agencies have focused on criminal prosecutions to establish successful case histories. Cases that do not meet the stringent requirements of a criminal case are ideally suited for civil prosecution (Hutt 1994: 2). Hutt, a judge for the Maricopa County Superior Court in Phoenix, Arizona, argues that in civil cases the burden of proof is less stringent, since one demonstrates guilt only by the preponderance of the evidence. Administrative proceedings require less time and are more cost-efficient. Fines are assessed based on actual damages determined at the hearing. These assessments can be collected directly by the agency or tribal authority, and can be used immediately for site restoration work. Finally, the agency has more direct control over the presentation of the case.

Another significant case occurred under the Abandoned Shipwreck Act. In *Lathrop v. Unidentified, Wrecked & Abandoned Vessel and State of Florida* (817 F.Supp. 957 (M.D. Fla. 1993)), it was determined that even when the Abandoned Shipwreck Act does not apply, Federal agencies and states may assert a regulatory interest in a shipwreck even if they cannot assert an ownership interest (Case Study 5.3).

Most Federal agencies continued to use non-ARPA statutes over ARPA (Table C.25; See Figure 5.1) to prosecute persons accused of looting and vandalizing Federal property. Non-ARPA prosecutions are prominent in FY 1991 (89%) and in FY 1993 (65%). The data from FY 1992 is suspect since the total number of non-ARPA prosecutions exceeds the number of total prosecutions. Despite the amendments to ARPA that helped strengthen the criminal provisions of the Act, ARPA is not the preferred statute in

Case Study 5.1. United States v. Gerber.
Agency: Federal Highway Administration and Indiana Department of Highways
Issue: Section 6(c) of ARPA

By Richard Waldbauer and David Tarler, NPS Archeological Assistance Division

On July 20, 1993, the United States Court of Appeals for the Seventh Circuit upheld the 1992 conviction of Indiana resident Arthur Gerber for violating the Archaeological Resources Protection Act (ARPA). He was sentenced to one year in prison on five ARPA counts, ordered to pay a $5,000 fine, and further ordered to forfeit $4,750 in lieu of forfeiting motor vehicles used in committing the ARPA offenses. Gerber reserved his right to appeal, however, on the ground that ARPA did not apply to his offense. The section of ARPA under which he was convicted prohibits the interstate trafficking in archeological resources removed in violation of State or local law.

The Court of Appeals addressed two issues: First, whether ARPA, despite its references to State and local law, really applies to archeological resources removed from lands not belonging to either the Federal government or Indian tribes; and second, even if ARPA is applicable to non-Federal and non-Tribal lands, whether the State and local laws to which ARPA refers are limited only to laws that expressly protect archeological resources, as opposed to general laws such as those forbidding trespass and theft.

The Court held that ARPA is not(my emphasis) limited to objects removed from Federal and Indian lands. Instead, it appears to support State and local laws protecting archeological resources. As such, it resembles other Federal statutes that affix Federal criminal penalties to State crimes when they are committed in interstate commerce. Indeed, the reference to interstate commerce would be superfluous if the subsection were limited to Federal or Indian lands, because ARPA would apply in those cases regardless of whether archeological resources were transported in interstate commerce.

The Court agreed that, in general, ARPA is limited to cases in which the violation of State and local laws is related to the protection of archeological resources. However, it found that a State or local law need not be limited to the protection of archeological resources in order to be deemed related to that protection. The Court held that the objectives of Indiana's laws forbidding trespass and conversion include the protection of archeological resources, and that Gerber's conduct was therefore forbidden under ARPA.

prosecuting looting crimes. Prior to 1988, the Act clearly had weaknesses in its criminal provisions. Strong cases were difficult to compile without catching suspects in the act of looting and without high damage estimates. This perception might be leading land managers and prosecutors toward other statutes. Why ARPA is not being used more consistently by prosecutors needs in-depth study. Based on FY 1993

Case Study 5.2. Eel River Sawmills v. U.S. and Brown and Western Pacific Logging & Construction v. U.S.
Agency: Department of Agriculture, U.S. Forest Service
Issue: Civil proceedings under ARPA

By Richard Waldbauer and David Tarler, NPS Archeological Assistance Division

These two consolidated ARPA cases constituted the first civil proceeding under ARPA. Eel River Sawmills contracted with the Forest Service to purchase timber on the Six Rivers National Forest, in California. Eel River was obligated under contract to abate dust in order to promote the safe use of unsurfaced roads and to prevent excessive loss of road material. Eel River then subcontracted the dust abatement work, and the subcontractor excavated a road and water holes on an archeological site without notice to or permission from the contractor. The Forest Service issued a Notice of Assessment under ARPA, and the complainants appealed to the Department of the Interior, which hears these appeals by agreement with the U.S. Department of Agriculture.

The proceeding before an administrative law judge, Judge Harvey Sweitzer, was held at the Department of the Interior Hearings Division, in Salt Lake City, Utah. All the complainants claimed that their actions were inadvertent. Judge Sweitzer concluded that inadvertence is not a defense to a civil matter, and that, therefore, inadvertent acts may be penalized under ARPA. Judge Sweitzer upheld the amount of the penalty, $43,500. Interestingly, Judge Sweitzer concluded that the subcontractors were liable for the penalty but not the contractor, Eel River, at least not under ARPA. In his analysis, which included a discussion of the contract clauses making the timber sale purchaser responsible for the acts of its subcontractors, Judge Sweitzer stated that Eel River may be liable contractually, but is not liable for statutory penalties. Judge Sweitzer's decision was issued in August, 1992. After the complainants initially filed an appeal, the parties agreed to a settlement of $32,000 in January, 1993.

figures, this trend might be changing, since both BLM and NPS favored ARPA in prosecutions.

The cumulative damage to archeological resources from looting and vandalism totalled around $1.4 million (Table C.25). ARPA criminal fines and civil penalties amounted to a dismal 8% of the damage, estimated from the cost for restoration and repair and the commercial value of artifacts. Despite the disparity between the loss and recovery ratio, the collection of fines and penalties have increased gradually since FY 1991. Property forfeiture also has improved substantially since FY 1991 and is being used as an important deterrent to looting (Table C.26).

View of road damage to archeological site in Area F, Eel River Sawmills case, California
Mad River Ranger District/Forest Service

No ARPA rewards were given to citizens for reporting violations that lead to successful prosecutions This problem has been accentuated by the lack of procedures to transfer money from the Department of Treasury to the appropriate agency

The cost for ARPA enforcement for the 3-year period between FY 1991-1993 was $5 5 million Table 24) The annual expenditure ranged between $1 6 to $2.3 million These figures are inflated since DOE could not always distinguish ARPA costs from other enforcement costs BLM reported the most ARPA enforcement costs with average annual expenditures of around $893,000

Case study 5.3. Lathrop v. Unidentified, Wrecked & Abandoned Vessel and State of Florida v. Lathrop (817 F.Supp. 957 (M.D. Fla. 1993))
Agency: Department of Interior, National Park Service
Issue: Upholding the Abandoned Shipwreck Act

By Richard Waldbauer and David Tarler, NPS Archeological Assistance Division

These two consolidated cases involve a dispute over an alleged unidentified shipwreck lying within the waters of Canaveral National Seashore, Florida. When the action arose, Congress had already passed the Abandoned Shipwreck Act but it had not yet become law.

In 1988, a U.S. District Court in Florida, using general admiralty law principles, granted Randy Lathrop a salvage lien, or ownership interest, in what he believed to be a sunken 18th century Spanish galleon and its cargo located in the waters of Canaveral National Seashore. In April 1990, however, the State of Florida required Lathrop to abide by its regulatory scheme and obtain a permit before conducting salvage operations. He applied to the State of Florida Division of Historical Resources but the State Archeologist and Chief of the Bureau of Archeological Research denied Lathrop a permit because a salvage contract would be inconsistent with an agreement between the State of Florida and the Federal Government specifying Canaveral National Seashore's proper use. The Federal Government took a similar position.

Lathrop won a preliminary injunction enjoining the United States from interfering with his salvage operations. The issue presented at the hearing was ownership of the alleged shipwreck, which the court awarded to Lathrop under general admiralty principles. Subsequently, the State of Florida also sought an order prohibiting Lathrop from excavating, which by this time consisted of dredging large craters in the ocean floor that were damaging the site. Florida, too, raised the issue of title to the alleged shipwreck, resulting in U.S. District Court denial of Florida's motion. Lathrop was edging closer to obtaining Florida's permission to begin operations when, in July 1991, the United States, through the Army Corps of Engineers (COE), asserted its paramount regulatory interest in protecting Canaveral National Seashore from further, unprofessional excavation. COE told Lathrop he would need a permit from them before resuming salvage activities.

In 1992, after both the State of Florida and the COE denied his request for a permit, Lathrop filed a second motion for preliminary and permanent injunction preventing the United States from requiring him to obtain a permit. In April 1993, the U.S. District Court for the Middle District of Florida denied Lathrop's motion. The Court held that Congress can supplement substantive admiralty law by regulating salvage activities and the U.S. can require a potential salvor of an alleged historic shipwreck to comply with Federal law requiring a permit before conducting salvage activities in a National Park.

Training

Federal agencies provided ARPA training to law enforcement officers, managers, archeologists, and other personnel. Training programs on archeological resource protection continued to be provided at the local and regional levels. By 1990, almost 3,000 law enforcement personnel and archeologists had received training [Hutt, letter dated July 5, 1990]. Technical training like the use of surveillance equipment is being developed by agencies to complement standard ARPA enforcement programs.

During the period from FY 1991-1993, the Federal Law Enforcement Training Center offered the comprehensive (40-hour) course on ARPA [NOTE: The number of trainees could not be ascertained]. This course provides the most intensive training available for field investigation techniques and methods. The course, "Overview of Archeological Protection Programs", is available in 4, 8, and 12-hour versions. Lesson plans from this course are available to agency personnel who wish to structure their own training programs.

Training was developed for attorneys and solicitors, and a training sourcebook was co-published by NPS and the Department of Justice (DOJ) titled *Archeological Resources Protection: Federal Prosecution Sourcebook*. The sourcebook is used as the principal text for the nationwide training course, "Overview of Archeological Protection Law". It was distributed to United States Attorneys, chief Federal law enforcement officers, and solicitors. These training and education initiatives encourage a team approach among law enforcement officers, archeologists, and attorneys. The training, cosponsored by NPS and DOJ, is the first step in a comprehensive effort to introduce archeological resource protection to all law enforcement jurisdictions. In 1991, nearly 200 participants representing Federal and State agencies, sheriff and police departments, and Indian tribes attended.

DOA installations trained their military police and have mandatory briefings for new recruits, Army Reserve training units, and National Guard units that train periodically on the posts. NPS offered sections on archeological resource protection at Chief Ranger's workshops and the Ranger Refresher training. NPS, in cooperation with the California U.S. Attorney's Eastern District Office, held three training classes attended by 107 participants from local, State and Federal agencies, and Indian tribes. DOE is training its security officers and, at the Richlands Operations office, is providing the local Sheriff's Department with training. BOR also trains local law enforcement authorities, since it relies on them to

assist with enforcing ARPA. MMS held a Bureau-wide archeological resources protection workshop for its personnel.

TVA trained archeologists, law enforcement officers, and park rangers from various agencies. The training covered the identification of archeological sites, case studies, the role of archeologists, the role of the Office of the Inspector General, intelligence networks about looters, how to investigate violations, and prepare cases. TVA has trained 152 of its officers, 17 land management personnel, 23 state and local law enforcement officers, and 34 rangers, managers and archeologists from NPS, FS and COE.

Planning and Protection Strategies

ARPA encourages agencies within the Department of Agriculture, DOD, DOI, and TVA to develop archeological protection plans that identify the most vulnerable sites and areas with significant resources needing survey. Surveys are being undertaken by agencies, yet few have developed a comprehensive protection plan. Only TVA has created a national plan and begun to implement procedures for criminal and civil enforcement. The plan addresses case actions, reporting violations, giving notice of civil violations, conducting criminal investigations, and identifying responsible parties. It also emphasizes increased cooperation with outside law enforcement agencies to conduct investigations of archeological resource violations on or off TVA property. This plan is an ideal working model for other agencies.

FS, Pacific Northwest Region developed a regional site protection plan that is being implemented with systematic field studies on National Forests in Oregon and Washington (Davis 1993: 31-35). By the end of FY 1993, nine studies had been initiated or completed. The studies document for the first time the magnitude of such effects as looting, natural deterioration and inadvertent damage caused by agencies. These effects are examined individually and cumulatively. It also identifies strategies to record site damage and to establish a protection program that includes monitoring, rehabilitation, interpretation, and education. The monitoring plan is to check significant sites that are vulnerable to damaging activities on a regular basis. The protection plan is integrated with the Forest Management Plan, a long range plan that outlines multiple resource management strategies over a 50 year period.

Federal agencies are using volunteers to help with site monitoring. The Anasazi Anti-Looting Project, sponsored jointly by the Sierra Club, FS and BLM, involves the inventory and documentation of Anasazi

pueblo sites in southeastern Utah. Protection strategies are then developed for areas with a high incidence of looting. The Sierra Club's Native American Sites Committee uses volunteers who work under the guidance of professional archeologists to monitor sites and identify, record, and assess the degree of looting.

The highly praised Arizona Site Steward Program is an organization of volunteers, sponsored by public land managers of Arizona and Tribal governments, whose members are selected, trained and certified by the SHPO and the State's Archaeology Advisory Commission. Volunteers monitor sites and report to the land managers about the destruction or vandalism of archeological sites under their jurisdiction. Volunteer training involves 3 hours of classroom and 5 hours of fieldwork. In 1993, some 400 stewards visited over 600 sites (Arizona SHPO, 1993). These structured programs are successful because volunteers have a strong interest in heritage and cultural resource conservation, are awarded for their efforts, and receive appropriate training and supervision by professionals.

Aerial surveillance is being used more widely by agencies, sometimes in conjunction with other surveillance activities. This approach is particularly important for protecting remote areas with limited staff and funds and for reducing the response time to address the most seriously threatened resources. BLM used aerial surveillance, sometimes in cooperation with the Civil Air Patrol, in working with ground units. NPS employed aerial surveillance at the Lake Mead NRA to monitor sites. DOE's Savannah River facility and Idaho National Engineering Lab used ground and air patrols providing protection against trespassing and archeological site damage.

Interagency coordination

Undercover operations require extensive cooperation and coordination among agencies. Operation Export, a long-term undercover operation in the Southwest, was carried out using confidential informants with special agents of the Four Corners ARPA task force. The operation targeted diggers, sellers and buyers in New Mexico and Colorado. This effort required the cooperation of the Federal Bureau of Investigation, Customs, FS, and the Internal Revenue Service. Another sting operation sponsored by NPS, BLM and the Office of the Inspector General in Utah successfully prosecuted a man for buying artifacts illegally taken from Zion NP in violation of ARPA. One difficulty with sting operations has been maintaining administrative and financial support from management for extended periods of time.

Operations usually require the long-term commitment of personnel, which can effect other needed resource management.

Interagency coordination is the backbone of successful ARPA prosecutions for agencies managing large land bases. Sharing information about current activities and prosecutions is necessary to build better protection programs and to define prosecution strategies. Regional, interagency task forces are appearing throughout the West, such as the Interagency Mobilization to Protect Against Cultural Theft, the Chaco Canyon Protection Sites Program, and the Northeastern California Archeological Resources Protection Task force. These task forces utilize overt investigations, undercover operations, computerized intelligence databases, and collection of specific information through investigations with cooperating agencies.

Local field offices frequently share resources with Federal, Tribal, State, and local agencies managing adjoining lands. DOA and the FS have co-developed archeological resource protection strategies at Fort Leonardwood and the Mark Twain NF in Missouri. In the Pacific Northwest, NPS, FS and Tribes are cooperating on the surveillance of park and adjacent lands. DOE facilities work closely with the special law enforcement branch of BLM. Most land management agencies reported similar examples.

To improve efficiency, NPS and FS used expert teams, who travel within a region to assist field units. For example, in the Southeast Region, the NPS Archeological Center sends a team of archeologists to assist with crime scene investigation and to prepare the archeological damage assessment. The FS, Pacific Northwest Region has an ARPA task force that provides technical assistance to National Forests involved in site protection issues and casework (Davis 1993). Task force members help process artifact collections recovered during search and seizures, lead teams conducting site damage assessments, and provide investigatory assistance.

The weakest link in the protection chain is the lack of a centralized reporting system at the national level. Key information about ARPA law enforcement efforts is not being captured in a uniform manner. BLM is working towards operationalizing a uniform computerized system, referred to as LAWNET, that will be maintained at headquarters. This network will incorporate information on ARPA incidents that currently is being tracked on paper forms. Some BLM Districts already have developed independent databases.

DOI produced an annual law enforcement program report that uniformly reports crime from its agencies. However, this report does not separately track archeological resource violations and associated law enforcement costs. The NPS central office does not track archeological resource crimes. However, some parks and regions in NPS have developed methods to track ARPA information. For example, Lava Beds NM produced an ARPA report under the NPS Case Incident Reporting System. Interestingly, this report included information from neighboring Federal lands. The North Atlantic Region developed a clearinghouse for information on the name, drivers license number, and car license plate number of any person who has been cited under ARPA or 36 CFR Part 2 for archeological violations. This information is distributed to law enforcement at other parks in the Region.

Other agencies did not report on their methods of reporting archeological resource crime. However, a record of ARPA convictions on Federal and Tribal land is maintained by NPS in the Listing of Outlaw Treachery (LOOT) clearinghouse. LOOT is a database that contains summaries of about 275 prosecuted cases. The case information is used to improve prosecution efforts nationwide and guide case development. LOOT is the most comprehensive compilation of ARPA data nationally, but has limited value for assessing the number and type of incidents and non-ARPA archeological resource crimes.

International Trafficking and Intergovernmental Efforts

Section 113 of NHPA calls for a study and report on the methods and alternative strategies to help control illegal interstate and international traffic in antiquities. In 1993, NPS initiated the study on behalf of the Secretary of the Interior. The study is the first systematic and comprehensive overview of the issue involving expert participation globally. Preliminary findings (Morton 1994) indicate clearly that illegal trafficking is closely tied to the looting of archeological sites. Theft of cultural materials from museums, libraries, and other public institutions is at an all time high. Most illicit trafficking in antiquities is commercial and is linked to other illegal activity. Large quantities of American antiquities are entering the international market and permanently leaving the country. ARPA has had little effect on this problem.

Intergovernmental organizations are assisting nations with developing policies and guidance on international trafficking. The United States and 71 other nations support the 1970 United Nations Economic and Social Council (UNESCO) Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property. In 1984, UNESCO asked the

Institute for the Unification of Private Law (UNIDROIT), a private international organization with over 50 member States, to work toward restricting the flow of antiquities from source States to market States. The UNIDROIT Convention on the Return of Stolen and Illegally Exported Cultural Property has been working on a draft treaty, which, when implemented, would have a major impact on the trade of illegally obtained archaeological materials. The U.S. State Department, the lead agency at the convention, utilizes input from NPS, the Association of Art Museum Directors, the U.S. Information Agency, Art Dealers Association of America, the SI Office of the General Counsel, and others on a variety of protection issues.

The goal of the UNIDROIT Convention is to create a unified private law code whereby claimants in States that are party to the convention may sue in the courts of another signatory State for the return of stolen or illegally exported cultural objects. Cultural objects are those that are of importance for archeology, prehistory, history, literature, art, or science. The professional archeological community in the U.S. wants to include language promoting *in situ* preservation, since many cultural objects are looted from archeological sites. Other important issues to be addressed by the UNIDROIT Convention include more explicit export restrictions on cultural objects and returning cultural objects of outstanding importance that were taken illegally prior to ratification of the treaty.

Other organizations and agencies, such as the International Committee on Museums are joining the fight against international looting of cultural property. The U.S. Information Agency continues to implement import restrictions on cultural artifacts upon request from countries where they were illegally obtained. Some Federal agencies are working cooperatively to prevent the illegal import of cultural objects across the border. For example, the NPS Amistad NRA has a cooperative agreement with Customs, the Border Patrol, Texas Parks and Wildlife, and Seminole Canyon State Park to address archeological looting and object importation from Mexico.

Summary

Land management agencies recognize the value of archeological protection and law enforcement for the long-term preservation of archeological resources. A refined picture of looting is emerging from the systematic monitoring efforts by agencies and increased reporting of violations by the public. However, the actual number of incidents reported are far less than what is likely occurring. Regional studies of

looting demonstrate that the predicted rate of loss is far greater than what is being reported (Davis 1993; Anderson and Horak 1993). BLM and NPS reported the most incidents, and FS probably shared similar problems. All land management agencies except AF reported violations on land under their jurisdiction.

Few agencies, however, are moving beyond identifying the problem to implementing prevention strategies through comprehensive protection planning. Although progress is being made with successful prosecutions, arrest rates have leveled while incidents are increasing. Agencies need to follow the lead of TVA and develop comprehensive protection plans with corresponding budgets to build a strong and consistent law enforcement program.

While the number of ARPA prosecutions has increased, agencies continue to favor using other authorities to prosecute individuals. Two factors that contribute to this trend are the poor record of past felony convictions and the expense and time needed to prosecute a case. Agency managers and prosecutors should emphasize more prosecutions under ARPA. Civil proceedings also are not being used in lieu of ARPA criminal charges. Civil proceedings require less time, are more cost-efficient, and damage assessments can be collected directly by the agency with jurisdiction and used immediately for site restoration work. By 1993, only one civil case had been reported. Federal agencies should actively pursue civil penalties under ARPA. Land managers should seriously weigh the effectiveness and economy of civil prosecution to increase the percentage of convictions. Civil prosecution also deters looting and provides managers a better method to recover site damage costs.

Interagency cooperation is being used more effectively to successfully develop ARPA criminal cases. Multi-agency task forces are carrying out systematic monitoring, incident investigations, and covert operations transcending jurisdictional boundaries. ARPA undercover investigations have proven successful for reducing illicit trafficking at the regional, national and international levels, and should be continued. Federal agencies with adjoining land frequently share resources and should consider using permanent task forces. The use of expert teams is an effective method for rapidly handling incidents and cases. Also, agencies should continue to use volunteer programs to assist in site monitoring.

Training and interagency cooperation are needed to support law enforcement efforts. Public education is instrumental to the long-term protection of archeological resources (See Chapter 6; Education and Public Outreach). Congress clearly recognized the importance of education with the 1988 amendments

to ARPA. Archeologists, especially those working for public agencies, recognize that public support is essential to resource preservation. Most land management agencies sponsor outreach programs and are active participants in State and local programs, such as archeology week and teacher workshops. Public participation and volunteerism have become part of base operations in agency heritage programs. More importantly, agencies are actively involved with formal education programs that instill a preservation ethic in todays youth so that they will become better stewards in the future.

Training is available locally for archeologists, law enforcement, attorneys, and managers through the 40-hour ARPA course and its regional version sponsored by the Federal Law Enforcement Training Center. These courses advocate the team approach involving archeologists and law enforcement in investigating and prosecuting ARPA looting cases. A new training program developed by NPS and DOJ for lawyers and judges has met with great success. The results of improved training opportunities are evident in the rising numbers of prosecutions and convictions. Many agencies now incorporate ARPA in their law enforcement training programs. Some States now offer training for SHPOs and law enforcement personnel. Training can be improved in the following areas: (1) Having agencies train employees, concessionaires, contractors, permittees, and other groups that use public land (2) Providing archeologists with site damage assessment training (3) Training Federal agencies and Indian Tribes on the use of ARPA's civil penalties.

Agencies and organizations are forming partnerships to share information. Interagency task groups, such as the Interagency Mobilization to Protect Against Cultural Theft (IMPACT) organized by BLM and the Interagency Archeological Protection Working Group coordinated by NPS, are working together to develop and implement protection strategies nationwide. The Interagency Archeological Protection Working Group is encouraging increased coordination at the national level between chief law enforcement officers and departmental solicitors of Federal land managing agencies, DOJ attorneys, and representatives from other law enforcement agencies. However, the following improvements are needed: (1) Improve communication within and between agency specialists (2) Hold workshops for law enforcement and archeologists (3) Use a centralized data base for tracking archeological resource violations (4) Standardize ARPA terminology for reporting purposes.

6

EDUCATION AND PUBLIC OUTREACH

Introduction

A broad array of archeological experiences is available to the general public within the Federal archeology program. Field schools for the public often are conducted on archeological sites located on public land. Volunteers can select from many opportunities ranging from researching family histories to participating in archeological field work. Beyond this, archeological information is reaching a wide audience through brochures, videos, exhibits, and on-site interpretive trails. Heritage tourism is having a positive impact on economic rural development. Also, elementary and secondary school teachers are finding more curricular materials about archeology for classroom use. Federal agencies are contributing significant time and effort in these and other education and public outreach programs.

Federal agencies are expanding their archeological programs into public education in large part because of anti-looting efforts generated in the 1980s. Site protection efforts spawned many of the educational successes evident today. Clearly, public participation is integral to the future of conservation archeology. Congress recognized this need by passing an amendment to ARPA, which requires Federal land managers to establish programs to increase public awareness of the significance of archeological resources.

The Save the Past for the Future project, sponsored by SAA, laid the groundwork for a national partnership involving federal agencies, national and state organizations, and private foundations to develop strategies to further preservation of our archeological heritage (Reinberg 1991:271-276). The Taos Working Conference, held in 1989, produced a series of recommendations and actions to promote site protection efforts. The resulting publication, *Action for the 90's*, outlined several recommendations focused on education that are guiding efforts today (SAA 1990: 9-17):

(1) The public must be informed about archeology, its benefits and the affect of looting on these benefits.

(2) Education and training must be improved to inform and sensitize the public and target groups. (3) The public should be provided with alternative ways to participate in archeology, ethically and legally, including avocational societies and volunteer projects.

Federal agencies and other organizations were to work in partnership toward establishing and funding programs. Several detailed recommendations were: (1) Develop a national archeology curriculum guide for K-12 (2) Evaluate the effectiveness of educational materials (3) Integrate archeology in other natural resource programs (4) Evaluate existing public education programs for their educational objectives and target audience (5) Encourage certification programs for avocationals and recognize their participation in archeology (6) Create opportunities for the public to see and handle "inaccessible" collections in museums (7) Expand volunteer programs that are professionally supervised.

National Partnerships

As educational programs spring up in many agencies, developing a national archeological education strategy is a strong concern (Rogge 1991). Coordinated efforts are essential to produce a coherent strategy and assure that quality educational materials are distributed to teachers. What are the core archeological principles that we want to teach? Who are the publics, what do they know, what do they need, and how do we effectively communicate the message? (McManamon 1991a). These questions are not new, but are basic to developing any educational program.

The SAA Public Education Committee continues to promote awareness about and concern for the study of past cultures, and encourages the preservation of cultural resources. This energetic and productive group of about 50 volunteers, who are members of the SAA and represent all sectors of public archeology, collectively have produced numerous products. The most visible and popular item is the newsletter, *Archaeology and Public Education*, established in 1991 with a readership of nearly 10,000. A network of state and Canadian provincial coordinators was established to assist both archeologists and the public with gathering and distributing local and regional information on educational programs and resources, ideas about educational programming, and potential speakers.

In the reporting period the Committee developed the Resource Forum, composed of over 100 items, including teaching manuals, newsletters, resource guides, books, games, videotapes, and posters. The

Forum is a travelling exhibit displayed at national and regional meetings for a variety of professional organizations including SAA and the National Council ror the Social Studies. Plans are underway, in cooperation with NPS, to publish an annotated bibliography of the Resource Forum. Also, the Committee encourages and works on state archeology week activities, giving awards to outstanding educators, improving academic curriculum, promoting archeology and preservation, and helping in Native American education. Workshops for elementary and secondary teachers are offered annually at the SAA meetings. The Committee also produced a model curriculum for archeology.

The Public Awareness Working Group, comprised of 33 Federal agencies and coordinated by NPS, continued to improve public awareness of Federal archeology by producing and distributing educational material. The *Take Pride in America* archeological theme bookmarks produced in 1988 were distributed to about 5,000 people annually. The brochure *Participate in Archeology* was produced in 1991, showing how people can learn more about and participate in archeology and resource protection. Over 150,000 copies have been printed and distributed in the reporting period. The book *Archeological Resource Protection* (Hutt et al. 1992), which is an overview of archeological protection law was printed with funds generated by this group.

The Intersociety Working Group met annually, bringing together the SAA, the Society for Historical Archeology (SHA), American Anthropological Association, Archeological Institute of America, NTHP, FS, BLM, and NPS. Several issues of shared interest were identified, including evaluating precollegiate education materials, establishing a nationwide network to gather and distribute them, and developing an annotated guide of such items.

Agency Initiatives

The development of public outreach activities is one achievement evident in all agency cultural resource programs over the last decade. These programs often are multi-agency efforts bringing archeological information to the public in a readable format and inviting their participation in cultural resource programs. It is important that agency archeologists respond to these desires through active public outreach. Several notable programs from the period FY 1991-1993 are described below.

BLM Partnership Programs

•In Arizona, the Dankworth Village Outdoor Classroom provides an educational experience for local school children to learn about the cultural history in their community.

•In Alaska, the discovery of the Mesa site was reported in about 2,500 U.S. and Canadian newspapers and is being filmed for a public TV documentary.

•The Oregon Trail Sesquicentennial was celebrated with theatrical performances, trail preservation activities, poster production, school contests, exhibits, and a living history wagon train. About 348,000 visitors toured the National Oregon Trail Interpretive Center during 1993.

•The Great Basin Tribute recognized the history of Nevada, California, Idaho, Oregon, and Utah. The program included exhibits on archeology and artwork by contemporary Great Basin Native Americans, as well as the regions history of ranching, mining, vernacular architecture, and transportation.

Adventures in the Past

BLM created the Adventures in the Past program in 1989. The goal is to increase the public's enjoyment and encourage wise stewardship of cultural resources. In 1991, an interdisciplinary team of BLM educators and archeologists created the Heritage Education Program. The long-term strategy of this program is to strengthen children's sense of personal responsibility for the stewardship of America's cultural heritage. Educational experiences and teaching resources are offered for the school setting as well as for outdoor classrooms, museums and other informal learning environments (Heath 1994).

From the Heritage Education Program, Project Archeology and State partnership programs were established. Project Archeology is for teachers and youth group leaders and is taught using the existing elementary and secondary school curriculum. It provides hands-on activities to teach children about the science of archeology and about stewardship of cultural resources. The program includes three components: Educational materials, teacher training workshops, and on-going teacher support.

The primary source book is *Intrigue of the Past: A Teacher's Activity Guide for Fourth Through Seventh Grades*. The text won the 1992 Environmental Education Award at the Utah Society for Environmental Education's conference. Under this program, archeology resource guides tied to local curriculum and local cultural resources are provided to teachers through a series of workshops. The initiative piloted by the Utah State Office and now being developed by other States, reaches 10,000 - 12,000 students annually in Utah (Smith, et.al. 1993).

An example of a Project Archeology program is the creation of a teacher institute with the Utah Museum of Natural History. The institute includes teachers and social studies curriculum directors from Utah's 40 school districts. Teachers are taught about archeological activities (e.g. flintknapping) and receive credits for attending. They return to their home districts and with an archeologist conduct a workshop for their peers. Because many threatened cultural resources are located in rural areas, rural school districts are targeted for the workshops. The teacher institute is a mechanism to establish a network of trained teachers statewide (Smith 1991).

Students apply mud to a pithouse reconstruction at the Pankworth Village site in Arizona.
Marion Botsford/Bureau of Land Management

The BLM's State partnership program helps local field offices compete for national funds to produce educational projects. A good example is the Spain '92 Foundation celebrations. The project involved partnerships with the government of Spain, the Universities of Arizona and New Mexico, the Arizona Humanities Council, the Art Students League of Denver, FWS, NPS, and many others. Indian and non-Indian scholars and the public were brought together in symposia to gain a better understanding of the role of Spain in exploring and colonizing the Americas and in influencing the development of the American Southwest.

Windows On the Past

The FS Windows On the Past initiative was originally defined in a Service-wide National Recreation strategy to improve visitor services. The strategy was based on the growing public demand for interpretation of cultural resources and the need to provide recreational and educational experiences for visitors. A vital component of this strategy is to provide opportunities for the public to participate in the

cultural resource program. These opportunities include volunteerism, partnerships, and cost-share programs. A variety of projects resulted including brochures, exhibits, interpretive trails, site tours, and field schools. The most exciting outgrowth was the Passport in Time program (Osborne 1994a,1994b).

Since its inception in 1988, Passport in Time has become a national program that has offered over 350 projects to more than 3,000 volunteers. By the end of FY 1993, dramatic results have accrued: (1) The number of annual projects have increased from 9 to 111: (2) The number of annual volunteers have increased from 51 to 1,238: (3) Volunteer contributed hours have risen dramatically from 4,174 to 53,871 annually. The program is devoted to research and heritage preservation, while providing volunteers with a "sense of ownership and a vested interest in the care of heritage resources" (Osborne 1994b:16).

Teaching with Historic Places

Teaching with Historic Places is an educational program developed by NPS and NTHP (Boland 1992). Historic properties listed in the NRHP are used by elementary and secondary school teachers to enhance class instruction of history and social studies. The program includes lesson plans, educational kits, and instructional materials related to specific historic themes. Teachers are introduced to the lesson plans and create new ones at workshops. They are useful for both the classroom and on-site visits, and expose students to significant places located in their community.

Public Interpretation Initiative

The Public Interpretation Initiative was developed by NPS, Southeast Region (Jameson 1991, 1993) to effectively communicate information about archeology to the general public. In particular, the interpretation of archeological materials suffers from poor communication among archeologists, professional interpreters and educators. Interpreters and educators often have difficulty translating the highly technical nature of archeological research into understandable English, while archeologists often have difficulty discerning and communicating the salient points of their research to interpreters, educators and the general public.

The training course, "Issues in the Public Interpretation of Archeological Sites and Materials", was developed to bring archeologists and interpreters together to learn about their respective roles in designing

effective presentations of scientific data to the public. The strength of the course is its use of a multi-disciplinary team approach to effectively apply interpretive methods to archeological programs.

Several workshops and symposia have resulted from the initiative. "Toward Sensitive Interpretation of Cultural Resources in a Multi-Cultural Society" was held at the 1993 SAA annual conference, and "Conveying the Past to the Future: Interpreting Cultural History for Young Audiences" was held at the 1993 annual conference of the National Association of Interpretation. In addition, a publications program was initiated to summarize and rewrite technical reports for the general public. The first in the series titled *Beneath These Waters: Archeological and Historical Studies of 11,500 Years Along the Savannah River*, chronicles 15 years of archeological and historical research in the Richard B. Russell reservoir. The 1993 publication received an Achievement Award in the International Technical Publications Competition by the Atlanta Chapter of the Society for Technical Communication.

Outreach Programs

Classroom education is the fastest growing activity in Federal agency programs. The BLM's Heritage Education Program is a leader in this area. Other agencies are also working in this direction. NPS holds workshops for Alaska teachers, and FS sponsors the Ketchikan Teachers' Institute, which provides teachers with an overview of local native cultures and ways to bring multicultural education to their classrooms. In Nevada, DOE sponsors a teacher fellowship program that provides high school science teachers with the opportunity to work with professional archeologists. DOE's Hanford facility offers opportunities for high school, college, and graduate level interns to participate in professional research, and funds teachers through the Teacher Research Associate Program.

Native American education is receiving some needed attention by Federal agencies. The DOE's Hanford facility actively works with students on nearby reservations. BLM worked closely with the Santa Fe Indian School on developing interactive computer programs about the prehistory of the Tewa Pueblo and Hupobi Pueblo. A multi-agency partnership from states in the Four Corners area with endorsement from the Arizona Inter-Tribal Council, Hopi, Indian Pueblo Council in New Mexico and the Gila River Indian Community are producing a video series for PBS. The video is designed to improve public perception of the value of prehistoric and historic cultural resources, archeology, and the accomplishments of ancient Native Americans.

Public Education Programs

•In Arizona, BLM, in cooperation with the Arizona Archeology Council and Coronado National Forest, compiled essays and graphics for the Arizona State teachers activity guide.

•In Florida, Eglin AFB is using the America 2000 initiative to bring archeology to the classroom.

•In Nevada, students of Reno's B.D. Billinghurst Middle School initiated a campaign to have ancient duck decoys from Lovelock Cave, located on BLM land, returned to the State from the Museum of the American Indian in New York.

•FWS provided on-site tutorial sessions for thousands of students each year on the importance of the Bertrand Steamboat artifact collection.

•In Alaska, NPS conducted a workshop for Alaska natives that included a module on archeological site protection and stewardship.

•In Nevada, the DOE's Yucca Mountain facility sponsored public tours and presentations directed toward protection and consultations with concerned Native American groups. These involved permanent displays, travelling exhibits, slide shows, and other public talks.

•In California, BOR used an interpretive display company to develop displays and educational materials for New Melones Visitor Center that examine the cultural and natural history of the Stanislaus River area near the New Melones Reservoir.

•In Virginia, NPS developed a travelling interpretive exhibit on the historical archeology of the Civil War that was displayed at the visitors centers at Manassas NBP during Virginia Archeology Week.

•In Montana, OSM produced two films, "Against the Darkness"(1991) and "Pauper's Dreams"(1992) which depicted the development of coal and metal mining in the state.

•In Alaska, MMS co-sponsored Alaska Archeology Week, including a children's program titled "Adventures in Archaeology".

Federal heritage programs received substantial benefits from volunteers. The BLM cultural heritage program received 13% of all volunteer time donated to the agency. Between 1991 and 1993, volunteers contributed about 450,000 hours equivalent to roughly $6 million. During the same period, volunteers contributed roughly 9,000 hours in NPS archeological services totalling about $1 million. The Arizona Site Steward program frequently is used by agencies as a model for site monitoring and land management

(Hoffman 1991). Avocational archeology groups are also participating in agency programs, but data are not available on the nature and success of these activities. Site protection efforts can be improve by seeking the assistance of avocational archeology groups (Davis 1990, 1991).

Most Federal agencies conducted interpretation projects during FY 1991-1993. Land management agencies reported developing exhibits at historical societies, local museums, project areas, and national meetings. GSA developed final plans for the museum devoted to the African Burial Ground in New York. DOE's Brookhaven National Lab has a science museum with an exhibit on the history of the property during operation as Camp Upton from 1917 to 1921. The museum attracted 20,066 visitors in FY 1991, 18,000 visitors in FY 1992, and 20,000 visitors in FY 1993. An international travelling exhibit, "Crossroads and the Continents" was sponsored by SI and MMS.

Video presentations are a popular interpretive media because of their enormous potential for presenting sophisticated messages to a variety of audiences. BLM in Montana assisted New Dominion Pictures with filming *Ice Age Crossings*, a Learning Channel archeology series presentation. NPS helped produce a video for television in the Washington metropolitan area about 19th century African-American sites discovered at Manassas NBP. The DOE's, Hanford facility helped develop videos for public television on respecting Native American cultural interests and protecting archeological sites.

Public outreach is becoming a standard requirement in Federal cultural resource management projects. GSA produces brochures and other materials as a routine component of data recovery programs. FERC often requires licensees to prepare public programs about archeological sites in project areas by publishing articles in popular and technical journals for distribution to Native Americans and the general public. BOR requires contractors to sponsor open houses and other events during site evaluation projects.

Statewide archeology events are found in over thirty states across the country. Between 1983 and 1992, twenty two states held archeology weeks. Five had activities for either a day or a weekend (Greengrass 1993: 6-7). Attendance figures reported from 14 states in FY 1991 ranged from over 300 to 122,000 people (Greengrass 1993: 9). Federal agencies with other partners have a prominent role in organizing and sponsoring these events. Federal agency support and involvement is critical in rural areas that are difficult to reach during a state activities.

National Park Service, Southeast Archeological Center Exhibits at the First Florida Archaeology Week
Southeast Archeological Center/National Park Service

Summary

As pointed out by Smith and Ehrenhard (1991:104): While there are a number of excellent programs being used to disseminate archeological information through public school systems, they have evolved with little coordination and direction. In 1993, at the "Save the Past for the Future" working conference, participants in the education workshop recognized a need in this area and recommended the following: (1) Develop a national clearinghouse for the collection and dissemination of information on archeological resource materials and programs nationwide (2) Develop minimum standards for education programs (3) Conduct studies to determine the effectiveness of programs and target groups, particularly private landowners (4) Strengthen coordination with national leaders in education agencies.

Native Americans and avocationals should become actively engaged in Federal agency public education programs. Tribes are developing programs to better manage cultural resources on tribal and ancestral lands. They have a genuine interest in how Native Americans are portrayed to the general public. Federal agencies need to join them as participating partners in their educational efforts. Avocational archeology organizations also provide an immediate and energetic source of support and assistance for cultural programs. In turn, avocational societies need certification and training programs to fully participate in archeological work. Communication must be expanded between avocationals and professionals to create a better understanding of each others' expectations.

The success and variety of education and public outreach in the Federal archeology program demonstrates the vigor and personal commitment of agency archeologists to promote archeological stewardship. These efforts frequently are performed under funding constraints and constant challenges to maintain a functional cultural management program. The future is no less challenging, with reorganization and restructuring in the Federal government and the redefinition of program functions. Strong and long-term partnerships among agencies and other organizations, Native Americans, and the public must be maintained to sustain the current level of educational and outreach programming.

7

FEDERAL ARCHEOLOGY PROGRAM EFFECTIVENESS

Introduction

The Federal archeology program is a major component of the national historic preservation effort. The program encompasses the preservation efforts of over forty Federal agencies and departments and their partners. These agencies manage 32% of the U.S. land base. The Federal program is highly visible in the Western states, where most public land is located but is also important in the Eastern states, where Federal and non-Federal land is intermingled. This checkerboard pattern of ownership requires considerable cooperation between owners and managers to successfully preserve archeological sites. In fact, partnerships are crucial in carrying out Federal archeology programs.

Most Federal archeology studies occur on public land within the context of land use and development. Land development has been increasing, as reflected by the steady annual increase in archeological activities conducted for these Federal undertakings. More planning and overview studies are being conducted, which shows a stronger commitment by planners to gather sufficient information about archeological resources early in the environmental analysis. This effort will help land managers measure a proposed development's effect on the resources and make informed decisions about appropriate treatments for sites. Tribal involvement in archeological planning is steadily improving. Agencies are consulting with Indian tribes on treatment and protection issues under the National Environmental Protection Act, NHPA, ARPA, the American Indian Religious Freedom Act, and NAGPRA. Land management agencies are training staff to improve the timely gathering of information for Section 106 compliance and to implement diverse cultural resource programs. Agency staff conducted or supervised the majority (83%) of authorized investigations on Federal land in FY 1993.

An estimated 7 million archeological sites are located on Federal and Tribal land, of which 7% are known. The long-term management of known archeological resources is the single biggest challenge facing land management agencies. Site preservation continues to be threatened by both natural

deterioration and that caused by man, which is occurring in higher frequencies than past years. Site protection requires management strategies that go beyond avoiding sites during land use. It requires commitment to long-term site conservation practices and to research remedies for site disturbance. COE's research and active publication record on this subject are highly commendable. But land management agencies need to focus more on site conservation. The actions being taken to deter looting are discussed later in the chapter.

Another notable shortcoming is the small percentage of known sites being evaluated for the NRHP. Although the number of evaluations is increasing, it is not keeping pace with the rate of site discovery. By the end of FY 1993, the majority (67%) of archeological sites were unevaluated. Site evaluation generally requires an intensive level of investigation to collect the information needed to make determinations of eligibility. For small, land use projects, such as pond or trail construction, planners seldom schedule the time and money needed to evaluate discovered archeological resources. Rather, sites are avoided and left uninvestigated. Federal agencies, in coordination with SHPOs, need to conduct more thematic evaluations and use more cost-efficient and reliable methodologies for determining site significance. As a result, protection strategies can be focused on the most significant sites. In addition, the knowledge gained from evaluation studies can be used to better inform the public about the nation's history and prehistory and the benefit's of public archeology.

The impact of Federal archeology on private land is difficult to measure and evaluate. Many development and regulatory agencies reported little data on their archeological work, which occur predominantly on private land. For example, FHA and the HUD transfers funds to the States without a reporting requirement on their archeology-related expenditures. With no long-term management responsibility for these resources, these agencies maintain little information about the extent and cost of their cultural resource programs. Instead, they place the burden of maintaining information on the SHPOs. Section 112 of NHPA is clear about the responsibility of agencies to maintain records about their cultural resource activities. These agencies need to develop policies or procedures for collecting this information.

In 1991, the Secretary of the Interior identified some key strategies for improving Federal archeology nationally (Lujan 1991). These strategies have been used to launch major national initiatives, such as "Save the Past for the Future", an effort focused on developing strategies to curb the relentless looting

of archeological sites (Reinberg 1991, SAA 1990, 1994). The reported data from the FY 1991-1993 program are examined below within the framework of the Secretary's strategies.

Public education and participation

Federal agencies have considerably increased their participation in public education and outreach. Two initiatives developed in the late 1980s, the FS "Windows on the Past" and the BLM "Adventures in the Past" programs, continue to provide outstanding educational services to the public. Educational materials are developed for classroom use, and volunteers work under professional supervision on a variety of field work projects. Archeological interpretation is a growing component of recreation programs offering on-site and museum experiences and informational products (e.g. brochures, exhibits, videos). In both programs, activities expanded nationwide and continue to offer services at minimal cost to participants. One positive outcome is broad popular support within and outside the agency for continued program development and funding.

NPS offers education products as part of its visitor services program. In 1991, Congress authorized funds for the "Parks as Classrooms" initiative to further NPS's education goals. Examples of archeology and education projects that have been funded are "The Ancient Ones/Preservation of Archeological Resources Canyon Country Curriculum Unit" at Mesa Verde NP and "Archeology of the Iron Works" at the Saugus Iron Works NHS. Other agencies have undertaken project-related outreach and interpretive efforts, such as requiring contractors to conduct open houses on sites being investigated and developing brochures and exhibits for outdoor interpretive sites and museum collections.

Volunteers are providing needed support and services for many innovative research projects on public land. They are participating more than ever in agency cultural resource programs and are contributing directly to preserving the past in their local communities. Since few agencies provided information on the number of volunteers, hours contributed, and associated savings, the breadth of volunteerism is difficult to capture. NPS and BLM together reported 459,000 contributed hours equivalent to $7 million over the reporting period. The FS Passport in Time Program reported over 53,000 contributed hours in archeology and cultural programs in FY 1993. In order to measure the success of outreach programs and to keep pace with satisfying public needs and desires, agencies need to track closely public contributions to their programs and evaluate their effectiveness.

Knudson et. al (1995) expressed concern with the lack of opportunities for avocationals to participate in the Federal program. Avocational societies are valuable partners and strong advocates in archeological preservation on public lands, particularly with their interest and experience in the subject and their ties to the local community (Bense 1991, Davis 1991). To facilitate communication and the exchange of information between professionals and avocationals, the SAA created the Council of Affiliated Societies composed of 31 members covering 19 states and Canada (Mercado-Allinger 1994: 2). Affiliate members are strong supporters of certification and training programs for their members. Federal agencies have assisted in these training programs. The Shawnee National Forest provides professional guidance and training to members of Illinois' avocational community for certification in archeological surveying. FS also provides many opportunities for members to participate in fieldwork through the Passport in Time program.

Another fine example of avocational and professional collaboration is sponsorship of state archeology weeks. Avocational societies assist with organizing the celebration, funding products and sponsoring events. Federal agencies should continue to strengthen relationships with avocational societies and publicize their successes. Both avocationals and professionals need to expand communication and understanding of each other's roles and expectations with creating and maintaining programs that are mutually beneficial.

Significant strides have been made introducing archeology into elementary and secondary schools. BLM initiated Project Archeology, a program that provides a systematic approach to integrating archeology into school curriculum for K-12. The long-term success of the program relies on recruiting a state sponsor with an established outreach and education program to continue Project Archeology after BLM completes the initial workshops. Project Archeology has met with great success in the western U.S. and is being used as a model for state curriculum development with potential national application. Federal agencies can contribute to this effort by providing financial and staff assistance locally and by developing partnerships with educational institutions at the national level.

With the expanding role in formal education and volunteerism, a variety of educational products are being developed for classroom and general public use. A primary goal of these products is to instill in the public a stewardship ethic and an understanding of the role of Federal archeology in historic preservation. Yet, with all this effort, few materials are being evaluated for the effectiveness of the

message to particular audiences. Is the public gaining more than an appreciation of archeology? Agencies should become equally concerned with outcomes that increase public understanding of the benefits of archeological preservation, not just indices of visitor satisfaction. Since agencies now offer more outreach programs, research should be conducted on the effectiveness of their public education programs.

Another issue with public education programs is effectively distributing information about archeological studies. A problem exists with translating scientific information into an understandable format for public consumption and use. Federal agencies need to publicize the results of their archeological projects in popular publications rather than in sound bytes and flashy headlines. These publications can synthesize volumes of information collected from compliance projects and research that can be used to update local history. The content of these popular works also should be sensitive to the views of Native Americans and other ethnic groups.

Finally, public archeology is becoming a significant component of heritage tourism. Visitation to archeological and historic sites has reached significant levels in the U.S. and abroad (Task Force on Outdoor Recreation Resources and Opportunities 1988). Archeological site interpretation on public land can play an important role in stimulating tourism and economic development in rural areas. This direct contribution to economic development can generate broad community support for preservation and protection efforts. The archeological profession needs to pursue a more active role in planning and decision-making by the recreation and tourism industry. "Opening" archeological sites for public visitation may not always benefit site preservation, and this factor must be clearly articulated to the tourism industry. Federal land managers also must consider the long-term effects and benefits of tourism when conducting interpretive planning (Haas 1993). Heritage tourism is a new and exciting component of public education that can build strong local support for archeological preservation.

Efforts to Fight Looting and Preserve the Archeological Record in Place

Federal agencies are improving law enforcement efforts to combat the rising level of looting incidents on public lands. Although the number of arrests and citations has been declining, the number of prosecutions is rising. More importantly, the success rate of prosecutions is climbing, and convictions are increasing. This improvement in combating archeological resource crime demonstrates the commitment by land managers and DOJ to spend time and funds to aggressively pursue archeological

resource crimes. Other factors include the lower felony threshold established by the 1988 amendments to ARPA and improved training of Federal law enforcement officers and attorneys.

Despite successful prosecutions under ARPA, prosecutors prefer using non-ARPA statutes in casework. This reluctance to prosecute under ARPA stems from early case failures, unfamiliarity with the law, and the time and expense needed for criminal cases. However, ARPA is the primary statute for prosecuting archeological resource crime and should be used for both criminal and civil cases. Also important, repeat offenders can receive more severe penalties for second offenses to ARPA.

Although the number of prosecutions has risen, the ratio of prosecutions per incident remains low (16%). This low percentage is partly due to the high number of reported incidents and the lack of manpower to prosecute every incident. Also, many incidents do not lead to cases that can be prosecuted.

Only one of the reported prosecutions was a civil prosecution. This reflects a persistent problem, that is, managers and prosecutors who do not pursue criminal prosecutions usually drop the case entirely without pursuing civil avenues. If the case is not inherently strong or the staff are not available to pursue a criminal action, then civil prosecution is the most cost-efficient and expedient approach. It also can be an important deterrent to the violators. Civil penalties collected also can be used for restoration and repair. Federal agencies are encouraged to pursue civil action more vigorously when criminal prosecution is not the selected course of action.

Many successful ARPA convictions begin with valuable leads and information provided by the public. The reward provisions in ARPA provide the means to recognize these individuals for being civically responsible. The number and amount of awards have been underused, totalling only $600 during the 3-year reporting period. One deterrent to giving rewards has been the difficulty with releasing funds from the U.S. Treasury. It would be useful for NPS to provide information to Federal agency managers on the payment process under ARPA. With an effective reward program, land management agencies may have more success with using mechanisms, such as toll free numbers, to increase the number of reported incidents and to contribute information leading to successful casework and prosecutions.

Several site protection strategies have proven effective for deterring looting at archeological sites. Undercover operations have successfully infiltrated the illicit trade network from the diggers to the buyers

and from domestic to international outlets. When productive, sting operations can substantially reduce illicit trade in a region. Because these operations generally involve multiple agencies working over a long time period, managers are reluctant to commit the staff, time, funds, and technology in this effort. However, the long-term benefits far outweigh a site-by-site approach. High visibility patrol and monitoring programs are also valuable approaches. Aerial surveillance is effective both for covering large, remote locations and for directing law enforcement officers to actively looted areas that would not be found during ground monitoring. Another approach used by FS is to use roving, interagency expert teams to investigate incidents within a region. This system provides consistency and quality casework by specialists and reduces costs and staff involvement.

Federal archeological site protection programs can be improved by developing agency-wide plans. TVA reported the only comprehensive, strategic plan used by field units to prioritize law enforcement efforts and outline areas of responsibility. Through these plans, TVA managers identify land areas and sites that are highly vulnerable to looting and focus law enforcement efforts more effectively. Other land management agencies should consider a similar plan to better integrate law enforcement with archeological resource protection needs.

Research on archeological looting is not widely publicized or shared. Considerable training has been devoted to law enforcement, but information about the behavior of looters is limited to anecdotal statements from looters and information obtained during prosecution of cases. Studies of vandalism in the field of outdoor recreation are a good source of information for researchers to develop hypotheses about looting behavior. Research facilities for the FS and SCS are ideally suited to handle this resource management issue. Currently, NPS is conducting a study of antiquities trafficking pursuant to NHPA that will examine the trafficking network. This study may provide substantive insights about the social context of looting.

A problem faced with any study of looting is finding data that is reliable and consistently gathered by Federal agencies. Many agencies do not report archeological resource crimes separately but only under general category of resource crimes. Some national parks report archeological looting separately but this information is not maintained at central offices. The NPS's LOOT Clearinghouse and the information provided by agencies for this report are the primary national databases on archeological resource crime. Yet, the data submitted to NPS often are incomplete, primarily because Federal agencies use different

terminologies and reporting measures and lack systematic collection procedures. This problem warrants attention and a standardized reporting process is needed in the near future.

NPS and DOJ have made significant headway with training archeologists, managers, law enforcement officers, and attorneys in archeological resource protection law. A comprehensive sourcebook on ARPA is available as a reference tool in every U.S. Attorney's office. In addition, a wide network of trained Federal attorneys are communicating and sharing information about ARPA cases. This elevated awareness in the judicial community is partly responsible for the steady rise in successful prosecutions and convictions. Also, agency managers are receiving more support from Federal attorneys in prosecuting ARPA cases. Training should continue and expand in this area.

Interagency Cooperation and Improvements in the Exchange and Availability of Information

Federal archeology programs are developing partnerships to leverage funds through donations, cooperative research activities, and challenge cost share projects. FS, BLM, and NPS have cost-share programs to engage in a variety of research and interpretive projects. ISTEA is another excellent source of matching funds for a variety of archeological preservation and interpretation projects. These partnerships generate local community support and public participation in heritage programs that otherwise would remain untapped. However, these initiatives sometimes suffer from poor project planning and lack of approved projects that can be implemented on short notice. To avoid these problems in the future, agency programs should develop, prioritize, and schedule archeological projects that can be undertaken when funds become available or that can be marketed to potential partners. Marketing projects is effective for generating competition among partners and increasing contributed dollars. It also allows agencies to promote projects with immediate benefit to local management issues or research problems.

Agencies continue to work together on interagency archeological initiatives. Professional staff working in adjoining management areas are sharing technical expertise and together solving common management problems. This effort is best exemplified by local and regional approaches to battle looting and with agencies assisting nearby Tribes with survey and evaluation. The use of expert teams for crime investigation or site stabilization also is an innovative approach for agencies to share technical skills and improve regional site preservation efforts. Central offices of agencies can assist in this effort by developing nationwide agreements that resolve procedural differences and streamline the transfer of funds

and materials. Interagency working groups are particularly effective mechanisms for identifying common issues and pooling resources to resolve the issues.

Training and technical workshops are offered for managers and archeologists through educational programs in government, academia, and private institutions. NPS is very active in providing funds for training and research through the Cultural Resources Training Initiative, the National Center for Preservation Technology and Training, and the continuing education program at the University of Nevada at Reno. More agencies offer training to managers tailored to their CRM programs. CRM awareness sessions are being offered for employees and partners to enhance their understanding of the Federal historic preservation program. A weak link in the Federal training program is the lack of follow-up evaluation outside the classroom. Are managers more effectively handling archeological issues after completing training courses? Training sponsors are encouraged to find systematic methods to measure trainee performance after instruction.

Other training issues include inadequate continuing education programs for agency archeologists and limited academic training in CRM. First, Federal agencies do not offer training for archeologists to update their professional skills and abilities. For example, wildlife biologists in the FS receive 3-4 weeks of intensive training periodically to update their knowledge of current theory and methods. Although archeologists are encouraged to take training courses, an archeology training plan is rarely developed to help staff maintain skill levels in CRM. Second, the SAA is devoting more interest to the nature of academic training in CRM (SAA 1994:31-40). Professionals entering CRM programs in Federal agencies often are ill prepared to function within a management context. Federal agencies should be provided internship opportunities for undergraduate and graduate students in archeology. One example is the intern program sponsored by the National Council on Preservation Education. This program has provided archeology interns for NPS. Academic institutions and Federal archeologists need to work together further to develop a stronger CRM curriculum.

Federal archeologists spend considerable time communicating with the public by giving talks, visiting classrooms, joining avocational groups and historical societies, and working with local communities and individuals on archeological projects. These efforts should continue to generate needed cooperation with landowners to preserve archeological resources on private land. The NHL archeology initiative sponsored by NPS is another excellent program that encourages partnerships between the Federal Government and

private sector in preserving significant sites. More Federal agencies should participate in this program and work with local organizations and individuals to preserve archeological sites on private land.

Federal agencies are using partnerships and other cost-share arrangements to support research on public lands. This information is being used to develop predictive models and more effective discovery techniques, such as the work by MMS on historic shipwrecks. To increase research on public land, agencies should aggressively promote these opportunities and create a competitive arena for the limited cost-share funds. They should attract more interest from local university and college programs to participate in area research projects by supporting field schools and graduate study programs.

Under NHPA, Federal agencies are required to maintain comprehensive and accurate records of archeological work conducted under their authority. The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation identify the basic documentation required for archeological work. Federal agencies vary in their capability to maintain records about their archeological activities. For example, FS has no internal reporting requirements for cultural resources, and FHA does not require States to report on how federal funds are used for archeology. HUD does not maintain accessible records about the amount of Federal funds used for archeology. Federal agencies that do not maintain information about their archeological activities hinder the accurate reporting of the breadth and accomplishments of the Federal archeology program. These agencies should develop standardized measures and systematic data collection procedures internally.

The proliferation of grey literature is being addressed through the NADB Reports module. It contains an increasing number of regional syntheses and updated overviews of archeological information. NADB contains over 100,000 report records, and electronic access is being made easier through the World Wide Web. NPS primarily oversees the inventory of reports statewide but needs more support from other Federal agencies and SHPOs in providing reports for the database. Regional overviews are an important medium for providing bibliographic references to reports and documents. Agencies that conducted resource overviews in the late 1970s and 1980s should update these studies with current archeological information. GIS technology is expanding the capability to store and examine large quantities of information for broad pattern analyses. However, this technology is being implemented independently by agencies with little regard to interagency development and standardized data elements. The

archeological community should closely examine standardized measurements that can be applied agency-wide.

Many Federal agencies made significant progress converting to electronic communication and data management systems. This effort is being supported by growing numbers of regional and statewide data networks used for Section 106 projects. These networks facilitate quick access to project reports with information about archeological resources in the project area. State level archeological databases are important for addressing local management problems. One has been that agencies develop and use different systems, which prevents data compatibility and comparative analysis. Agency-wide databases are valuable for addressing broader management issues. BLM and NPS have developed an integrated database system that links cultural resource information agency-wide, while FS has completed a pilot study. Progress is being made with both state-wide and agency-wide approaches.

Site inventories

Most archeological inventory on public land is conducted for land use and development. Although agencies have focused on completing inventories of their lands for more than 20 years, only 6% of Federal and Indian lands have been surveyed to date and only 3% have been thoroughly investigated to identify all archeological sites (Tables C.1-C.2). It is time for Federal agencies with large land bases to find alternative inventory strategies. Some agencies have moved beyond Section 106 inventory and are conducting comprehensive survey on lands considered important to understanding an area's history. TVA, BOR, BLM, NPS, DOD, DOE, and NOAA have initiated regional inventory programs. However, these programs are vulnerable to funding shortfalls and are not implemented annually.

To increase the amount of surveyed land and to improve our understanding of archeological resources, more research is needed to develop reliable, cost efficient inventory techniques. It is unlikely that Federal and tribal lands will be completely surveyed in the near future. Predictive modeling, sampling, and remote sensing are useful techniques for producing information about archeological sites in a large area by surveying less land. However, agency managers need to be aware that these coverages are less intensive and may not be reliable for many small-scale compliance projects. Modeling requires considerable testing and re-evaluation to reach statistical reliability, and is ill-suited to "one time only" inventories for compliance projects. Land management agencies should focus more attention on innovative

inventory designs that provide better understanding of their resource base and to improve their long-term management strategies.

Agencies with small land bases can and should set goals to completely inventory their lands. BOR, TVA, and VA have demonstrated that complete survey is realistic, reliable, and cost-efficient for long-term site preservation in small management units, such as reservoirs and medical facilities.

Finally, the steady increase of unanticipated site discoveries per identification and evaluation project is alarming and requires intensive monitoring. This problem further elevates the importance of developing more reliable inventory techniques.

Curation of Collections and Records

In 1987, GAO reported that most Federal agencies "lack adequate internal control over the artifacts removed from their lands and that their monitoring of curatorial facilities has not been adequate to ensure that federal artifacts are being properly preserved"(USGAO 1987:69). Also, problems were found with procedures for maintaining accountability of the artifacts curated at nonfederal facilities. Since the codification in 1991 of 36 CFR Part 79, *Curation of Federally-owned and Administered Archeological Collections*, agencies are directing more attention and funds to collection management issues. Several agencies, including BLM, FWS, DOD, and COE, are following the lead of NPS in developing agency-wide policies and guidelines for adequate long-term curation of archeological remains and associated records. Land management agencies have begun to systematically locate their collections and evaluate their condition. They are also examining those held in non-federal facilities. COE is providing professional assistance to several agencies in this regard. They also have model agreements with several facilities to share curation costs and responsibilities for the long-term. Land management agencies demonstrated significant progress with improving accountability and management of their archeological collections.

Development and regulatory agencies represent a special dilemma in providing for adequate curation of artifacts and records recovered from projects under their authority but from lands not under their jurisdiction. Although they require permittees and lisencees to properly curate materials, they neither

maintain accountability over the collections nor monitor the curatorial facilities after project completion. Rather, they place the burden of assuring for long-term care on the SHPO.

With the assessment of the condition of archeological collections and records, agencies also should be planning the appropriate treatment of materials located in substandard curatorial facilities. Eventually, agencies must decide to work with the facility to upgrade conditions or move the materials and records to an approved facility. In either scenario, agencies will need additional funds to upgrade, maintain, and preserve archeological collections, including appropriate compensation to facilities for providing long term care. Agencies should consider alternative strategies, including interagency or agency regional repositories. Regional repositories can provide centralized access to collections for research and education. Federal agencies should consider pooling resources and forging partnerships with State and local institutions to find a common location to house archeological collections and records.

Finally, agencies should actively use their collections for public education. Frequently, collections from public land are sent to museums, shelved, and rarely displayed for the public. Agencies should work closely with museums to provide the public with opportunities to learn about America's past.

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Appendix A

FEDERAL DEPARTMENTS AND AGENCIES PARTICIPATING IN THE FEDERAL ARCHEOLOGY PROGRAM, FY 1991-1993.

Land-Management Agencies
- Department of Agriculture
  - Forest Service
- Department of Commerce
  - National Oceanic and Atmospheric Administration
- Department of Defense
  - Department of the Air Force
    - Air Force
    - Air National Guard
  - Department of the Army
    - Army
    - National Guard Bureau
    - Corps of Engineers
  - Department of the Navy
    - Marine Corps
    - Navy
- Department of Energy (Facilities)
- Department of the Interior
  - Bureau of Land Management
  - Bureau of Mines
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - National Park Service
  - U.S. Geological Survey
- Department of Justice
  - Federal Bureau of Prisons
  - Immigration and Naturalization Service
- Department of Transportation
  - Federal Aviation Administration
  - U.S. Coast Guard
- Department of Veteran Affairs
- National Aeronautics and Space Administration
- Tennessee Valley Authority
- U.S. Postal Service
- Smithsonian Institution

Development Agencies
- Department of Agriculture
  - Farmers Home Administration
  - Rural Electrification Administration
  - Soil Conservation Service
- Department of Commerce
  - Economic Development Administration
- Department of Health and Human Services
- Department of Housing and Urban Development
- Department of the Interior
  - Bureau of Indian Affairs
- Department of Transportation
  - Federal Highway Administration
  - Federal Transportation Administration
- Environmental Protection Agency
- General Services Administration
- St. Lawrence Seaway Development Corporation

Regulatory Agencies
- Department of Energy
  - Federal Energy Regulatory Commission
- Department of the Interior
  - Minerals Management Service
  - Office of Surface Mining
- Nuclear Regulatory Commission
- Department of Transportation
  - Federal Railroad Administration

APPENDIX B

THE QUESTIONNAIRE FOR THE SECRETARY OF THE INTERIOR'S REPORT TO CONGRESS, FY 1991-1993.

The questionnaire sent to participating Federal agencies in FY 1993 is attached. Several questions used in FY 1991-1992 were not included in FY 1993. These questions were excluded because the data could be generated from other questions and the data was unrelated to activities defined by AHPA or ARPA. The following questions were excluded;

1. Number of unanticipated discovery situations in which the archeological resources were judged important enough for data collection to be conducted or for changes to be made in the undertaking design to avoid the discovered resources.

2. Total number of known archeological properties on agency-managed land not NRHP-evaluated.

3. Estimated total number of archeological properties likely to be located in/on agency-managed land.

4. Describe archeological resource management activities for any proposed or designated wilderness or wild and scenic river areas managed by the agency. Discuss the amount of land surveyed, number of sites identified, data recovery projects conducted there, and kinds of procedures used to monitor the condition of the resources in the areas.

5. Total cost of agency law enforcement.

THE SECRETARY OF THE INTERIOR'S REPORT TO CONGRESS
ON FEDERAL ARCHEOLOGICAL ACTIVITIES
GSA Control Number: 0236-DOI-AN

Questionnaire on Fiscal Year 1993 Activities

The Secretary's Report to Congress on Federal archeology (SRC) provides agency-by-agency and government-wide summary data on archeological programs and projects. The report provides financial and other quantitative information, project highlights, discussions of key planning and policy issues, a description of known and projected U.S. archeological sites and associated artifacts and records, and an annual summary of program activities. The SRC is a broadly based source of information on the Federal archeology program. It is used by departments and agencies in evaluating their archeological activities, as well as by Congress, the archeological profession, the general cultural resource management and historic preservation communities, and the interested public.

The Secretary of the Interior is charged with providing guidance and coordination for Federal archeology and for preparing a report to Congress on Federal archeological activities. The National Historic Preservation Act (NHPA), as amended, authorizes the Secretary to guide and coordinate Federal historic preservation activities, including Federal archeological activities. The Secretary is required to report to Congress on various Federal archeological activities by Section 5(c) of the Archeological and Historic Preservation Act (AHPA) and by Sections 10(c) and 13 of the Archaeological Resources Protection Act (ARPA), as amended. ARPA Uniform Regulation § -.19 requires Federal land managers to provide archeology program information to the Secretary of the Interior, upon request of the Secretary, for this report. The report is accomplished for the Secretary by the Departmental Consulting Archeologist (DCA) with the support of the Archeological Assistance Program within the National Park Service.

This questionnaire is to be completed by all agencies with responsibilities in the Federal archeology program. The questionnaire responses are a critical element in the Secretary's report.

The questionnaire is intended to be used with only minor modifications through FY95. Each question refers to activities conducted in **FY93 (October 1, 1992 through September 30, 1993).**

Instructions for the FY93 Federal Archeology Program Questionnaire

The varying missions of U.S. Federal agencies influence the nature of archeological activities engaged in by each of them. For example, not all agencies issue archeological permits. All agencies that undertake, contract for, or require of other parties archeological investigations should respond to questions in Sections A through H. Sections I-K apply only to agencies that also manage Federal or Indian land. It is understood that precise data are not always available and that in some cases knowledgeable estimates must be made.

Federal agencies that do not own and manage large acreages may provide funding for development on Federal and Indian lands or may regulate activities on Federal or Indian land. These regulatory agencies often issue permits or licenses for projects that cross Federal and Indian lands managed by other Federal agencies. The term "land use applicant" used throughout this questionnaire always refers to non-Federal entities who are conducting archeological activities in response to permit or financial support requirements. Thus, a regulatory agency should not consider itself a "land use applicant" when responding to these questions.

Note that these questions specifically apply to archeological investigation, protection, management, recovery, and collections management activities carried out under Federal authority, and do not pertain to all cultural resource management activities.

Regardless of mission, all agencies are responsible for seeing that the developments that they permit, license, and/or fund do not wantonly destroy important archeological resources, and for seeing that in accomplishing this, certain kinds of legally prescribed procedures are used. Monitoring these procedures and other associated programs is the function of this questionnaire. In the event that a department/agency takes the position that the entire questionnaire is not applicable, return the uncompleted questionnaire with a cover letter of explanation.

In completing the questionnaire, use the attached Answer Sheet. Fill out each line of the Answer Sheet with numerical data called for, or with the following abbreviations **ONLY**:

NA (Not Applicable). This term should only be used to indicate that the agency has no responsibility for this activity. If a section or a question has subsections/questions, fill in each line with *NA*.

ND (No Data to Report). This term should be used to indicate that although the question applies, there are no data to report. If data are not available for some other reason, use *ND* instead of a quantitative answer and indicate the reason(s) in the narrative response request for the relevant section.

0 (Zero/Nothing). This response should only be used to indicate the known absence of a quantity. Zero should not be used to indicate a lack of data.

Dollar Amounts ($): Round all dollar amounts to the nearest thousand, and specify if amounts are gross estimates.

Narrative Responses: Provide answers to the narrative questions on separate sheets. Narrative information should be compiled from regions, states, project offices, commands, divisions, etc., if a composite response is provided by a headquarters office. Respond on the Answer Sheet for all narrative questions with either a *NA*, *ND*, or check if a narrative is attached. Responses to the narrative questions are an excellent source of information and have added greatly to the content of past reports. Among the narrative questions, **Agency Highlights** provides an opportunity for agencies to highlight their archeological activities. Topics discussed might include specific archeological surveys and excavations; public awareness activities (publications, reports, brochures, exhibits, lectures, films, videos, awards, education programs, site protection programs, etc.); interagency, intergovernmental, and international cooperation; or any other activities that reflect participation in Federal archeological activities.

Department and Agency Names and Abbreviations: The first time any department or agency name is used in a narrative response, spell it out followed by the abbreviation (e.g., *Bureau of Land Management (BLM), Bureau of Reclamation (BOR)*), using only the abbreviation in subsequent references. Do the same for any department- or agency- specific names or programs, e.g., *Archeological Assistance Division (AAD), Alaska Regional Office (ARO), National Archeological Database (NADB).*

Submission Formats and Mechanics

Provide a composite agency response to the questionnaire on the Answer Sheet, summarizing information collected from regions, districts, divisions, etc., and noting the presence of accompanying narrative responses. If possible, also provide the separate regional, state, division, etc. reports that contribute to the composite response. Responses to the SRC questionnaire are compiled by the National Park Service AAD in dBASE III PLUS; a copy of that database structure can be provided on floppy disk with an accompanying data dictionary, on request. Narrative comments are maintained in WordPerfect files. Electronic responses to this questionnaire, in any format that can be uploaded into dBASE III PLUS and WordPerfect, are requested as accompaniments to the hard copy answer sheets and narrative responses. Electronic copies of AAD-compiled agency responses can be provided to responding agencies, upon request.

Additional Information and Material Requested

LOOT Clearinghouse Data: Complete the attached LOOT clearinghouse information sheet (OMB No.1024-0111) for each criminal or civil prosecution of archeological resources crime reported within your agency in FY93.

Photographs: The Secretary's Report to Congress merits clear illustrations of the archeological program, representing a variety of agencies. To support this publication, submit black and white photographs (at least 5" x 7") depicting Federal archeological activities. Although black and white photographs are preferred, color photographs or slides will be accepted. On the back of each photograph print the appropriate caption (identify people by name and position) and photographic credit line.

Due Dates and Assistance

Return the composite answer sheets and narrative sheets (and accompanying electronic responses, if appropriate) with completed LOOT forms, photographs, and any other supplemental material to the Departmental Consulting Archeologist, P.O. Box 37127, Washington, DC 20013-7127 [delivery address: 800 N. Capitol St. N.W., Suite 210, Washington, DC 20002], by **May 1, 1994**. Questions about this questionnaire should be directed to Daniel Haas, USDI-NPS-WASO, Archeological Assistance Division, 202-343-1058, Fax: 202-523-1547.

Attachments: Answer Sheet, LOOT Form

Agency _____
Office _____

Section A. Agency Archeology Program FY93 Highlights

A1 (separate sheet). Provide highlights of exemplary archeological projects and programs that could be included in the FY93 report. Topics discussed might include specific archeological surveys; data recovery projects; public education and outreach activities; archeological collections management, curation, or conservation efforts; interagency, intergovernmental, and international cooperation; or other relevant activities.

Section B. Archeological Public Education and Outreach

This section provides narrative information on agency programs and accomplishments in the area of public education and awareness regarding issues of concern to the Federal archeology program, during FY93.

B1 (separate sheet). Does the agency have archeological public education and outreach programs planned or underway? If so, describe these plans or programs.

B2 (separate sheet; this question is asked in response to ARPA Section 11 requirements). Describe communication, cooperation,and exchange between agency and private individuals having archeological resources and data collected from Federal and Indian lands, and with professional archeologists outside of the agency. Identify when those activities involve archeological, historic, or other scientific associations.

Agency _____
Office _____

Section C. Archeological Overview and Planning Studies

This section provides data on overview and planning studies undertaken by the agency or agency contractors, or by land use applicants/permittees/licensees and others, during FY93.

_____ C1. Number of overviews or literature/map searches associated with general planning activities and resulting in a file letter, report, or other documentation conducted by the agency itself, or conducted for the agency by contractors and cooperators.

$_____ C2. Amount expended by agency for the studies counted in response C1 **(include salary and benefits, support, and other costs)**

_____ C3. Number of overviews or literature/map searches conducted by land use applicants/permittees/licensees and not supported with agency funds

C4 (separate sheet). Provide analysis, interpretation, and clarification of responses to the archeological overview and planning studies questions.

Agency _____
Office _____

Section D. Archeological Identification and Evaluation Investigations

This section provides data on identification and evaluation studies undertaken by the agency or agency contractors, or by land use applicants/permittees/licensees, during FY93.

_____D1. Number of field studies to identify and evaluate archeological properties conducted by the agency itself, or conducted for the agency by contractors and cooperators.

$_____D2. Amount expended by agency for archeological identification and evaluation studies **(include salary and benefits, support, and other costs)**

_____D3. Number of field studies to identify and evaluate archeological properties conducted by land use applicants/permittees/licensees and not supported with agency funds

_____D4. Number of acres by archeological identification and evaluation investigations

_____D5. Total number of archeological sites identified by identification and evaluation studies

D6 (separate sheet). Provide analysis, interpretation, and clarification of responses to questions about archeological identification and evaluation studies.

Agency _____
Office _____

Section E. Archeological Data Recovery

This section provides information on archeological data recovery projects undertaken by the agency or agency contractors, or by land use applicants/permittees/licensees, during FY93.

_____E1. Number of archeological data recovery projects conducted by the agency itself, or conducted for the agency by contractors and cooperators.

$_____E2. Amount expended by agency for all archeological data recovery projects **(include salary and benefits, support, and other costs)**

_____E3. Number of archeological data recovery projects conducted by land use applicants/permittees/licensees and not supported with agency funds

E4 (separate sheet). Provide analysis, interpretation and clarification of responses to questions about archeological data recovery projects.

Agency _____
Office _____

Section F. Unanticipated Archeological Discoveries

This section provides data on archeological properties discovered unexpectedly in FY93 subsequent to agency completion of the NHPA Section 106 review and compliance process.

_____F1. Number of undertakings resulting in the discovery of unanticipated archeological resources including those undertakings conducted by the agency itself, or conducted for the agency by contractors and cooperators.

_____F2. Amount expended by agency for unanticipated discoveries **(include salary and benefits, support, and other costs)**

_____F3. Number of unanticipated discoveries encountered by land use applicants/ grantees/licensees on projects not supported with agency funds

F4 (separate sheet). Provide analysis, interpretation and clarification of responses to questions about unanticipated archeological discoveries.

Agency _____
Office _____

Section G. Archeological Information Management

This section summarizes information management systems used by the agency for data on archeological permits, site locations, collections, violations, and other archeological topics. If a single larger system is used for two or more of the areas covered by questions G1-G3, then those questions may be answered by a single response. If this is done, make an explicit note of the fact on the answer sheet. Also, if appropriate, note and summarize the other kinds of information included in a system used for any of the three areas.

G1 (separate sheet). Describe any computerized systems not reported in previous years that the agency is currently using to record and monitor ARPA, Antiquities Act, and/or other permits for archeological investigations and note the ongoing use of previously reported systems. Note the hardware and software used for any systems mentioned.

G2 (separate sheet). Describe any computerized systems not reported in previous years that the agency is using to record and monitor archeological site locations for inventory purposes and note the ongoing use of previously reported systems. Note the hardware and software used for any systems mentioned.

G3 (separate sheet). Describe any computerized systems not reported in previous years that the agency is using to record and monitor archeological collections for management purposes and note the ongoing use of previously reported systems. Note the hardware and software used for any systems mentioned.

Agency _____
Office _____

Section H. Archeological Collections Management

This section covers Federal collections management activities undertaken by or for the agency in FY93 as required by 36 CFR 79, the purpose of which is to preserve collections of prehistoric and historic material remains, and associated records recovered under the Antiquities Act, AHPA, NHPA, or ARPA.

_____H1. Cubic feet (or lots if appropriate; **explain dimension used here in response H6**) of stored material remains (artifacts, samples)

_____% H2. Percentage of amount (cubic feet, lots) identified in response H1 that has been catalogued

_____H3. Number of linear feet of records associated with stored archeological material remains

_____H4. Estimated number of cubic feet/lots added to collections in FY93

H5 (separate sheet). Describe in brief overview how the agency is meeting or plans to meet its curation responsibilities under 36 CFR 79. Identify and briefly describe the curation facilities relied on by the agency in meeting its responsibilities. Also describe cataloging systems (e.g., file cards, electronic records) used in each such facility.

H6 (separate sheet). Provide analysis, interpretation and clarification of the responses to the questions about archeological collections management.

THE REMAINDER OF THE QUESTIONNAIRE (Sections I-K) IS TO BE COMPLETED BY THAT MANAGE FEDERAL OR INDIAN LAND.

Agency _____
Office _____

Section I. Archeological Resource Base on Federal and Indian Lands

This section provides baseline information about the extent of archeological resources within the lands managed by Federal agencies, and the quality of knowledge about those resources. Questions I2-I8 call for the best possible estimates for cumulative activities through FY93; some of these responses may be the same as those provided for the previous year.

_____I1. Total acres managed **(in response I9 below, briefly describe the ownership status and use rights that apply for this acreage, and identify the source of information on the acreage amount with publication citation if appropriate)**

_____I2. Total acres inventoried sufficiently to identify all readily apparent archeological properties present there **(i.e., land investigated at an appropriate level of intensity to eliminate the need for further systematic inventory given current standards)**

_____I3. Total acres inventoried by less than full coverage **(i.e., land investigated archeologically but not intensively enough to ensure 100% inventory of archeological sites)**

_____I4. Total number of known archeological properties on agency-managed land

Any one archeological property should be counted only once in responding to question set I5-I8.

_____I5. Total number of archeological properties on agency-managed lands listed on the National Register of Historic Places (NRHP)

_____I6. Total number of archeological properties on agency-managed land formally determined eligible for the NRHP or considered eligible through documented consultation with the State Historic Preservation Officer (SHPO)

_____I7. Total number of archeological properties on agency-managed land formally determined ineligible for the NRHP or through documented consultation with the SHPO

_____I8. Total number of known archeological properties on agency-managed land adequately evaluated, but not listed, considered, or formally determined eligible for the NRHP **(i.e., fitting responses to neither questions I5-I7)**

I9 (separate sheet). Provide analysis, interpretation and clarification of responses to questions about the Federal and Indian land archeological resource base, including the basis for estimating responses.

I10 (separate sheet). Are actions underway or planned to comply with ARPA Sec. 14? This requires Federal agencies to develop plans for surveying lands under their control to determine the nature and extent of their archeological resources, and to prepare a schedule for surveying lands that are likely to contain the most scientifically valuable archeological resources. If the answer is yes, describe these actions and/or plans.

Agency _____
Office _____

Section J. Archeological Permitting

This section summarizes the number of archeological permits or the frequency of the use of ARPA Uniform Regulations §-.5(b,c) authority for archeological activities undertaken on Federal and Indian lands using various legal authorities during FY93.

Explain any logical inconsistencies that may occur in your numerical responses to question J1-J8 (e.g., more permits denied [J5] than permit applications received [J4]), in response J9.

_____J1. Number of archeological investigation permits issued or in effect pursuant to Federal agency policies, procedures, or guidelines for archeological activities authorized by ARPA, the Antiquities Act, or agency-specific statutes

_____J2. Number of permittees checked in the field, laboratory, or at their curation repository

_____J3. Total number of investigations begun or underway, conducted by the agency or under agreement for which no formal permits were issued, but which otherwise complied with ARPA conditions and standards as authorized by ARPA Uniform Regulations § -.5(b,c)

_____J4. Number of permit applications received

_____J5. Number of permit applications denied

_____J6. Number of permits suspended

_____J7. Number of denied or suspended permits appealed

_____J8. Number of notifications to Indian Tribes of proposed work that might harm or destroy sites having religious or cultural importance to a Tribe, as required by ARPA Uniform Regulation § -.7 **(in response J9, provide a brief description of any consultation and cooperation that may have developed as a consequence of such notifications).**

J9 (separate sheet). Provide analysis, interpretation and clarification of responses to questions about archeological permitting activities.

Agency _____
Office _____

Section K. Archeological Law Enforcement

This section summarizes FY93 violations, citations, arrests, prosecutions, and convictions under various Federal authorities that afford civil and criminal protection of archeological properties. **Use the attached LOOT form for reporting FY93 archeological violation cases.**

_____K1. Number of documented violations of ARPA, the Antiquities Act, Federal property laws, or other statutes protecting archeological properties, reported on land managed by the agency **(as defined in ARPA Sec. 6, a violation is any actual or attempted excavation, removal, damage to, alteration, or defacement of an archeological property on Federal land without a permit issued or an exemption listed in ARPA Sec. 4)**

_____K2. Number of arrests made in cases of documented archeological vandalism or looting

_____K3. Number of citations issued in cases of documented archeological vandalism or looting

_____K4. Number of prosecutions of archeological vandalism or looting **(for each prosecution, attach a completed LOOT Clearinghouse summary form)**

_____K5. Number of misdemeanor convictions under ARPA

_____K6. Number of felony convictions under ARPA

_____K7. Number of second ARPA offenses **(included in answers to questions K5 and K6)**

_____K8. Number of cases of documented vandalism or looting of archeological property that were prosecuted using an authority other than ARPA **(in response to narrative question K18 below, list specific authority and cases in which each authority was used along with relevant prosecution data)**

$_____K9. Amount collected in criminal fines under ARPA

_____K10. Number of civil penalties applied **(as authorized by ARPA Sec. 7 or other authorities)**

$_____K11. Amount of civil penalties collected under ARPA Sec. 8(a)

$_____K12. Costs of restoring or repairing looted or vandalized archeological properties

$_____K13. Amount given in rewards under ARPA **(as authorized by ARPA Sec. 8(a))**

Section K. Archeological Enforcement (Concluded)

$_____K14. Commercial value of artifacts seized and retained by the government under ARPA **(as authorized by Sec. 8(b))**

$_____K15. Commercial value of property seized and retained by the government in ARPA convictions **(as authorized by Sec. 8(b))**

$_____K16. Estimated cost of agency archeological law enforcement.

K17 (separate sheet). Provide analysis, interpretation and clarification of responses to questions about archeological law enforcement, including details of the response to question K8.

K18 (separate sheet). Are any actions planned or underway (1) to develop documents for reporting suspected ARPA violations, and/or (2) establishing procedures concerning when and how these documents are to be completed by officers, employees, and agents of their respective agencies? If so, describe.

K19 (separate sheet). Describe effective cooperative projects, methods, and/or techniques the agency has used to improve archeological preservation through law enforcement. Examples might include the use of remote sensing equipment for monitoring site locations, or interagency cooperative agreements for combined surveillance of adjacent land units and concurrent jurisdiction of law enforcement personnel.

APPENDIX C

AGENCY RESPONSES TO THE QUESTIONNAIRE FOR THE SECRETARY OF THE INTERIOR'S REPORT TO CONGRESS, FY 1991-1993.

Tables C.1 through C.26 contain the numerical responses from Federal agencies for FY 1991-1993 used in the analyses provided in this report. Agency data are grouped and presented by land management, development and regulatory agencies. Data for Sections I-K of the questionnaire (See Appendix B) do not apply to regulatory agencies and are not tabulated. Data regarding archeological resource crimes (C.24 - C.26) are grouped for all agencies. The database with all responses is maintained by the Archeology and Ethnography program, National Park Service, Washington, D.C. Information is available on request.

Table C.1. Acreage managed and inventoried by land management agency, FY 1991-1993.

Agency	Year	Acres Managed	Acres Surveyed During Year	Acres Fully Surveyed	Acres Partly Surveyed
AF	1991	9432932	84742	429197	162983
ANG	1991	110000	3500	12000	23000
ARNG	1991	300000	78000	ND	ND
BLM	1991	270000000	551923	9878211	ND
BOP	1991	29327	10700	430	ND
BOR	1991	8231254	54770	633292	ND
CG	1991	76349*	ND	ND	ND
COE	1991	7034830	226618	1830048	2034967
DOA	1991	12000000	131960	403583	441762
DOE	1991	2388168	39489	179115	194578
FAA	1991	18797*	ND	ND	ND
FS	1991	184482421*	2010030	ND	ND
FWS	1991	90776000	27000	795000	7720000
INS	1991	638*	ND	ND	ND
NASA	1991	411560	55	6800	1650
NOAA	1991	9087232	NA	832	0
NPS	1991	79180708	19198	1004174	5878404
SI	1991	ND	ND	ND	ND
TVA	1991	1032593	24600	6000	222000
USBM	1991	11834	NA	600	400
USGS	1991	378*	100	ND	ND
USMC	1991	ND	ND	ND	ND
USN	1991	3990944	11791	86769	1657039
USPS	1991	11778*	0	ND	ND
VA	1991	25878*	ND	ND	ND
Total		678633621	3274476	15266051	[illegible]
AF	1992	9440562	58033	434669	107317
ANG	1992	110000	0	15000	28000
ARNG	1992	300000	78000	ND	ND
BLM	1992	270000000	460324	10280325	ND
BOP	1992	29327	1875	1045	1200
BOR	1992	8231254	66041	665561	208921
CG	1992	76349*	80	ND	ND
COE	1992	7036119	139354	1693286	2043464
DOA	1992	12000000	134524	480880	509380
DOE	1992	2387568	25657	183411	194326
FAA	1992	18797*	ND	ND	ND
FS	1992	184482421*	2252227	ND	ND
FWS	1992	91000000	27100	ND	ND
INS	1992	1647*	ND	ND	ND
NASA	1992	441560	350	6800	1650
NOAA	1992	9087232	ND	832	0
NPS	1992	80663217	94222	1386255	5890721
SI	1992	ND	ND	ND	ND
TVA	1992	1032593	9000	6000	231000
USBM	1992	13009*	ND	ND	ND
USGS	1992	872*	0	ND	ND
USMC	1992	1741000	1314	101641	187500
USN	1992	3990944	1161193	98603	1647039
USPS	1992	13535*	0	ND	ND
VA	1992	25878*	ND	ND	ND
Total		682123884	4509243	15354308	11050518
AF	1993	9432932	50452	484038	74657
ANG	1993	110000	2500	16000	19000
ARNG	1993	300000	0	0	0
BLM	1993	270000000	466831	10684407	ND
BOP	1993	30617	2251	2325	1200
BOR	1993	6204159	50477	602336	174867
CG	1993	76349*	1174	ND	ND
COE	1993	7119287	383837	2218133	1047555
DOA	1993	12000000	137700	1420394	2751641
DOE	1993	2459219	25007	242060	189014
FAA	1993	18797*	8196	600	0
FS	1993	184482421*	491143	6307370	3425186
FWS	1993	91000000	15668	1300000	2355523
INS	1993	1647*	160	ND	ND
NASA	1993	410840	10	89060	1620
NOAA	1993	9087232	0	0	0
NPS	1993	80308462	39034	1039012	5906310
SI	1993	ND	ND	ND	ND
TVA	1993	1033000	7000	7000	238000
USBM	1993	11834	ND	600	400
USGS	1993	872*	0	ND	ND
USMC	1993	1714000	12150	113791	187500
USN	1993	3900944	12614	100000	1800000
USPS	1993	13535*	ND	ND	ND
VA	1993	25303	671	ND	ND
Total		679741450	1706875	24627126	18172473
Grand Total		-	9490645	-	-

* Acreage data obtained from GSA (1993, 1994)

Table C.2. Acreage managed and inventoried by development agency, FY 1991-1993.

Agency	Year	Acres Managed	Acres Surveyed During Year	Acres Fully Surveyed	Acres Partly Surveyed
BIA	1991	54000000**	124181	321090	105000
EDA	1991	ND	ND	ND	ND
EPA	1991	368*	2347	ND	ND
FHA	1991	46*	ND	ND	ND
FmHA	1991	ND	35960	ND	ND
FTA	1991	ND	53	ND	ND
GSA	1991	11454*	417	ND	ND
HHS	1991	1358	1993	587	92
HUD	1991	327*	ND	ND	ND
REA	1991	ND	2501	ND	ND
SCS	1991	5715*	ND	ND	ND
SLSDC	1991	2898*	ND	ND	ND
Total		54022166	167452	321677	105092
BIA	1992	54000000**	88293	239300	115000
EDA	1992	ND	ND	ND	ND
EPA	1992	330*	1800	ND	ND
FHA	1991	46*	ND	ND	ND
FmHA	1992	ND	29612	ND	ND
FTA	1992	ND	15	ND	ND
GSA	1992	10898*	487	ND	ND
HHS	1992	1358	1829	587	924
HUD	1992	327*	ND	ND	ND
REA	1992	ND	4467	ND	ND
SCS	1992	5715*	ND	ND	ND
SLSDC	1992	2898*	ND	ND	ND
Total		54021572	126503	239887	115924
BIA	1993	54000000**	88293	239300	115000
EDA	1993	ND	ND	ND	ND
EPA	1993	330*	7100	ND	ND
FHA	1991	46*	ND	ND	ND
FmHA	1993	ND	29000	ND	ND
FTA	1993	ND	32	ND	ND
GSA	1993	10898*	1200	ND	ND
HHS	1993	1358	6342	587	92
HUD	1993	327*	ND	ND	ND
REA	1993	ND	5484	ND	ND
SCS	1993	5715*	307940	ND	ND
SLSDC	1993	2898*	ND	ND	ND
Total		54021572	445391	239887	115092
Grand Total		-	739346	-	-

* Acreage data obtainded from GSA(1993,1994)
**BIA holds 52,000,000 acres in trust and 2,000,000 acres of it's own land.

Table C.3. Acreage inventoried by regulatory agency, FY 1991-1993.

Agency	Year	Acres Surveyed During Year	Acres Fully Surveyed	Acres Partly Surveyed
FERC	1991	ND	ND	ND
FRA	1991	0	ND	ND
MMS	1991	2920320	ND	ND
NRC	1991	ND	ND	ND
OSM	1991	ND	ND	ND
Total		2920320	-	-
FERC	1992	ND	ND	ND
FRA	1992	0	ND	ND
MMS	1992	2787840	ND	ND
NRC	1992	ND	ND	ND
OSM	1992	ND	ND	ND
Total		2787840	-	-
FERC	1993	44454	ND	ND
FRA	1993	12	ND	ND
MMS	1993	2350080	ND	ND
NRC	1993	0	ND	ND
OSM	1993	ND	ND	ND
Total		2394546	-	-
Grand Total		8102706	-	-

Table C.4. Identified and estimated archeological sites by land management agency, FY 1991-1993.

Agency	Year	Sites Found During Year	Total Known Sites	Agency Estimate of Total Sites
AF	1991	215	4823	58196
ANG	1991	0	1	28
ARNG	1991	ND	ND	ND
BLM	1991	10887	167212	5000000
BOP	1991	28	56	ND
BOR	1991	952	10851	ND
CG	1991	ND	ND	ND
COE	1991	3375	39708	124500
DOA	1991	1441	13186	28530
DOE	1991	690	4711	85962
FAA	1991	ND	ND	ND
FS	1991	10308	ND	ND
FWS	1991	300	7000	200000
HHS	1991	425	154	11
INS	1991	ND	ND	ND
NASA	1991	0	52	ND
NOAA	1991	ND	ND	ND
NPS	1991	1686	55550	441618
SI	1991	ND	ND	ND
TVA	1991	710	ND	30000
USBM	1991	ND	29	300
USGS	1991	25	25	ND
USMC	1991	ND	ND	ND
USN	1991	666	6327	50550
USPS	1991	0	ND	ND
VA	1991	ND	ND	ND
Total		31708	309685	6019695
AF	1992	63	4902	58205
ANG	1992	0	1	28
ARNG	1992	ND	ND	ND
BLM	1992	8106	173705	4000000
BOP	1992	47	104	ND
BOR	1992	1747	12122	31780
CG	1992	2	ND	ND
COE	1992	2530	41153	125536
DOA	1992	1754	14963	30349
DOE	1992	414	5191	85352
FAA	1992	ND	ND	ND
FS	1992	11962	ND	ND
FWS	1992	170	7000	200000
HHS	1992	439	154	11
NASA	1992	0	53	ND
NOAA	1992	1	ND	ND
NPS	1992	2734	61251	446839
SI	1992	ND	ND	ND
TVA	1992	458	ND	30000
USGS	1992	0	25	ND
USMC	1992	16	672	5000
USN	1992	747	11589	44550
USPS	1992	0	ND	ND
VA	1992	ND	ND	ND
Total		31190	332885	5057650
AF	1993	374	5369	-
ANG	1993	0	1	-
ARNG	1993	0	0	-
BLM	1993	7410	179991	-
BOP	1993	82	149	-
BOR	1993	1165	11699	-
CG	1993	13	ND	-
COE	1993	10509	36193	-
DOA	1993	1532	35828	-
DOE	1993	749	7040	-
FAA	1993	62	0	-
FS	1993	2150	73224	-
FWS	1993	392	8901	-
HHS	1993	472	154	-
INS	1993	21	ND	-
NASA	1993	0	211	-
NOAA	1993	0	ND	-
NPS	1993	1810	51358	-
SI	1993	0	ND	-
TVA	1993	337	ND	-
USBM	1993	ND	29	-
USGS	1993	0	ND	-
USMC	1993	196	868	-
USN	1993	559	ND	-
USPS	1993	ND	ND	-
VA	1993	24	28	-
Total		27857	411043	-
Grand Total		90755	-	-

Table C.5. Identified and estimated archeological sites by development agency, FY 1991-1993.

Agency	Year	Sites Found During Year	Total Known Sites	Agency Estimate of Total Sites
BIA	1991	4209	55788	1103946
EDA	1991	ND	ND	ND
EPA	1991	242	ND	ND
FHA	1991	ND	ND	ND
FmHA	1991	176	ND	ND
FTA	1991	2	ND	ND
GSA	1991	12	ND	ND
HHS	1991	425	154	11
HUD	1991	ND	ND	ND
REA	1991	89	ND	ND
SCS	1991	ND	ND	ND
SLSDC	1991	ND	ND	ND
Total		5155	55942	1103957
BIA	1992	4285	55927	1103946
EDA	1992	ND	ND	ND
EPA	1992	262	ND	ND
FHA	1992	ND	ND	ND
FmHA	1992	94	ND	ND
FTA	1992	3	ND	ND
GSA	1992	17	ND	ND
HHS	1992	439	154	11
HUD	1992	ND	ND	ND
REA	1992	105	ND	ND
SCS	1992	ND	ND	ND
SLSDC	1992	ND	ND	ND
Total		5205	56081	1103957
BIA	1993	4285	55927	-
EDA	1993	ND	ND	-
EPA	1993	92	ND	-
FHA	1993	ND	ND	-
FmHA	1993	342	ND	-
FTA	1993	ND	ND	-
GSA	1993	14	ND	-
HHS	1993	472	154	-
HUD	1993	ND	ND	-
REA	1993	193	ND	-
SCS	1993	890	ND	-
SLSDC	1993	ND	ND	-
Total		6288	56081	-
Grand Total		16648	-	-

Table C.6. Identified archeological sites by regulatory agency, FY 1991-1993.

Agency	Year	Sites Found During Year
FERC	1991	0
FRA	1991	0
MMS	1991	0
NRC	1991	0
OSM	1991	ND
Total		0
FERC		
FRA	1992	0
MMS	1992	1
NRC	1992	0
OSM	1992	ND
Total		1
FERC	1993	1850
FRA	1993	0
MMS	1993	0
NRC	1993	0
OSM	1993	ND
Total		1850
Grand Total		1851

Table C.7. NRHP status of archeological sites by land management agency, FY 1991-1993

Agency	Year	NRHP-Listed Sites	Eligible Sites	Sites Evaluated-Not Listed	Sites Not Eligible	Sites Not Evaluated
AF	1991	111	320	91	1501	3819
ANG	1991	1	0	0	25	3
ARNG	1991	ND	ND	ND	ND	ND
BLM	1991	3263	16062	ND	14571	ND
BOP	1991	1	16	0	23	17
BOR	1991	695	1231	391	550	3375
CG	1991	ND	ND	ND	ND	ND
COE	1991	1067	3933	4894	6412	23402
DOA	1991	169	391	7022	1981	10135
DOE	1991	13	179	1177	812	2495
FAA	1991	ND	ND	ND	ND	ND
FS	1991	ND	ND	ND	ND	ND
FWS	1991	200	271	150	468	3000
HHS	1991	1	2	0	9	0
INS	1991	ND	ND	ND	ND	ND
NASA	1991	2	16	ND	2	ND
NOAA	1991	1	ND	ND	ND	ND
NPS	1991	13838	2375	13362	76	10909
SI	1991	ND	ND	ND	ND	ND
TVA	1991	4	5	ND	ND	ND
USBM	1991	0	0	0	0	29
USGS	1991	ND	ND	ND	ND	ND
USMC	1991	ND	ND	ND	ND	ND
USN	1991	1357	590	55	645	2793
USPS	1991	ND	ND	ND	ND	ND
VA	1991	ND	ND	ND	ND	ND
Total		20723	25391	27142	27075	59977
AF	1992	148	319	115	1510	2943
ANG	1992	1	0	0	25	3
ARNG	1992	ND	ND	ND	ND	ND
BLM	1992	3265	18848	ND	17794	ND
BOP	1992	1	17	0	65	22
BOR	1992	700	1352	391	557	3581
CG	1992	ND	ND	ND	ND	ND
COE	1992	1143	3954	5873	6444	23739
DOA	1992	171	603	7398	2845	10935
DOE	1992	51	197	1190	960	2796
FAA	1992	ND	ND	ND	ND	ND
FS	1992	ND	ND	ND	ND	ND
FWS	1992	200	298	161	531	3000
HHS	1992	1	2	0	9	0
NASA	1992	2	16	ND	2	ND
NOAA	1992	ND	ND	ND	ND	ND
NPS	1992	13873	2694	4769	260	11594
SI	1992	ND	ND	ND	ND	ND
TVA	1992	4	6	ND	ND	ND
USGS	1992	ND	ND	ND	ND	ND
USMC	1992	4	42	231	85	310
USN	1992	1320	590	595	646	20306
USPS	1992	ND	ND	ND	ND	ND
VA	1992	ND	ND	ND	ND	ND
Total		20884	28938	20723	31733	79229
AF	1993	154	319	3340	1527	29
ANG	1993	1	0	0	22	3
ARNG	1993	0	0	0	0	ND
BLM	1993	3268	21067	ND	20210	135446
BOP	1993	ND	2	110	17	20
BOR	1993	8034	1865	5695	2378	ND
CG	1993	ND	ND	ND	ND	ND
COE	1993	2660	3245	5926	6072	18290
DOA	1993	267	1868	7315	6872	19506
DOE	1993	54	315	5361	969	341
FAA	1993	0	0	0	0	ND
FS	1993	547	9554	2448	3802	56873
FWS	1993	200	312	7000	677	712
HHS	1993	1	2	0	9	142
INS	1993	ND	ND	ND	ND	ND
NASA	1993	ND	32	118	20	41
NOAA	1993	ND	ND	ND	ND	ND
NPS	1993	13026	2347	5363	18	30604
SI	1993	ND	ND	ND	ND	ND
TVA	1993	4	8	ND	ND	ND
USBM	1993	0	0	29	0	0
USGS	1993	ND	ND	ND	ND	ND
USMC	1993	4	68	231	166	399
USN	1993	ND	ND	ND	ND	ND
USPS	1993	ND	ND	ND	ND	ND
VA	1993	8	10	10	ND	0
Total		28228	41014	42946	42759	262406

Table C.8. NRHP status of archeological sites by development agency, FY 1991-1993.

Agency	Year	NRHP-Listed Sites	Eligible Sites	Sites Evaluated-Not Listed	Sites Not Eligible	Sites Not Evaluated
BIA	1991	76	1128	11624	1000	12910
EDA	1991	ND	ND	ND	ND	ND
EPA	1991	ND	ND	ND	ND	ND
FHA	1991	ND	ND	ND	ND	ND
FmHA	1991	ND	ND	ND	ND	ND
FTA	1991	ND	ND	ND	ND	ND
GSA	1991	ND	ND	ND	ND	ND
HHS	1991	1	2	0	9	0
HUD	1991	ND	ND	ND	ND	ND
REA	1991	ND	ND	ND	ND	ND
SCS	1991	ND	ND	ND	ND	ND
SLSDC	1991	ND	ND	ND	ND	ND
Total		77	1130	11624	1009	12910
BIA	1992	76	1238	1248	1100	2585
EDA	1992	ND	ND	ND	ND	ND
EPA	1992	ND	ND	ND	ND	ND
FHA	1992	ND	ND	ND	ND	ND
FmHA	1992	ND	ND	ND	ND	ND
FTA	1992	ND	ND	ND	ND	ND
GSA	1992	ND	ND	ND	ND	ND
HHS	1992	1	2	0	9	0
REA	1992	ND	ND	ND	ND	ND
SCS	1991	ND	ND	ND	ND	ND
SLSDC	1991	ND	ND	ND	ND	ND
Total		77	1240	1248	1109	2585
BIA	1993	76	1238	1248	1100	52265
EDA	1993	ND	ND	ND	ND	ND
EPA	1993	ND	ND	ND	ND	ND
FHA	1992	ND	ND	ND	ND	ND
FmHA	1993	ND	ND	ND	ND	ND
FTA	1993	ND	ND	ND	ND	ND
GSA	1993	ND	ND	ND	ND	ND
HHS	1993	1	2	0	9	142
HUD	1993	ND	ND	ND	ND	ND
REA	1993	ND	ND	ND	ND	ND
SCS	1993	ND	ND	ND	ND	ND
SLSDC	1991	ND	ND	ND	ND	ND
Total		77	1240	1248	1109	52407

Table C.9. Permitted or authorized archeological investigations by land management agency and the BIA, FY 1991-1993.

Agency	Year	Permits Issued & In Effect	Applications Received	No Formal Permit
AF	1991	3	1	44
ANG	1991	0	0	0
ARNG	1991	ND	ND	ND
BIA	1991	92	92	1
BLM	1991	425	348	3622
BOP	1991	2	2	0
BOR	1991	27	27	18
CG	1991	ND	ND	ND
COE	1991	25	13	115
DOA	1991	0	0	4
DOE	1991	1	1	1
FAA	1991	NA	NA	NA
FS	1991	ND	ND	ND
FWS	1991	27	17	60
INS	1991	ND	ND	ND
NASA	1991	0	0	0
NOAA	1991	ND	ND	0
NPS	1991	19	16	65
TVA	1991	1	1	1
USBM	1991	0	0	0
USGS	1991	NA	NA	NA
USMC	1991	ND	ND	ND
USN	1991	6	3	11
USPS	1991	NA	NA	NA
VA	1991	ND	ND	ND
Total		628	521	3942
AF	1992	2	0	40
ANG	1992	0	0	0
ARNG	1992	ND	ND	ND
BIA	1992	109	109	1
BLM	1992	452	302	3184
BOP	1992	2	2	0
BOR	1992	16	16	18
CG	1992	ND	ND	ND
COE	1992	29	16	35
DOA	1992	0	0	9
DOE	1992	2	2	2
FAA	1992	NA	NA	NA
FS	1992	ND	ND	ND
FWS	1992	20	12	60
NASA	1992	0	0	0
NOAA	1992	ND	ND	ND
NPS	1992	23	22	47
TVA	1992	2	3	1
USGS	1992	NA	NA	NA
USMC	1992	0	0	0
USN	1992	6	4	29
USPS	1992	NA	NA	NA
VA	1992	ND	ND	ND
Total		663	488	3426
AF	1993	1	0	65
ANG	1993	0	0	0
ARNG	1993	0	0	0
BIA	1993	109	109	1
BLM	1993	479	389	2906
BOP	1993	0	0	NA
BOR	1993	23	22	36
CG	1993	NA	NA	NA
COE	1993	30	7	142
DOA	1993	12	11	166
DOE	1993	10	10	6
FAA	1993	0	0	0
FS	1993	207	166	24
FWS	1993	16	15	21
INS	1993	NA	NA	NA
NASA	1993	0	0	0
NOAA	1993	ND	ND	ND
NPS	1993	20	19	100
SI	1993	NA	NA	NA
TVA	1993	1	2	1
USBM	1993	0	0	0
USGS	1993	NA	NA	NA
USMC	1993	1	1	0
USN	1993	2	2	7
USPS	1993	NA	NA	NA
VA	1993	8	8	ND
Total		919	761	3475
Grand Total		2210	1770	10843

Table C.10. Permits monitored, denied, suspended, and appealed by land management agency and the BIA, FY 1991-1993.

Agency	Year	Applications Denied	Permits Monitored	Permits Appealed	Permits Suspended
AF	1991	0	0	0	0
ANG	1991	0	0	0	0
ARNG	1991	ND	ND	ND	ND
BIA	1991	0	2	0	0
BLM	1991	5	ND	0	0
BOP	1991	0	0	0	0
BOR	1991	0	4	0	0
CG	1991	ND	ND	ND	ND
COE	1991	0	1	0	0
DOA	1991	0	0	0	0
DOE	1991	0	0	0	0
FAA	1991	NA	NA	NA	NA
FS	1991	ND	ND	ND	ND
FWS	1991	2	4	1	1
INS	1991	ND	ND	ND	ND
NASA	1991	0	0	0	0
NOAA	1991	ND	ND	ND	ND
NPS	1991	0	13	0	0
TVA	1991	0	0	0	0
USBM	1991	0	0	0	0
USGS	1991	NA	NA	NA	NA
USMC	1991	ND	ND	ND	ND
USN	1991	0	10	7	0
USPS	1991	NA	NA	NA	NA
VA	1991	ND	ND	ND	ND
Total		7	34	8	1
AF	1992	0	0	0	0
ANG	1992	0	0	0	0
ARNG	1992	ND	ND	ND	ND
BIA	1992	0	1	0	0
BLM	1992	6	ND	0	0
BOP	1992	0	0	0	0
BOR	1992	1	12	1	0
CG	1992	ND	ND	ND	ND
COE	1992	0	5	0	0
DOA	1992	0	0	0	0
DOE	1992	0	1	0	0
FAA	1992	NA	NA	NA	NA
FS	1992	ND	ND	ND	ND
FWS	1992	2	6	0	0
NASA	1992	0	0	0	0
NOAA	1992	ND	ND	ND	ND
NPS	1992	0	11	0	0
TVA	1992	1	0	0	0
USGS	1992	NA	NA	NA	NA
USMC	1992	0	0	0	0
USN	1992	0	16	0	0
USPS	1992	NA	NA	NA	NA
VA	1992	ND	ND	ND	ND
Total		10	52	1	0
AF	1993	0	0	0	0
ANG	1993	0	0	0	0
ARNG	1993	0	0	0	0
BIA	1993	0	1	0	0
BLM	1993	15	ND	1	0
BOP	1993	0	NA	0	0
BOR	1993	0	9	0	0
CG	1993	NA	NA	NA	NA
COE	1993	0	5	0	0
DOA	1993	0	4	0	0
DOE	1993	0	2	0	0
FAA	1993	0	0	0	0
FS	1993	561	43	1	0
FWS	1993	1	7	ND	ND
INS	1993	NA	NA	NA	NA
NASA	1993	0	0	0	0
NOAA	1993	ND	ND	ND	ND
NPS	1993	1	9	0	0
SI	1993	NA	NA	NA	NA
TVA	1993	0	0	0	0
USBM	1993	0	0	0	0
USGS	1993	NA	NA	NA	NA
USMC	1993	0	1	0	0
USN	1993	0	0	0	0
USPS	1993	NA	NA	NA	NA
VA	1993	ND	0	ND	ND
Total		578	84	2	0
Grand Total		595	163	11	1

Table C.11. Number of Tribal notifications about planned archeology by land management agency and the BIA, FY 1991-1993.

Agency	Year	Notification of Tribe
AF	1991	4
ANG	1991	0
ARNG	1991	ND
BIA	1991	135
BLM	1991	232
BOP	1991	0
BOR	1991	11
CG	1991	ND
COE	1991	10
DOA	1991	22
DOE	1991	0
FAA	1991	NA
FS	1991	ND
FWS	1991	13
INS	1991	ND
NASA	1991	0
NOAA	1991	ND
NPS	1991	21
TVA	1991	1
USBM	1991	0
USGS	1991	NA
USMC	1991	ND
USN	1991	6
USPS	1991	NA
VA	1991	ND
Total		455
AF	1992	3
ANG	1992	0
ARNG	1992	ND
BIA	1992	146
BLM	1992	223
BOP	1992	0
BOR	1992	10
CG	1992	ND
COE	1992	8
DOA	1992	19
DOE	1992	2
FAA	1992	NA
FS	1992	ND
FWS	1992	5
NASA	1992	0
NOAA	1992	ND
NPS	1992	30
TVA	1992	2
USGS	1992	NA
USMC	1992	0
USN	1992	3
USPS	1992	NA
VA	1992	ND
Total		451
AF	1993	5
ANG	1993	0
ARNG	1993	0
BIA	1993	146
BLM	1993	380
BOP	1993	0
BOR	1993	7
CG	1993	NA
COE	1993	26
DOA	1993	23
DOE	1993	6
FAA	1993	0
FS	1993	68
FWS	1993	2
INS	1993	NA
NASA	1993	0
NOAA	1993	ND
NPS	1993	9
SI	1993	NA
TVA	1993	2
USBM	1993	0
USGS	1993	NA
USMC	1993	0
USN	1993	9
USPS	1993	NA
VA	1993	ND
Total		683
Grand Total		1589

Table C.12. Overview, identification and evaluation projects by land management agency, FY 1991-1993.

Agency	Year	Agency-Funded Overview Studies	Other Overview Studies	Agency-Funded Identification & Evaluation	Other Identification & Evaluation
AF	1991	229	0	126	3
ANG	1991	1	ND	2	0
ARNG	1991	ND	ND	8	ND
BLM	1991	6072	4620	3622	5221
BOP	1991	3	0	8	0
BOR	1991	199	128	215	143
CG	1991	ND	ND	ND	ND
COE	1991	3117	589	558	522
DOA	1991	49	2	158	6
DOE	1991	386	6	135	6
FAA	1991	NA	NA	NA	NA
FS	1991	ND	ND	7540	ND
FWS	1991	400	50	75	18
HHS	1991	86	0	86	2
INS	1991	ND	ND	ND	ND
NASA	1991	102	0	4	0
NOAA	1991	1	0	1	0
NPS	1991	533	9	277	10
SI	1991	ND	ND	ND	ND
TVA	1991	1000	0	18	0
USBM	1991	NA	NA	NA	NA
USGS	1991	0	0	0	2
USMC	1991	ND	ND	ND	ND
USN	1991	42	0	52	0
USPS	1991	0	0	0	0
VA	1991	ND	ND	ND	ND
Total		12220	5404	12885	5933
AF	1992	273	1	144	3
ANG	1992	6	0	0	0
ARNG	1992	ND	ND	8	8
BLM	1992	5739	3729	3184	4363
BOP	1992	4	0	5	0
BOR	1992	192	115	229	84
CG	1992	ND	ND	2	ND
COE	1992	4569	613	707	417
DOA	1992	139	3	188	6
DOE	1992	666	3	207	3
FAA	1992	NA	NA	NA	NA
FS	1992	ND	ND	7119	ND
FWS	1992	537	35	60	25
HHS	1992	98	0	89	0
NASA	1992	120	0	3	0
NOAA	1992	0	0	2	1
NPS	1992	366	4	189	10
SI	1992	ND	ND	ND	ND
TVA	1992	1200	2	21	2
USGS	1992	0	0	0	0
USMC	1992	1	0	3	0
USN	1992	50	3	46	11
USPS	1992	0	0	0	0
VA	1992	ND	ND	ND	ND
Total		13960	4508	12206	4933
AF	1993	404	15	234	10
ANG	1993	4	0	1	0
ARNG	1993	0	0	0	0
BLM	1993	5976	3961	2906	4407
BOP	1993	6	0	5	0
BOR	1993	341	92	249	62
CG	1993	32	0	6	1
COE	1993	2304	573	515	482
DOA	1993	2090	22	408	20
DOE	1993	1761	1	380	5
FAA	1993	68	16	38	ND
FS	1993	80	2	2114	237
FWS	1993	732	14	108	15
HHS	1993	112	4	138	0
INS	1993	0	0	2	0
NASA	1993	120	ND	2	0
NOAA	1993	1	0	0	0
NPS	1993	253	7	161	10
SI	1993	0	0	1	0
TVA	1993	800	1	39	1
USBM	1993	0	0	ND	ND
USGS	1993	0	0	0	0
USMC	1993	2	0	10	0
USN	1993	25	0	32	ND
USPS	1993	ND	ND	ND	ND
VA	1993	4	2	4	ND
Total		15115	4710	7353	5250
Grand Total		41295	14622	32444	16116

Table C.13. Overview, identification and evaluation projects by development agency, FY 1991-1993.

Agency	Year	Agency-Funded Overview Studies	Other Overview Studies	Agency-Funded Identification & Evaluation	Other Identification & Evaluation
BIA	1991	1098	549	530	833
EDA	1991	ND	ND	ND	ND
EPA	1991	131	ND	74	19
FHA	1991	ND	ND	ND	ND
FmHA	1991	580	1022	78	159
FTA	1991	ND	ND	2	ND
GSA	1991	5	NA	6	na
HHS	1991	86	0	86	2
HUD	1991	ND	ND	ND	ND
REA	1991	1026	NA	85	NA
SCS	1991	ND	ND	ND	ND
SLSDC	1991	ND	ND	ND	ND
Total		2926	1571	861	1013
BIA	1992	1143	530	542	725
EDA	1992	ND	ND	ND	ND
EPA	1992	114	ND	50	22
FHA	1992	ND	ND	ND	ND
FmHA	1992	525	1083	99	206
FTA	1992	5	ND	3	ND
GSA	1992	15	NA	14	NA
HHS	1992	98	0	89	0
REA	1992	1040	NA	113	NA
SCS	1992	ND	ND	ND	ND
SLSDC	1992	ND	ND	ND	ND
Total		2940	1613	910	953
BIA	1993	1143	530	542	725
EDA	1993	ND	ND	ND	ND
EPA	1993	79	143	28	20
FHA	1992	ND	ND	ND	ND
FmHA	1993	600	1400	231	102
FTA	1993	7	ND	3	ND
GSA	1993	35	4	22	4
HHS	1993	112	4	138	0
HUD	1993	ND	ND	ND	ND
REA	1993	1092	NA	101	NA
SCS	1993	207	ND	124	ND
SLSDC	1992	ND	ND	ND	ND
Total		3275	2081	1189	851
Grand Total		9141	5265	2960	2817

Table C.14. Overview, identification and evaluation projects by regulatory agency, FY 1991-1993.

Agency	Year	Agency-Funded Overview Studies	Other Overview Studies	Agency-Funded Identification & Evaluation	Other Identification &Evaluation
FERC	1991	ND	ND	ND	ND
FRA	1991	0	0	0	0
MMS	1991	6	0	0	507
NRC	1991	ND	ND	ND	ND
OSM	1991	ND	ND	ND	ND
Total		6	0	0	507
FERC	1992	ND	ND	ND	ND
FRA	1992	0	0	0	0
MMS	1992	3	0	1	484
NRC	1992	0	0	0	0
OSM	1992	ND	ND	ND	ND
Total		3	0	1	484
FERC	1993	NA	157	NA	45
FRA	1993	ND	NA	1	0
MMS	1993	3	0	2	408
NRC	1993	0	0	0	0
OSM	1993	ND	ND	ND	ND
Total		3	157	3	453
Grand Total		12	157	4	1444

Table C.15. Data recovery projects by land management agency, FY 1991-1993.

Agency	Year	Agency-funded Data Recovery Projects	Other Data Recovery Projects
AF	1991	2	0
ANG	1991	1	0
ARNG	1991	ND	ND
BLM	1991	125	245
BOP	1991	0	0
BOR	1991	15	0
CG	1991	ND	ND
COE	1991	53	37
DOA	1991	19	3
DOE	1991	14	0
FAA	1991	NA	NA
FS	1991	ND	ND
FWS	1991	3	ND
HHS	1991	1	0
INS	1991	ND	ND
NASA	1991	1	0
NOAA	1991	0	0
NPS	1991	23	2
SI	1991	ND	ND
TVA	1991	2	0
USBM	1991	NA	NA
USGS	1991	0	0
USMC	1991	ND	ND
USN	1991	5	6
USPS	1991	0	0
VA	1991	ND	ND
Total		264	293
AF	1992	4	0
ANG	1992	0	0
ARNG	1992	ND	ND
BLM	1992	164	375
BOP	1992	1	0
BOR	1992	18	0
CG	1992	ND	ND
COE	1992	64	86
DOA	1992	39	0
DOE	1992	20	0
FAA	1992	NA	NA
FS	1992	ND	ND
FWS	1992	3	ND
HHS	1992	5	0
NASA	1992	1	0
NOAA	1992	1	ND
NPS	1992	23	4
SI	1992	ND	ND
TVA	1992	1	0
USGS	1992	0	0
USMC	1992	0	0
USN	1992	31	3
USPS	1992	0	0
VA	1992	ND	ND
Total		375	468
AF	1993	2	0
ANG	1993	0	0
ARNG	1993	0	0
BLM	1993	177	90
BOP	1993	0	0
BOR	1993	20	0
CG	1993	3	0
COE	1993	42	42
DOA	1993	51	1
DOE	1993	25	0
FAA	1993	8	ND
FS	1993	23	14
FWS	1993	11	4
HHS	1993	2	NA
INS	1993	0	0
NASA	1993	1	0
NOAA	1993	1	5
NPS	1993	15	2
SI	1993	0	0
TVA	1993	0	0
USBM	1993	NA	NA
USGS	1993	0	NA
USMC	1993	0	0
USN	1993	19	0
USPS	1993	ND	ND
VA	1993	ND	ND
Total		400	158
Grand Total		1039	919

Table C.16. Data recovery projects by development agency, FY 1991-1993.

Agency	Year	Agency-Funded Data Recovery Projects	Other Data Recovery Projects
BIA	1991	4	14
EDA	1991	ND	ND
EPA	1991	11	26
FHA	1991	ND	ND
FmHA	1991	0	0
FTA	1991	2	ND
GSA	1991	6	NA
HHS	1991	1	0
HUD	1991	ND	ND
REA	1991	0	NA
SCS	1991	ND	ND
SLSDC	1991	ND	ND
Total		24	40
BIA	1992	6	13
EDA	1992	ND	ND
EPA	1992	3	30
FHA	1992	ND	ND
FmHA	1992	2	0
FTA	1992	4	ND
GSA	1992	2	NA
HHS	1992	5	0
REA	1992	4	NA
SCS	1992	ND	ND
SLSDC	1992	ND	ND
Total		26	43
BIA	1993	6	13
EDA	1993	ND	ND
EPA	1993	9	15
FHA	1993	ND	ND
FmHA	1993	1	0
FTA	1993	1	ND
GSA	1993	2	6
HHS	1993	2	NA
HUD	1993	ND	ND
REA	1993	2	NA
SCS	1993	8	ND
SLSDC	1993	ND	ND
Total		31	34
Grand Total		81	117

Table C.17. Data recovery projects by regulatory agency, FY 1991-1993.

Agency	Year	Agency-Funded Data Recovery Projects	Other Data Recovery Projects
FERC	1991	ND	ND
FRA	1991	0	0
MMS	1991	0	0
NRC	1991	ND	ND
OSM	1991	ND	ND
Total		0	0
FERC	1991	ND	ND
FRA	1992	0	0
MMS	1992	1	0
NRC	1992	0	0
OSM	1992	ND	ND
Total		1	0
FERC	1993	NA	20
FRA	1993	ND	NA
MMS	1993	2	0
NRC	1993	0	0
OSM	1993	ND	ND
Total		2	20
Grand Total		3	20

Table C.18. Unanticipated discovery projects by land management agency, FY 1991-1993.

Agency	Year	Agency-Funded Unanticipated Discoveries	Other Unanticipated Discoveries	Unanticipated Discoveries Requiring Data Recovery
AF	1991	1	0	0
ANG	1991	0	0	0
ARNG	1991	5	ND	5
BLM	1991	47	ND	47
BOP	1991	0	0	0
BOR	1991	1	0	0
CG	1991	ND	ND	ND
COE	1991	36	23	19
DOA	1991	1	0	1
DOE	1991	1	0	0
FAA	1991	NA	NA	NA
FS	1991	ND	ND	ND
FWS	1991	ND	ND	ND
HHS	1991	7	0	3
INS	1991	ND	ND	ND
NASA	1991	0	0	0
NOAA	1991	0	0	0
NPS	1991	0	0	0
SI	1991	ND	ND	ND
TVA	1991	1	0	0
USBM	1991	NA	NA	NA
USGS	1991	0	0	0
USMC	1991	ND	ND	ND
USN	1991	1	ND	ND
USPS	1991	0	0	0
VA	1991	ND	ND	ND
Total		101	23	75
AF	1992	1	3	3
ANG	1992	0	0	0
ARNG	1992	5	ND	5
BLM	1992	104	nd	103
BOP	1992	0	0	0
BOR	1992	1	0	1
CG	1992	ND	ND	ND
COE	1992	11	52	23
DOA	1992	3	0	1
DOE	1992	3	0	1
FAA	1992	NA	NA	NA
FS	1992	ND	ND	ND
FWS	1992	ND	ND	ND
HHS	1992	7	0	3
NASA	1992	2	0	2
NOAA	1992	0	0	0
NPS	1992	2	1	2
SI	1992	ND	ND	ND
TVA	1992	1	0	1
USGS	1992	0	0	0
USMC	1992	0	0	0
USN	1992	2	ND	ND
USPS	1992	0	0	0
VA	1992	ND	ND	ND
Total		142	56	145
AF	1993	0	0	-
ANG	1993	0	0	-
ARNG	1993	0	0	-
BLM	1993	53	ND	-
BOP	1993	0	0	-
BOR	1993	5	0	-
CG	1993	1	0	-
COE	1993	7	6	-
DOA	1993	25	2	-
DOE	1993	5	0	-
FAA	1993	3	ND	-
FS	1993	14	1	-
FWS	1993	1	3	-
HHS	1993	7	NA	-
INS	1993	0	0	-
NASA	1993	0	0	-
NOAA	1993	0	0	-
NPS	1993	2	0	-
SI	1993	0	0	-
TVA	1993	1	0	-
USBM	1993	0	0	-
USGS	1993	0	0	-
USMC	1993	0	0	-
USN	1993	1	0	-
USPS	1993	ND	ND	-
VA	1993	ND	ND	-
Total		125	12	-
Grand Total		368	91	-

Table C.19. Unanticipated discovery projects by development agency, FY 1991-1993.

Agency	Year	Agency-Funded Unanticipated Discoveries	Other Unanticipated Discoveries	Unanticipated Discoveries Requiring Data Recovery
BIA	1991	30	2	32
EDA	1991	ND	ND	ND
EPA	1991	5	2	2
FHA	1991	ND	ND	ND
FmHA	1991	66	0	2
FTA	1991	ND	ND	ND
GSA	1991	0	NA	NA
HHS	1991	7	0	3
HUD	1991	ND	ND	ND
REA	1991	0	NA	0
SCS	1991	ND	ND	ND
SLSDC	1991	ND	ND	ND
Total		108	4	39
BIA	1992	31	0	30
EDA	1992	ND	ND	ND
EPA	1992	2	4	ND
FHA	1992	ND	ND	ND
FmHA	1992	64	0	9
FTA	1992	1	ND	ND
GSA	1992	0	NA	NA
HHS	1992	7	0	3
REA	1992	0	NA	0
SCS	1992	ND	ND	ND
SLSDC	1992	ND	ND	ND
Total		105	4	42
BIA	1993	31	0	-
EDA	1993	ND	ND	-
EPA	1993	4	3	-
FHA	1993	ND	ND	-
FmHA	1993	4	0	-
FTA	1993	ND	ND	-
GSA	1993	0	0	-
HHS	1993	7	NA	-
HUD	1993	ND	ND	-
REA	1993	0	NA	-
SCS	1993	ND	ND	-
SLSDC	1993	ND	ND	-
Total		46	3	-
Grand Total		259	11	-

Table C.20. Unanticipated discovery projects by regulatory agency, FY 1991-1993.

Agency	Year	Agency-Funded Unanticipated Discoveries	Other Unanticipated Discoveries	Unanticipated Discoveries Requiring Data Recovery
FERC	1991	ND	ND	ND
FRA	1991	0	0	0
MMS	1991	0	0	0
NRC	1991	ND	ND	ND
OSM	1991	ND	ND	ND
Total		0	0	0
FERC	1992	ND	ND	ND
FRA	1992	0	0	0
MMS	1992	0	0	0
NRC	1992	NA	NA	NA
OSM	1992	ND	ND	ND
Total		0	0	0
FERC	1993	NA	93	-
FRA	1993	ND	NA	-
MMS	1993	0	0	-
NRC	1993	NA	NA	-
OSM	1993	ND	ND	-
Total		0	93	-
Grand Total		0	93	-

Table C.21. Expenditures for archeological projects by land management agency, FY 1991-1993.

Agency	Year	Overview Cost	Identification & Evaluation Cost	Data Recovery Cost	Unanticipated Discovery Cost
AF	1991	723732	822882	106000	0
ANG	1991	31795	25000	ND	0
ARNG	1991	ND	224000	0	0
BLM	1991	ND	ND	709695	ND
BOP	1991	8250	187100	0	0
BOR	1991	86290	836728	4093337	300
CG	1991	ND	ND	ND	ND
COE	1991	2191565	8632756	2951438	105000
DOA	1991	791000	1283000	111600	7000
DOE	1991	526206	1188856	551423	0
FAA	1991	NA	36355	NA	NA
FS	1991	ND	ND	ND	ND
FWS	1991	100000	700000	60000	ND
INS	1991	ND	ND	ND	ND
NASA	1991	61000	78600	4809	0
NOAA	1991	ND	ND	0	0
NPS	1991	510777	2802296	1186000	0
SI	1991	ND	ND	ND	ND
TVA	1991	62000	330000	17000	1000
USBM	1991	NA	NA	NA	NA
USGS	1991	0	0	0	0
USMC	1991	ND	ND	ND	ND
USN	1991	824,000	1127768	192000	10300
USPS	1991	0	0	0	0
VA	1991	ND	ND	ND	ND
Total		5093439	18275341	9983302	123600
AF	1992	303260	889406	38806	30806
ANG	1992	120000	0	0	0
ARNG	1992	ND	410000	0	0
BLM	1992	ND	ND	639985	ND
BOP	1992	25950	278000	520000	0
BOR	1992	243000	1430132	4130068	3300
CG	1992	ND	179000	ND	ND
COE	1992	2982141	8210050	4383424	299000
DOA	1992	906000	4061482	550400	0
DOE	1992	497177	2068184	1035897	33000
FAA	1992	NA	24224	NA	NA
FS	1992	ND	ND	ND	ND
FWS	1992	150000	500000	24000	ND
NASA	1992	600	33900	5510	540
NOAA	1992	0	ND	ND	0
NPS	1992	1073670	3984836	1178640	16000
SI	1992	ND	ND	ND	ND
TVA	1992	74000	293000	3000	18000
USGS	1992	0	0	0	0
USMC	1992	22059	205450	0	0
USN	1992	1112900	1246615	1455000	410000
USPS	1992	0	0	0	0
VA	1992	ND	ND	ND	ND
Total		7510757	23814279	[illegible]	810646
AF	1993	1259000	1354000	15000	0
ANG	1993	260000	30000	0	0
ARNG	1993	0	0	0	0
BLM	1993	ND	ND	722222	ND
BOP	1993	3667	209707	0	0
BOR	1993	125600	2310760	3796000	237000
CG	1993	163811	188288	107065	5000
COE	1993	4410000	10857000	3402000	431000
DOA	1993	766422	10292831	659500	103250
DOE	1993	1303579	2451439	665420	10000
FAA	1993	94000	422517	9361365	152882
FS	1993	147895	3484010	183300	22700
FWS	1993	150000	480000	1400000	ND
INS	1993	0	129	0	0
NASA	1993	600	24000	6000	0
NOAA	1993	20000	0	300000	0
NPS	1993	883100	3186504	1262213	14722
SI	1993	0	11000	0	0
TVA	1993	53000	195000	0	1500
USBM	1993	0	ND	NA	0
USGS	1993	0	0	0	0
USMC	1993	35000	731450	0	0
USN	1993	1625000	283000	147500	10000
USPS	1993	ND	ND	ND	ND
VA	1993	4600	43900	ND	ND
Total		11305274	36555535	[illegible]	988054
Grand Total		23909470	78645155	45975617	1922300

Table C.22. Expenditures for archeological projects by development agency, FY 1991-1993.

Agency	Year	Overview Cost	Identification & Evaluation Cost	Data Recovery Cost	Unanticipated Discovery Cost
BIA	1991	147508	4082005	2200000	30000
EDA	1991	ND	ND	ND	ND
EPA	1991	129500	703000	520000	15000
FHA	1991	ND	ND	ND	ND
FmHA	1991	118400	153260	0	50000
FTA	1991	ND	91909	138000	ND
GSA	1991	98900	656600	1329000	NA
HHS	1991	7505	548188	17888	7500
HUD	1991	ND	ND	ND	ND
REA	1991	51300	219655	0	0
SCS	1991	ND	ND	ND	ND
SLSDC	1991	ND	ND	ND	ND
Total		453113	6454617	4204888	102500
BIA	1992	158998	4067702	2307000	35000
EDA	1992	ND	ND	ND	ND
EPA	1992	67000	205000	176000	3000
FHA	1992	ND	ND	ND	ND
FmHA	1992	151000	335650	34000	141000
FTA	1992	ND	100006	309000	68000
GSA	1992	138300	624000	6056000	NA
HHS	1992	46190	572488	63820	19800
REA	1992	52000	282161	34000	0
SCS	1992	ND	ND	ND	ND
SLSDC	1992	ND	ND	ND	ND
Total		613488	6187007	8979820	266800
BIA	1993	158998	4067702	2307000	35000
EDA	1993	ND	ND	ND	ND
EPA	1993	100000	130000	130000	5000
FmHA	1993	160000	250000	6000	26000
FTA	1993	ND	284563	34919	ND
GSA	1993	238500	551000	132000	0
HHS	1993	75000	887000	51000	16000
HUD	1993	ND	ND	ND	ND
REA	1993	54600	319636	12863	0
SCS	1993	235744	483279	129672	ND
SLSDC	1993	ND	ND	ND	ND
Total		1022842	6973180	2803454	82000
Grand Total		2189443	19614804	15988162	451300

Table C.23. Expenditures for archeological studies by regulatory agency, FY 1991-1993.

Agency	Year	Overview Cost	Identification & Evaluation Cost	Data Recovery Cost	Unanticipated Discovery Cost
FERC	1991	ND	ND	ND	ND
FRA	1991	0	0	0	0
MMS	1991	34000	53000	0	0
NRC	1991	ND	ND	ND	ND
OSM	1991	ND	ND	ND	ND
Total		34000	53000	0	0
FERC	1992	ND	ND	ND	ND
FRA	1992	0	0	0	0
MMS	1992	16500	53000	2000	0
NRC	1992	0	0	0	NA
OSM	1992	ND	ND	ND	ND
Total		16500	53000	2000	0
FERC	1993	NA	NA	NA	NA
FRA	1993	ND	88000	ND	ND
MMS	1993	11538	96744	8400	0
NRC	1993	0	0	0	NA
OSM	1993	ND	ND	ND	ND
Total		11538	96744	8400	0
Grand Total		62038	290744	10400	0

Table C.24. Law enforcement actions and expenditures by land management agency and the BIA, FY 1991-1993.

Agency	Year	Violations	Arrest	Citations	Enforcement Costs
AF	1991	0	0	0	3000
ANG	1991	0	0	0	0
ARNG	1991	ND	ND	ND	ND
BIA	1991	1	0	1	ND
BLM	1991	151	19	6	698750
BOP	1991	0	0	0	0
BOR	1991	0	0	0	0
CG	1991	ND	ND	ND	ND
COE	1991	9	1	3	ND
DOA	1991	2	0	0	0
DOE	1991	0	0	0	726400
FAA	1991	NA	NA	NA	NA
FS	1991	ND	ND	ND	ND
FWS	1991	31	ND	13	30000
INS	1991	ND	ND	ND	ND
NASA	1991	0	0	0	0
NOAA	1991	0	0	0	ND
NPS	1991	112	6	20	181683
SI	1991	ND	ND	ND	ND
TVA	1991	ND	0	0	ND
USBM	1991	0	0	0	0
USGS	1991	NA	NA	NA	NA
USMC	1991	ND	ND	ND	ND
USN	1991	0	0	0	0
USPS	1991	NA	NA	NA	NA
VA	1991	ND	ND	ND	ND
Total		306	26	43	1639833
AF	1992	0	0	0	3000
ANG	1992	0	0	0	0
ARNG	1992	ND	ND	ND	ND
BIA	1992	0	0	0	0
BLM	1992	263	13	19	948100
BOP	1992	0	0	0	0
BOR	1992	2	0	0	0
CG	1992	ND	ND	ND	ND
COE	1992	9	2	2	ND
DOA	1992	0	0	0	15000
DOE	1992	1	0	0	827400
FAA	1992	NA	NA	NA	NA
FS	1992	ND	ND	ND	ND
FWS	1992	82	ND	19	40000
NASA	1992	0	0	0	0
NOAA	1992	ND	ND	ND	NA
NPS	1992	167	7	30	446821
SI	1992	ND	ND	ND	ND
TVA	1992	ND	0	0	ND
USGS	1992	NA	NA	NA	NA
USMC	1992	0	0	0	0
USN	1992	0	0	0	0
USPS	1992	NA	NA	NA	NA
VA	1992	ND	ND	ND	ND
Total		524	22	70	2280321
AF	1993	0	0	0	ND
ANG	1993	0	0	0	0
ARNG	1993	0	0	0	0
BIA	1993	0	0	0	0
BLM	1993	172	8	16	1031374
BOP	1993	0	0	0	0
BOR	1993	2	0	0	0
CG	1993	NA	NA	NA	NA
COE	1993	8	1	6	1000
DOA	1993	1	1	0	22060
DOE	1993	0	0	0	131000
FAA	1993	0	0	0	0
FS	1993	435	16	28	ND
FWS	1993	20	0	16	40000
INS	1993	NA	NA	NA	NA
NASA	1993	0	0	0	0
NOAA	1993	0	0	0	0
NPS	1993	132	11	24	389688
SI	1993	NA	NA	NA	NA
TVA	1993	ND	0	0	ND
USBM	1993	0	0	0	0
USGS	1993	NA	NA	NA	NA
USMC	1993	0	0	0	0
USN	1993	0	0	0	0
USPS	1993	NA	NA	NA	NA
VA	1993	ND	ND	ND	ND
Total		770	37	90	1615122
Grand Total		1600	85	203	5535276

Table C.25. Prosecution of archeological violations by land management agency and the BIA, FY 1991-1993.

Agency	Year	Prosecution	ARPA Misdemeanor Conviction	ARPA Felony Conviction	Non-ARPA Prosecution	Civil Penalty
AF	1991	0	0	0	0	0
ANG	1991	0	0	0	0	0
ARNG	1991	ND	ND	ND	ND	ND
BIA	1991	0	0	0	0	0
BLM	1991	22	3	0	8	0
BOP	1991	0	0	0	0	0
BOR	1991	0	0	0	0	0
CG	1991	ND	ND	ND	ND	ND
COE	1991	1	1	0	0	0
DOA	1991	0	0	0	0	0
DOE	1991	0	0	0	0	0
FAA	1991	NA	NA	NA	NA	NA
FS	1991	ND	ND	ND	ND	ND
FWS	1991	5	ND	0	19	0
INS	1991	ND	ND	ND	ND	ND
NASA	1991	0	0	0	0	0
NOAA	1991	0	0	0	0	0
NPS	1991	7	9	2	4	2
SI	1991	ND	ND	ND	ND	ND
TVA	1991	0	0	0	0	0
USBM	1991	0	0	0	0	0
USGS	1991	NA	NA	NA	NA	NA
USMC	1991	ND	ND	ND	ND	ND
USN	1991	0	0	0	0	0
USPS	1991	NA	NA	NA	NA	NA
VA	1991	ND	ND	ND	ND	ND
Total		35	13	2	31	2
AF	1992	0	0	0	0	0
ANG	1992	0	0	0	0	0
ARNG	1992	ND	ND	ND	ND	ND
BIA	1992	0	0	0	0	0
BLM	1992	19	15	5	14	3
BOP	1992	0	0	0	0	0
BOR	1992	0	0	0	0	0
CG	1992	ND	ND	ND	ND	ND
COE	1992	2	2	0	2	0
DOA	1992	0	0	0	0	0
DOE	1992	0	0	0	0	0
FAA	1992	NA	NA	NA	NA	NA
FS	1992	ND	ND	ND	ND	ND
FWS	1992	7	0	0	43	ND
NASA	1992	0	0	0	0	0
NOAA	1992	ND	ND	ND	ND	ND
NPS	1992	30	21	3	30	13
SI	1992	ND	ND	ND	ND	ND
TVA	1992	0	0	0	0	0
USGS	1992	NA	NA	NA	NA	NA
USMC	1992	0	0	0	0	0
USN	1992	0	0	0	0	0
USPS	1992	NA	NA	NA	NA	NA
VA	1992	ND	ND	ND	ND	ND
Total		58	38	8	89	16
AF	1993	0	0	0	0	0
ANG	1993	0	0	0	0	0
ARNG	1993	0	0	0	0	0
BIA	1993	0	0	0	0	0
BLM	1993	22	8	5	2	1
BOP	1993	0	0	0	0	0
BOR	1993	0	0	0	0	0
CG	1993	NA	NA	NA	NA	NA
COE	1993	0	1	0	1	0
DOA	1993	0	0	0	0	0
DOE	1993	0	0	0	6	0
FAA	1993	0	0	0	0	0
FS	1993	22	7	7	13	1
FWS	1993	10	2	0	20	2
INS	1993	NA	NA	NA	NA	NA
NASA	1993	0	0	0	0	0
NOAA	1993	0	0	0	0	0
NPS	1993	26	10	1	10	9
SI	1993	NA	NA	NA	NA	NA
TVA	1993	0	0	0	0	0
USBM	1993	0	0	0	0	0
USGS	1993	NA	NA	NA	NA	NA
USMC	1993	0	0	0	0	0
USN	1993	0	0	0	0	0
USPS	1993	NA	NA	NA	NA	NA
VA	1993	ND	ND	ND	ND	ND
Total		80	28	13	52	13
Grand Total		173	79	23	172	31

Table C.26. ARPA financial information by land management agency and the BIA, FY 1991-1993.

Agency	Year	ARPA Criminal Fines	ARPA Civil Penalties	Restore & Repair Cost	Artifact Commercial Value	Property Commercial Value
AF	1991	0	0	0	0	0
ANG	1991	0	0	0	0	0
ARNG	1991	ND	ND	ND	ND	ND
BIA	1991	0	0	0	0	0
BLM	1991	850	0	0	517125	50
BOP	1991	0	0	0	0	0
BOR	1991	0	0	0	0	0
CG	1991	ND	ND	ND	ND	ND
COE	1991	300	0	0	250	0
DOA	1991	0	0	87500	0	0
DOE	1991	0	0	0	0	0
FAA	1991	NA	NA	NA	NA	NA
FS	1991	ND	ND	ND	ND	ND
FWS	1991	600	0	0	50	50
INS	1991	ND	ND	ND	ND	ND
NASA	1991	0	0	0	0	0
NOAA	1991	0	0	0	NA	NA
NPS	1991	8550	3008	9666	705	3810
TVA	1991	0	0	0	0	0
USBM	1991	0	0	0	0	0
USGS	1991	NA	NA	NA	NA	NA
USMC	1991	ND	ND	ND	ND	ND
USN	1991	0	0	0	0	0
USPS	1991	NA	NA	NA	NA	NA
VA	1991	ND	ND	ND	ND	ND
Total		10300	3008	97166	518130	3910
AF	1992	0	0	0	0	0
ANG	1992	0	0	0	0	0
ARNG	1992	ND	ND	ND	ND	ND
BIA	1992	0	0	0	0	0
BLM	1992	10150	6000	0	281958	13000
BOP	1992	0	0	0	0	0
BOR	1992	0	0	0	0	0
CG	1992	ND	ND	ND	ND	ND
COE	1992	5225	0	6000	ND	0
DOA	1992	0	0	0	10000	250
DOE	1992	0	0	5000	0	0
FAA	1992	NA	NA	NA	NA	NA
FS	1992	ND	ND	ND	ND	ND
FWS	1992	3000	ND	ND	0	0
NASA	1992	0	0	0	0	0
NOAA	1992	ND	ND	ND	NA	NA
NPS	1992	7199	9758	5675	14678	11050
TVA	1992	0	0	0	0	0
USGS	1992	NA	NA	NA	NA	NA
USMC	1992	0	0	0	0	0
USN	1992	0	0	2000	0	0
USPS	1992	NA	NA	NA	NA	NA
VA	1992	ND	ND	ND	ND	ND
Total		25574	15758	18675	306636	24300
AF	1993	0	0	0	0	0
ANG	1993	0	0	0	0	0
ARNG	1993	0	0	0	0	0
BIA	1993	0	0	0	0	0
BLM	1993	21625	3000	3920	158426	3200
BOP	1993	0	0	0	0	0
BOR	1993	0	0	0	0	0
CG	1993	NA	NA	NA	NA	NA
COE	1993	0	0	0	0	0
DOA	1993	0	0	1768	200	0
DOE	1993	0	0	5000	0	0
FAA	1993	0	0	0	0	0
FS	1993	ND	12840	ND	ND	0
FWS	1993	4300	0	0	0	765
INS	1993	NA	NA	NA	NA	NA
NASA	1993	0	0	0	0	0
NOAA	1993	0	0	0	0	0
NPS	1993	15175	7444	59298	244680	16315
SI	1993	NA	NA	NA	NA	NA
TVA	1993	0	0	0	0	0
USBM	1993	0	0	0	0	0
USGS	1993	NA	NA	NA	NA	NA
USMC	1993	0	0	0	0	0
USN	1993	0	0	0	0	0
USPS	1993	NA	NA	NA	NA	NA
VA	1993	ND	ND	ND	ND	ND
Total		41100	23284	69986	403306	20280
Grand Total		76974	42050	185827	1228072	48490