

ANNUAL REPORT
of the
SOUTHWEST CULTURAL RESOURCES
CENTER



ANTHROPOLOGY ■ CONSERVATION ■ HISTORY
SUBMERGED CULTURAL RESOURCES

FISCAL YEAR 1987

ANNUAL REPORT OF THE
**SOUTHWEST CULTURAL RESOURCES
CENTER**

FY1987

Submitted by
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PREFACE

The Southwest Cultural Resources Center continued its excellent programs during Fiscal Year 1987, and I am proud of its many accomplishments. This Annual Report for FY 1987 provides an overview of the Center's progress in cultural resources management (including submerged cultural resources) for the

Southwest Region and other regions. The Center staff is highly professional and aggressively seeks the best possible care for the National Park Service's cultural resources. As a reminder of the Center's activities and accomplishments, I am pleased to provide this Annual Report for Fiscal Year 1987.

**John E. Cook, Regional Director,
Southwest Region**

INTRODUCTION

The Southwest Cultural Resource Center has responsibility for overseeing cultural resource management activities within the Southwest Region of the National Park Service. The Divisions of Anthropology, History, and Conservation oversee CRM operations within their special expertise through assistance to the parks and the directorate and divisions within the Regional Office. A unique part of the Center, and the only operation of its kind in the National Park Service, the Submerged Cultural Resources Unit has Servicewide responsibilities to assist parks and regions in management of their underwater cultural resources.

Within the Center, the mixture of disciplines under a single umbrella organization allows multiple perspectives to be brought to bear on cultural resource management issues to the benefit of all programs. The Submerged Cultural Resources Unit operations are an important part of this mixture of disciplines and backgrounds as this unit shares expertise to some

degree with all other units in the Center. Overall, professionals in the areas of anthropology, historical architecture, and history interact freely in a program that blends diverse professional views on cultural resource management issues and special projects.

Expertise regarding cultural resource management issues is rendered either to park Superintendents and their staffs or to the Associate Regional Director, Planning and Cultural Resources.

The major sections that follow detail the organization, mission, and accomplishments of the individual divisions within the Center. Although the report is divided according to disciplines, the interaction between groups is the strength of the Centerwide organization. Employees frequently work across organizational lines to produce better quality in products and services. Appendix A provides a listing of the employees of the Center, their titles, and their division.

SECTION 1

OFFICE OF THE CHIEF

In addition to overseeing the Southwest Cultural Resources Center, the Chief of the Center published several articles on historic preservation:

"The Texas School Book Depository Building: Preserving the Dark Side of History," Dallas Morning News June 1, 1987; Santa Fe Reporter, September 23, 1987.

"Custer at the Little Bighorn: The Great Retrospective," Richmond Times Dispatch, June 21, 1987.

"Going to Graceland," Richmond Times Dispatch, August 2, 1987; Santa Fe Reporter, August 19, 1987.

All three articles subsequently appeared in the National Park Service Courier.

A fourth article, "Why Take a Trip to Bountiful--Won't Anaheim Do?" has been accepted for publication in Landscape, Fall, 1988.

The Chief also served as the cultural resource specialist for the operations evaluation team at Yellowstone National Park. He oversaw

a review of the cultural resource management organizational structure in the North Atlantic Regional Office, at the request of the Associate Regional Director, Planning & Resource Preservation, North Atlantic Regional Office. He consulted with the Dallas County Historical Foundation on their plans to place an exhibit on the sixth floor of the Texas School Book Depository relating to the assassination of President Kennedy. He contributed to the preparation of a Reconnaissance Report and Study of Alternatives for the Texas School Book Depository.

He presented an overview session for the Cultural Resource Management course given at San Antonio Missions National Historical Park. Working with the Williamsport Preservation Training Center, he assisted with a special Cultural Resource Management course at Cape Hatteras National Seashore. He also gave presentations on Cultural Resource Management in the National Park Service for Texas A&M University, Department of Parks & Preservation; Westerners International of Santa Fe; Bandelier National Monument campfire program; and an international tour group sponsored by the United States Information Agency.

The Office of the Chief increased in size in 1987 as Sue Bengtson was transferred from the Division of Conservation. Sue's work as Budget Assistant serves the Office of the Chief and all divisions of the Center, as needed. Sue reports directly to Jo Ann Ortiz, Secretary to the Center Chief.

SPECIAL CENTERWIDE PROJECTS

In addition to the regular projects and responsibilities which the Center addressed this year, there were several projects of a very special nature which required the support of many Center employees these included:

Regional Summary and Action Program

The Center spent several of the winter months compiling the Southwest Region's Regional Summary and Action Programs (RSAP). Believing that this project would burden the parks with too much paperwork, the Center prepared the initial draft, then submitted it to the parks for their review. At the Center Chief's request, Melody Webb served as coordinator for this effort.

The plan is divided into four major sections. The Resource Summary may provide the most useful information for management. It summarizes all data known about the park's resources. The Resource Needs and Issues section addresses the major problems in cultural resources -- ruins stabilization, curatorial backlogs, research needs, and staffing issues. The Action Program attempts to address the problems. The Southwest Region's Regional Summary and Action Program was considered by the Washington Office to be one of the very best submitted.

Resource Management Plans

The Center also coordinated the updating of the Region's Resource Management Plans. All documents were initially prepared by the parks, with the Center staff and the National Resource staff consulting as necessary. The Center then assisted with the lengthy and complex review of the documents, seeking to make them useful and complete. The review is still in process.

Computerized Tracking System

The first full year of using the Regional computer system for tracking the budgets and preservation projects was implemented in 1987.

This resulted in a very good final obligation rate of approximately 100% for a program of \$1.5 million. The system helps in financial monitor-

ing as well as project status of critical information such as deadlines, compliance records and responsible organizations.

SECTION TWO

DIVISION OF ANTHROPOLOGY

The organizational structure of the division was changed somewhat this year as a result of recommendations of an Operations Evaluation in November 1986. One recommendation was that a division or branch of curatorial services be established in the Southwest Regional Office. The response to this recommendation was to establish a Branch of Curatorial Services within the Division of Interpretation. This branch was established in February 1987, thus eliminating the need for a curatorial branch in this division, and Kim McLean was transferred to the new branch, along with some funding being used by the division for curatorial work.

The Operations Evaluation also recommended consideration of filling the vacant position of Chief, Branch of Cultural Resources Management. This has not been accomplished as yet.

A long term research plan and a plan for eliminating backlog reports were developed by the division in response to other recommendations of the Operations Evaluation.

The Division Chief secured cultural cyclic funds for assessment and preservation work on archeological sites in Amistad Recreation Area. This project, carried out in cooperation with the Texas Historical Commission, accomplished a great deal.

The Chief also helped organize an Archeological Resources Protection Act training course at Amistad, and the division provided funding for instructors, meeting place, and some participants' travel expenses. Other efforts in the ARPA realm were the production of a sign that was distributed to all the parks, and funding of a mini PC for use of the Division of Protection

and Visitor Use Management during onsite investigations.

A temporary Technical Writer-Editor position was established during the year and Alice Benfor was hired in the position to edit various reports produced in the Center.

tegral part of the Southwest Cultural Resources Center. The primary mission of the branch is to provide direction, advice and assistance to the various Southwest Region parks in the management of archeological and ethnographic resources. A major responsibility is to program for, plan, and execute the necessary archeological

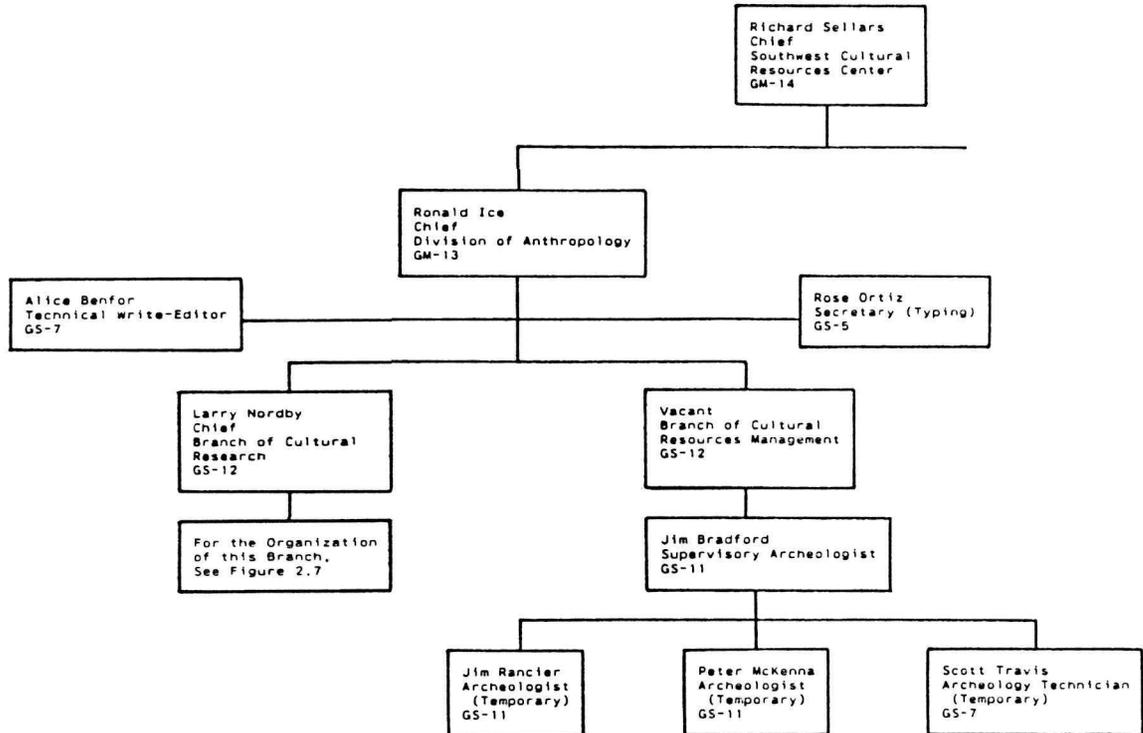


Figure 2.1 Organization of the Division of Anthropology.

BRANCH OF CULTURAL RESOURCES MANAGEMENT

The Branch of Cultural Resources Management of the Division of Anthropology continued its function through FY 87 as an in-

and anthropological studies in advance of National Park Service undertakings that could impact important archeological and ethnographic resources located within the park areas. In addition, through its review responsibilities, the branch assures that all planning documents and development activities are in compliance with applicable legislation, policies and procedures relative to the preservation and protection of cultural resources within the Southwest Region.

Staff

During most of FY 87, the staff of the branch was maintained at four people. As through FY 86, the position of Branch Chief was never filled and thus the operation of the branch was affected by the absence of a full-time person in this key position. Senior Staff Archeologist Jim Bradford continued his role as unofficial Acting Branch Chief throughout the year, dividing his time between the two full-time jobs. However, much of the daily operation was enhanced by the continued employment of Archeologists Peter McKenna and Jim Rancier. Mr. McKenna's time, as in the previous year, was shared between this branch and the Branch of Cultural Research.

Archeological Technician John Stein continued working from the previous fiscal year through February of 1987 when he severed employment with the National Park Service and took a job with the Navajo Nation tribal utilities program. Mr. Stein's position was vacant until May when Scott Travis was hired to replace him. With the filling of the technician level position, the branch was able to continue providing assistance to the park areas at near full staffing. Figure 2.2 depicts the organizational structure of the branch.

All but one of the 37 parks in the Region contain historic and/or prehistoric cultural resources within their boundaries. Of these 37 parks, 14 were established primarily for the cultural resources they contain and, of that 14, 11 were set aside as archeological preserves. Three parks (Amistad Recreation Area, Bandelier National Monument, and Big Bend National Park)

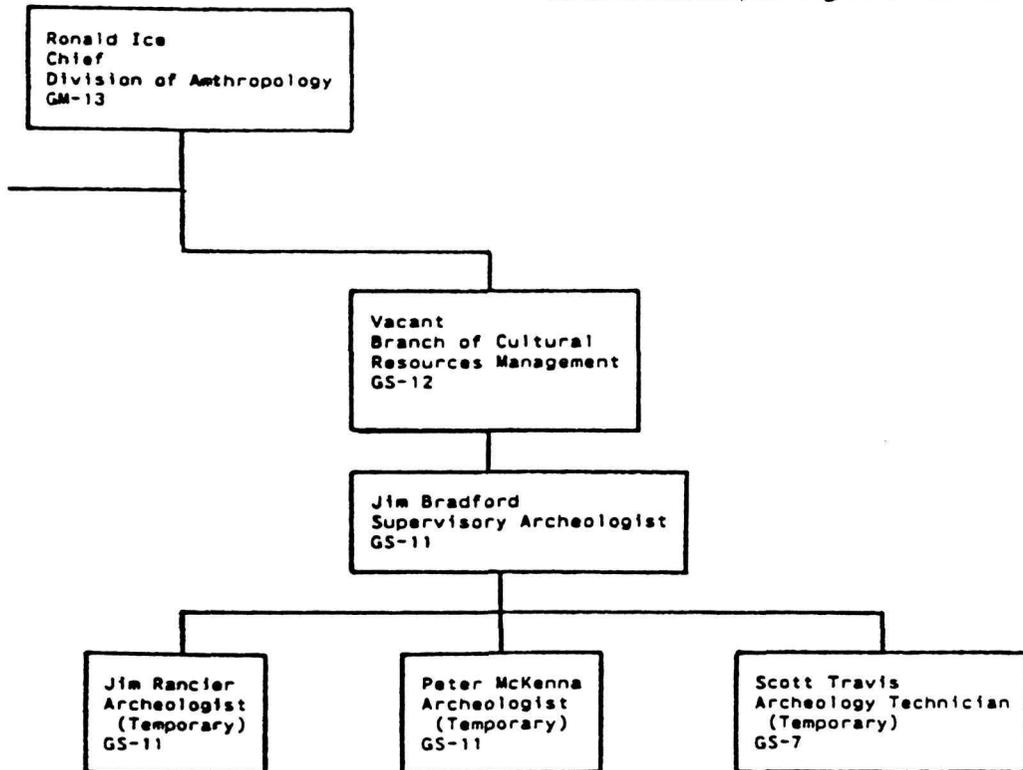


Figure 2.2 Organization of the Branch of Cultural Resources Management.

parks (Amistad Recreation Area, Bandelier National Monument, and Big Bend National Park) currently have permanent Archeologists on staff while Chaco Culture National Historical Park and Fort Smith National Historic Site have staff Archeologists on a temporary basis. Most of the day-to-day cultural resource management is conducted by these Archeologists within their respective parks. The branch has, over the past year, depended on Archeologist Roger Coleman of Fort Smith National Historic Site to conduct cost effective investigations for the branch at Buffalo National River, Pea Ridge National Military Park, and Hot Springs National Park. The help Mr. Coleman provides the branch at these Arkansas parks is greatly appreciated.

The Branch of Cultural Resources Management is, by necessity, a reactive unit that responds to archeological clearance needs of the various parks; clearances can be for a 9 cubic-foot pit toilet or a 2,000 acre land transfer. In many instances, the branch responds to tight construction schedules or unanticipated revisions in project design and scheduling. Quick response is essential to avoid costly delays in project planning and implementation.

Branch staff must be knowledgeable of at least four major prehistoric culture areas (Southwest, Plains, Northeast Mexico/Texas, and Eastern Woodlands) and numerous subculture regions as represented in 37 national park units located over a large part of the United States. General and specific knowledge of these, along with contemporary and historic Native American cultures and a grasp of historic archeology, are prerequisites for branch personnel.

Compliance Work

Each year, branch personnel conduct numerous archeological clearances for park areas, while other such projects are contracted out to the private sector. Whether work is done in-house depends on several factors including expertise, work loads, personnel availability, logis-

tics, schedules and costs. Contracting out projects depends on availability of funds and selection of qualified private consulting companies to perform the work. Although work is contracted out, this does not absolve the staff from administrative and management commitments for that job. For example, branch staff must plan the investigations required, provide research guidelines for the projects, development cost estimates, write the scopes of work, monitor the contract performance, review and approve the final products, as well as consult with State Archeologists and State Historic Preservation Officers to keep compliance on track during the entire process. In addition, branch personnel are responsible for ensuring curatorial standards are met for all materials recovered as a result of branch activities.

In FY 87, branch personnel conducted 31 projects in-house, an 88 percent increase over such projects last fiscal year. Contracted projects increased by 78 percent over FY 86; up from 14 to 25 projects. Contract oversight varied from small contracts on faunal bone analysis to large-scale excavation of an endangered archeological site. As a result of this work, 34 archeological clearances were issued by the Regional Archeologist, who, in turn, issued numerous additional clearances. Granted clearances included work for major park developments, hiking trails, land exchanges, historic preservation work, ruins stabilization work and public health and safety projects. However, not all work was conducted for clearance purposes; some included baseline documentation of cultural resources, review of interpretive materials, resource management training for park personnel and specialized analyses of recovered archeological materials from various park areas.

Additional work completed by branch personnel was the writing and/or review of 31 reports related to archeological investigations and review of 66 plans or documents related to development or interpretive activities within park areas. Review of development plans in itself increased by 144 percent over FY 86. The branch was instrumental in the review and com-

Twenty-six of the 37 parks in the Region were assisted by branch Archeologists during the course of the fiscal year. Of the 26 parks, 17 involved visits to the area while the other nine were aided by communications involving compliance procedures or overview and/or cultural resource information for the park. In addition, branch personnel assisted the Submerged Cultural Resources Unit in underwater archeological investigations in two parks; Glen Canyon National Recreation Area in the Rocky Mountain Region, and Biscayne National Park in the Southeast Region. Table 1 summarizes, by park, the bulk of work conducted by the branch during FY 87.

Reports

As previously mentioned, archeological investigations generated by development projects or requested of the branch by parks resulted in a number of completed reports or draft reports submitted for review and acceptance. In addition, public presentations of branch work likewise increased during the year with branch staff participating in a variety of lectures, workshops, and seminars. This work served to both communicate the branch's archeological

PARK	CONTRACT OVERVIEW	IN HOUSE FIELDWORK	REPORTS	PLAN REVIEWS	CLEARANCES
Alibates		1	1		1
Amistad		3		4	
Aztec Ruins	1	4	1	3	
Bandelier	2	2	2	1	
Big Bend	2		2	1	
Buffalo	6	4	6	8	8
Carlsbad Caverns Canyon				3	1
de Chelly	3	6	4	2	3
Capulin		1	1	2	1
Chaco Culture	1	1	1	2	1
Chickasaw		1		2	1
El Morro			2		1
Fort Davis				2	
Fort Smith				3	
Gila Cliff				1	1
Guadalupe Mountains			2	7	3
Hot Springs				4	4
Hubbell Trading Post	5	1	3	1	1
Jean Lafitte	4		5	5	2
Lake Meredith		1		9	2
Navajo	1				
Pea Ridge		2	1		2
Pecos		2		2	1
San Antonio Missions				1	
Salinas				3	
Wupatki					1
(Other Regions)					
Glen Canyon NRA		1	1		
Biscayne NP		1			
Totals	25	31	32	66	34

Table 2.1 Types of work performed for various parks by PCRM in FY87.

dertaking seemingly unrelated projects in the parks. A listing of the major reports completed for or by the branch, as well as a listing of papers presented and seminars attended by branch personnel, can be found in the bibliography section of this annual report. Public presentations of branch activity likewise increased during the year with branch staff participating in a variety of lectures, workshops, and seminars.

Curation

As a result of cultural resource management activities, both before and since the creation of the branch, a considerable amount of artifactual material has been accumulated from a variety of parks. The Division of Anthropology, and in particular the Branch of Cultural Resources Management, has recovered, and is responsible for, the analysis and interpretation of over 325,000 artifacts from 17 different parks in 113 accession numbers. To initiate work on these materials, the branch has been working closely with members of the new Branch of Curation (Division of Interpretation), Barbara Stanislowski and Deborah King. Members of the branch reorganized existing lab and shelving space and reshelved materials by accession number. A new compact shelving unit was installed that permits easier access to, and better security for artifactual materials, and more flexibility in the lab. Barbara and Deborah have been working with the collections, inventorying and cataloging material to the national catalog standards. Renewed efforts have been made to ensure parks have proper documentation of their artifacts temporarily stored at the Regional Office.

Summary of Projects of Particular Interest

As in previous years, a few projects typically highlight the work being conducted by the branch. Following are examples from a few of the parks.

Amistad Recreation Area. During 1987 Jim Rancier participated in the establishment and operation of the successful new archeological preservation and protection program at Amistad Recreation Area. The goal of this project is to establish and maintain a long range management program that will investigate, interpret and preserve the archeological resources within the park and on adjoining land areas. This ongoing program is a joint National Park Service/Texas Historical Commission effort and personnel from Amistad Recreation Area, the Texas Historical Commission, and local landowners have benefitted from an estimated 1750 hours of volunteer time donated by concerned Texans. Work completed to date includes cleanup, reclamation, recordation and assessment of many known and newly discovered sites. Community outreach efforts such as speaking engagements, newspaper releases and a radio news program interview have aided the project. Jim assisted with the orientation of recently appointed park Archeologist Joe Labadie, who has been an essential element in this program at Amistad from its initiation.

Aztec Ruins National Monument. Several interrelated archeological projects were undertaken by the branch at Aztec Ruins National Monument. These projects were stimulated by issues raised during the development of a new General Management Plan. The key issues were the possibility of shifting the interpretation of the Chacoan outlier system from Chaco Culture National Historic Park to Aztec Ruins, and renewed concern for the preservation of the his-

toric and prehistoric scene of the monument which is being threatened by urban development.

Surveys of cultural resources were conducted on lands adjacent to Aztec Ruins. As a result of these literature and terrestrial surveys, a large prehistoric community represented by dwellings, public structures, roads, and various esoteric features were identified on the terrace north of Aztec Ruins and along the Animas River beside Aztec Ruins. This work involved the cooperation of a number of groups including volunteers from the San Juan Archaeological Society, National Park Service Archeologists from other parks and branches, and San Juan Community College which surveyed the river bottom in conjunction with road developments. The survey findings indicate an initial community development during the first phase of building at Aztec Ruins which continued until its abandonment in the A.D. 1200s. Organization of the community can be shown to be structured and focused on Aztec Ruins, similar to settlement relationships described for other Chacoan outliers, so that the new interpretive role envisioned for Aztec Ruins can be fulfilled.

Other projects involved the testing of controversial mounds north of East Ruin to determine their character and begin to interpret their relationship to the prehistoric landscape at Aztec Ruins. A wood project was initiated to document, preserve, and date wood in Aztec Ruins. Documentation and sampling was begun in the East Ruin to aid in interpreting this building's place in the overall development of the Aztec Ruins complex. Continued investigation into the relationship and character at the Aztec Ruins complex is planned and formal report preparation has begun. The branch has been involved in communicating its work at Aztec Ruins to a variety of organizations and groups including presentations and discussions with local landowners, the San Juan Archaeological Society, and the Four Corners Archaeological Forum.

Buffalo National River. The branch continued to serve Buffalo's active development and sell-back schedules by providing archeological

clearance and site evaluations through contracts with private firms. Contract work was completed and final reports accepted for three archeological testing projects including the Rush Development Area, Tyler Bend Development Area, and for a boat ramp and campground facility near Carver Bridge. A second survey project was initiated in the Boxley Valley and the contractor is currently preparing the final report on this project. Additional testing was required at one site at the Tyler Bend Development Area and the final report is nearing completion. Additional work for the park in FY 88 is currently in the planning stage. A report on the extensive testing at the Erbie Campground is in the final stages of preparation and should be completed in FY 88. The results of this investigation have brought new and exciting information to light in the prehistory of the Ozark region. The report on this work will add significant new data to Arkansas archeology.

Canyon de Chelly National Monument.

During the summer and late fall of 1987 Scott Travis participated in an ongoing stabilization assessment program at Canyon de Chelly National Monument. Designed to provide detailed architectural and archeological information prior to stabilization efforts, this program will eventually include all prehistoric archeological sites within the monument that contain standing architecture. Working with staff members from both the monument and the Division of Conservation, Southwest Regional Office, Scott completed assessments of Tse Taa'a, the Window Site, Planetarium, Wild Cherry Ruin, Painted Room Ruin, Geometric Site, Yucca Cave, White Sands Ruin, Dead Horse Site, Lucille Benally Site, and Black Shirt Cave. Each assessment involved detailed mapping and site descriptions, architectural evaluations, and ranking in terms of stabilization priorities. With this information the monument staff will be able to coordinate their resource management programs and more effectively monitor stabilization needs. Beyond the managerial concerns, however, these assessments contribute to our knowledge and interpretive understanding of Anasazi architecture.

Summary

The Branch of Cultural Resources Management continued its role throughout FY 87 in assisting parks of the Region in meeting compliance procedures for the protection of archeological and ethnographic resources under their care. Additionally, interpretative and cultural resource management training was provided to some parks. The branch is not a single entity, nor does it

operate independently; much of the work conducted or overseen by the branch

is in conjunction with other branches and divisions of the Southwest Cultural Resources Center. Branch personnel look forward to continuing this association with other professionals within the Southwest Regional Office and parks.

BRANCH OF CULTURAL RESEARCH

Under the direction of Larry Nordby, the branch is responsible for planning, designing, and executing long-term archeological research projects. Generally, these projects are funded from the Cultural Resources Preservation Fund or analogous sources. Projects currently underway center on archeological inventory that meets the Service's mandate to identify and evaluate all of its resources. This effort is geared toward careful project design, cost-effectiveness, and high caliber data collection that meets specific

management needs and research objectives. Staff members are interested in enhancing the quality of visitor experience in addition to collecting site management data. Generating technical publications for the professional archeological audience is an essential component of this research.

Although some staff members are assigned as directors of branch archeological projects, other employees provide topical administrative or technical support that cross-cuts project lines. These include remote sensing, computer applications, archeological documentation management, and publications production (Figure 2.3). A synopsis of each project or technical area follows, and citations for reports are included in the appendix. Copies of these documents are most often available by contacting PBC.

The Operations Evaluation conducted by the Washington Office suggested that a long-term archeological research plan be prepared. Information collected by the Southwest Region for the Resource Summary and Action Program (RSAP) and drawn from the cultural resources portions of the Resource Management Plans, which were revised during FY 87, indicates both the extent and need for long term archeological research. Superintendents have requested in excess of one million dollars in projects, excluding the inventory surveys required by policy and comprising the primary thrust of RSAP. To adequately address both areas of concern will take at least three decades, even using a sampling strategy based on various park sizes.

Of the many parks requiring surveys and the numerous projects that have been asked for, research is ongoing at Chaco Culture, Wupatki, Bandelier, Padre Island, and Pecos.

Chacoan Research

Research on the resources of Chaco Culture, which have been nominated to the World

Heritage List, is quite varied. It ranges from archeological survey of newly added lands, through site excavation, analysis, and report publication, to a special nondestructive study of architectural wood. All of this research is making major contributions to the interpretive program at Chaco.

Bob Powers continued as project director of the Chaco Culture additional lands survey. Fieldwork for this project was completed in 1984, and since then various contractors have been preparing studies on the archeological remains. Five final reports, each to be a chapter in the overall report, have been completed. These reports present findings on lithic technology, the Navajo, and agricultural practices. Two reports remain pending, but will be completed by April 1, 1988. When all contracts are complete, Powers will prepare the introduction, sections on methods and goals, and a synthesis with conclusions. The completed manuscript will be published when funds are available.

The report on excavations conducted at Pueblo Alto between 1975 and 1979 was completed by Tom Windes during FY 87, and is now being compiled for publication. Pueblo Alto is not only the sole Chacoan "greathouse" examined by the Chaco Project, it is the only one that has been looked at through excavation for decades. The work at Pueblo Alto radically altered earlier concepts normally applied to the Bonito Phase (A.D. 920-1140). Among the novel interpretations are seasonal usage of the site and possibly the general canyon as well, perhaps ritually. In addition, organizational patterns link Pueblo Alto with all other Chacoan greathouses from the beginning of the Bonito Phase up until about AD 1050, suggesting that all shared a common socio-economic base as well as intersite political control.

A study of architectural wood at Pueblo Bonito involved Tom Windes, Peter McKenna, and Suzanne Hunt, assisting Dabney Ford of Chaco Culture during the summer months. This project seeks to maximize the data that can be garnered from the wood before it deteriorates.

The work at Pueblo Bonito has yielded several new interpretations. First is the cumulative impact of prior stabilization work that inevitably alters the archeological record. Secondly, there appears to be a change in the chosen species of wood as time goes on. This change indicates that the residents of Chaco were compelled by wood depletion to visit more distant locales in their quest for vigas and other kinds of structural wood. Finally, the study seems to point to a temporal link between several small pueblos built about A.D. 860 and the greathouse construction of about A.D. 900. This study thus documents a period previously unknown. Tom Windes and Dabney Ford are preparing a report on project results.

Chacoan Publications

Although specified publication funding for Chacoan reports was not obtained during FY 87, branch staff members nevertheless continued to make substantial progress on Chaco publications. As noted previously, work on the Pueblo Alto report continued; and peer review, rewriting to incorporate suggested changes, editing, and graphics for all but Volume II were completed. By the end of the fiscal year, the set up for camera-ready copy of Volume I was in progress. The completed report will be four volumes in size: Volume I, dealing with a summary of the entire project; Volume II (in two parts), discussing architecture and stratigraphy of the site; Volume III (also in two parts), presenting data from analysis of artifacts and ecofacts; and Volume IV, being a microfiche package that contains additional tabular and analytical data. This work involves contributions by Tom Windes, F. Joan Mathien, Jerry Livingston, Sherry Ivey, and Ernesto Martinez.

Working under contract, Marcia L. Truell completed rewriting the report on site 29SJ627, and all the chapters are now ready for peer review. Ernesto Martinez began work on the figures which should accompany the peer reviewers' work copies. A second small contract also allowed Ms. Truell to update the report on

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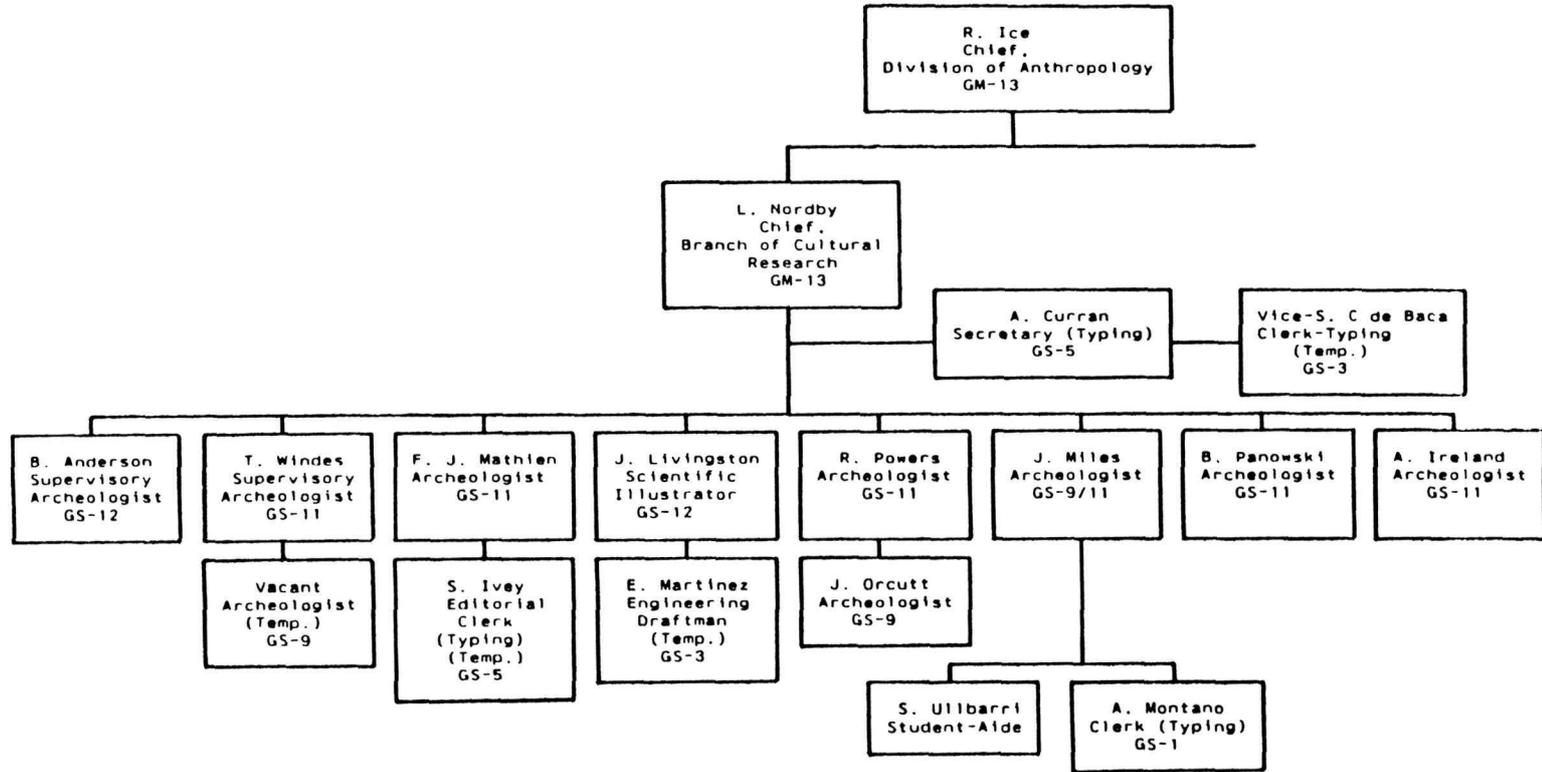


Figure 2.7 Organization of the Branch of Cultural Research

Division of Anthropology

site 29SJ 633, including the remote sensing portions. These two volumes constitute the second and third site reports in the Reports of the Chaco Center series.

The challenges pertaining to producing camera-ready copy, page layout, and complex title hierarchies should be reduced by a desk top publishing unit acquired this year. Materials consist of a Xerox computer, the Ventura program, and a laser printer. Advantages to the system are that (1) labor costs in page design can be reduced to about 50 percent, freeing the staff to do other tasks associated with publishing and (2) the finished volume has greatly improved appearance. Jerry Livingston and Ernesto Martinez operate this equipment.

The Maxwell Museum of Anthropology of the University of New Mexico agreed to print and distribute the remaining Chaco publications, but it is necessary that a waiver to do so be obtained from the Joint Committee on Printing and Binding (a Congressional Committee). A draft memorandum requesting this waiver was sent to the Government Printing Office on April 9, 1987; with probable resolution during the next fiscal year. The objective is to utilize the desktop publishing system or other means to produce camera-ready copy, and to take that copy to the Maxwell Museum. If approved, this method will save the Government about \$162,000 over a 10-year period.

Finally, the University of New Mexico Press agreed to reprint Archeological Surveys of Chaco Canyon by Hayes, Brugge, and Judge, if the Service could supply them with a camera ready rendition that corrected a few layout and typographical problems in the Government Printing Office version. The master copy was submitted to them in July for distribution in FY 88.

Research at Wupatki

The Wupatki Archeological Inventory Project consists of a complete cultural inventory of Wupatki National Monument in Northeastern Arizona. Wupatki, an area of 35,254 acres, is characterized by a high site density (the mean is 47.6 sites per section). The fieldwork for the survey was completed in August, 1987: 56 1/4 sections had been surveyed (100% of the National Monument's acreage) and 2,668 sites had been documented. In 1987, one six-person crew, working under the direction of Bruce A. Anderson, recorded 228 new sites over the 5 additional square miles. As in previous years, the fieldwork for FY 87 was preceded by a preliminary report on the previous year's fieldwork and an updated research design.

Preparation of the final report began during FY 87, generally by archeological contractors using survey derived data. Chapter topics include (1) Navajo ethnoarcheology, by Alexa Roberts; (2) analysis of settlement patterns, by Chris Downum; and (3) agricultural systems development, by Scott Travis. Draft reports were received for each chapter, and are now under review. Bruce Anderson began the environmental chapter as well, and the chapter on lithic technology was initiated under contract with Nickens and Associates.

The data from the project were entered into RSAP by VIP Robert Emerson and into Oracle by Clerk-Typist April Cde Baca and Debbie King of the Division of Interpretation. These data indicate that about 80 percent of the cultural affiliation of Wupatki's resident population is with the Kayenta Anasazi, to the northeast, rather than the Sinagua of the Flagstaff area as earlier believed.

The distribution of rock art sites illustrates the complexity of project data now under

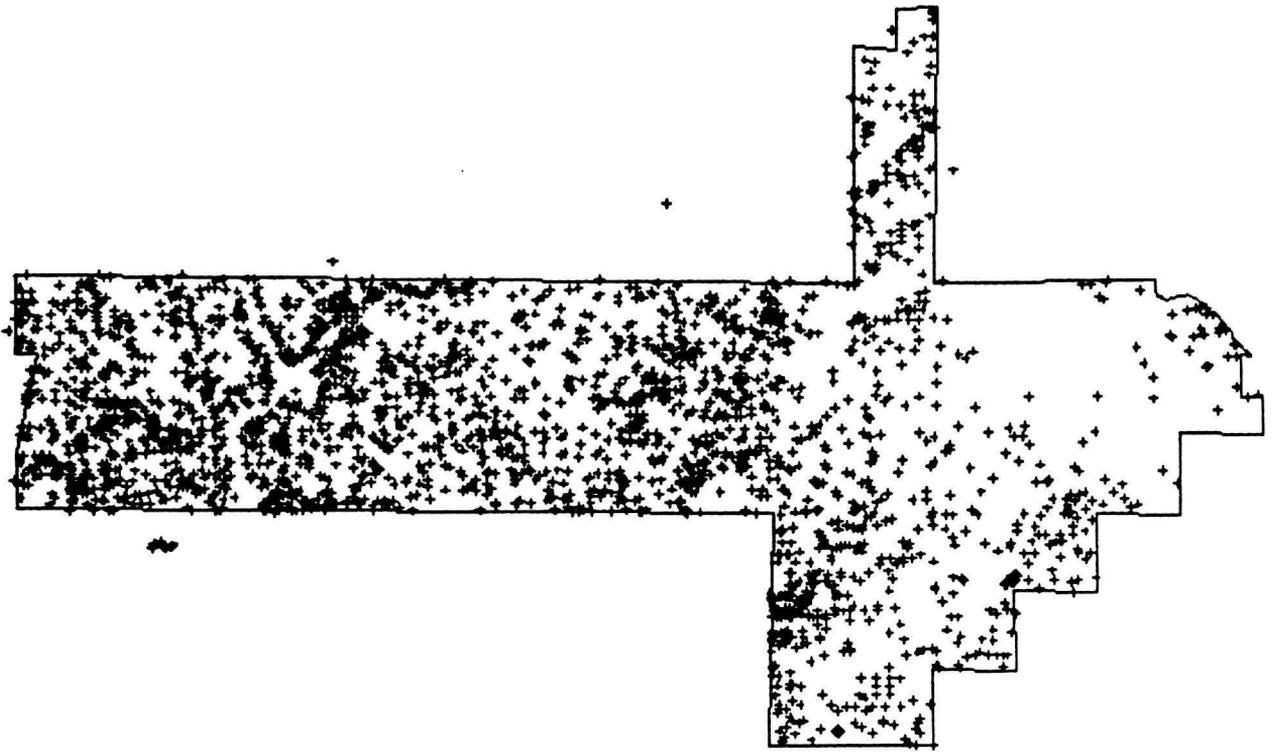


Figure 2.4 Computer generated map of Wupatki archeological sites.

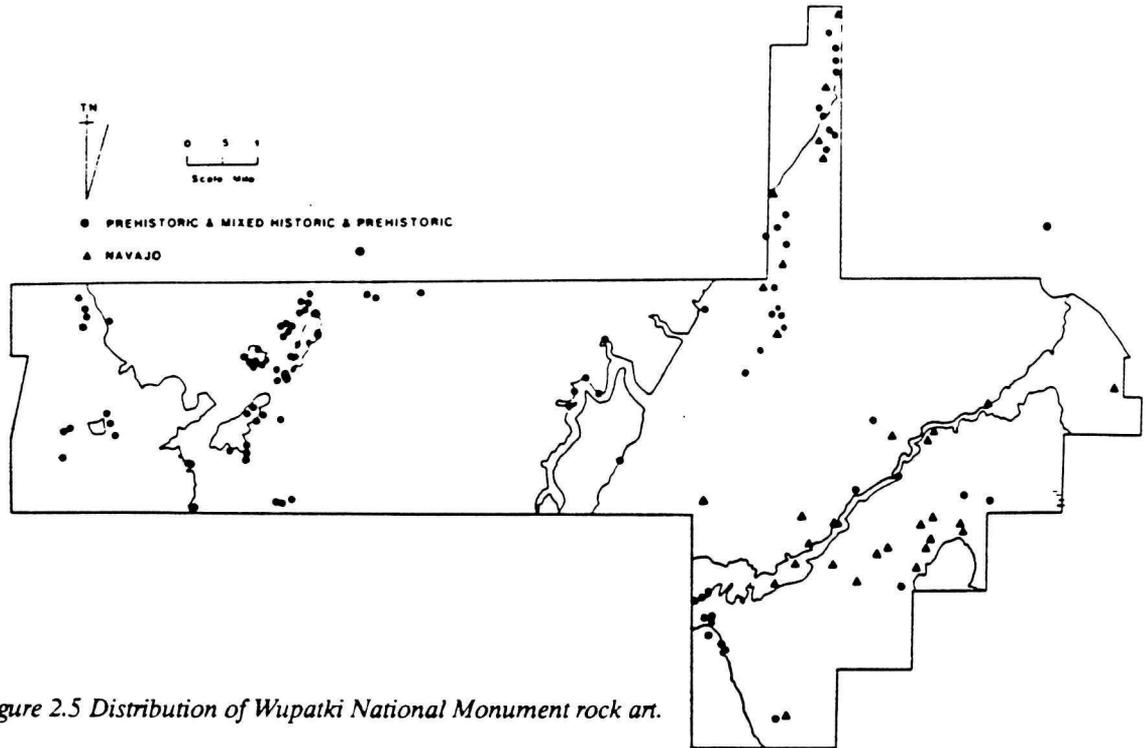


Figure 2.5 Distribution of Wupatki National Monument rock art.

analysis. Figure 2 presents the 129 rock art sites at Wupatki. These sites include 454 individual panels, and over 1837 elements or motifs.

An added bonus from FY 87 was the presentation of an Exploration magazine focusing on the archeology of Wupatki and Walnut Canyon. Three articles dealt with the archeology of Wupatki.

Research at Bandelier

This 7-year inventory survey project, under the overall direction of Bob Powers, was initiated during FY 85. During that year a pilot survey was conducted, and the results were used to design the multi-year effort. No funds were allocated in FY 86, in order to allow other survey projects to

be completed. Nonetheless, to maintain project momentum during 1986, an architectural study of several cavate (rooms excavated into bedrock) sites was conducted to provide baseline data on their condition. A preliminary report was prepared by H. Wolcott Toll, field director of the cavate work. The final report, involving detailed, computer analysis of attributes of 360 cavate features, is underway and will be completed by June 1, 1988.

Other major efforts nearly completed are several background and planning documents, including the survey research design. This document was distributed for public review in April 1987, and will be finalized in the near future. The "design" establishes the framework and goals of the inventory, calling for 4 seasons of inventory survey, followed by 2 years of analysis and write-up, with a final year for publication of the project findings. Also emphasized is a survey sampling strategy for investigating both high site density and management priority areas. All aspects of the plan were developed in close cooperation with the park staff.

The spring of this year was spent preparing for the first full season of survey, which began May 18 and continued through August 31. The

field crew of 10-14 archeologists (including staff archeologists Orcutt, McKenna, and Miles), 2-5 volunteers, and the camp cook operated for most of the season out of several backcountry tent camps. A total of 3,356 acres was surveyed, and 467 sites identified and recorded in three major park areas. An average of 64.5 acres and nine sites was recorded per day.

The great majority of these sites are Anasazi, dating between A.D. 1200 and 1500-1575, although at least two sites may have been occupied around the time of the Pueblo Revolt (1680-1692). Most sites are of two types, pueblos (6-70 rooms), and small structures (1-5 rooms), the latter outnumbering the former about 4 to 1. Many of the small structures were probably occupied only seasonally as fieldhouses. Both pueblos and small structures occur throughout the temporal continuum, but pueblos become fewer but larger as the population aggregated over time into a few choice locations. Interestingly, farming activities seem to remain dispersed, suggesting that communal agricultural labor was not a significant factor behind residential population concentration.

A wide variety of other sites was found as well, including sherd and lithic scatters, water control features, storage units, rockshelters, shrines, and cavates. Because most of the summer's survey was confined to mesa tops, only a modest number of cavates was found. Even so, cavates appear to be widely distributed, with the largest ones occurring around the larger communal pueblos, such as Tyuonyi and Tsankawi. Since they seem to have been occupied contemporaneously, one is intrigued by the apparent coexistence of these two house types--shades of the Chaco village-greathouse dichotomy. Several eagle traps (rectangular pits quarried into tuff bedrock) were perhaps the most unusual sites recorded, while discovery of a cache of three whole pottery vessels provided the best gut-level excitement of the season.

On a slightly more intellectual plane, the discovery of higher proportions of biscuit ware ceramics on sites north of Frijoles Canyon, in contrast to higher proportions of glazeware

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ceramics at contemporary sites south of Frijoles may suggest a cultural or trade boundary. The former interpretation is in line with Tewa oral traditions which identify the canyon as the dividing line between Tewa (north) and Keresan (south) territory.

Upon return from the field session, project Archeologist Jan Orcutt began the process of entering all of this summer's data onto the computer, a chore that will be finished in early winter. Jan has been ably assisted by Liz Trautman, a VIP who has devoted hundreds of hours of her time to the data entry project. Once the data are on-line, they will provide a baseline information source, both for management and research. Bruce Panowski has provided fundamental computer programming assistance throughout. Processing of the season's photos is being carried out by Judy Miles and Anthony Montano. Art Ireland is verifying site location.

With the assistance of Judy Miles and Peter McKenna, Jan Orcutt is evaluating the date ranges established for ceramic types found at Bandelier. The goal is to determine if more precise calendar dates can be established for major types. The preliminary results of this investigation, and several studies utilizing Bandelier survey data, are to be reported at the annual Society for American Archeology Meetings in Phoenix in late April of 1988.

F. Joan Mathien is collaborating on a bibliography of Pajarito Plateau archeology with Beverly Larson and Charlie Steen. As part of the research, Bandelier staff sent her to visit several museums in order to track down obscure notes, photographs, etc., produced by noted Southwesternist Edgar Hewett.

Finally, plans for a test excavation program at Bandelier, to be conducted in conjunction with the survey, are nearer to fruition. Dr. Timothy Kohler, Associate Professor of Anthropology at Washington State University, will begin a modest excavation program in the summer of 1988. A grant of \$5,000 to partially support this work has been awarded by the Southwestern Parks and Monuments Associa-

tion. Additional funding is now being requested. If the 1988 program yields promising results, Dr. Kohler will be applying for more extensive support for additional seasons in 1989 and 1990.

Research at Pecos

Work in this area consisted for the most part of report preparation. Work continues on the report on the Pecos pithouses, which date to A.D. 800-850. Written by Larry Nordby, Chapters I and II are completed and are ready for transfer from the Data General system to the Xerox/Ventura desktop publishing system. The chapters on the architectural descriptions for two of the three pithouses are also essentially complete, and the concluding remarks on comparative pithouse architecture are in first-draft form. Artifacts have been analyzed in two of the three houses, but this section of the report still needs to be written for all three structures.

Individual site maps for all surveyed Pecos sites were redrawn onto mylar during FY 87 by Ernesto Martinez. These will become part of the final report.

Assisted by Archeologists from the Branch of Cultural Resource Management, Larry Nordby also conducted salvage work along the right-of-way of the new visitors' center wing that was built. The work consisted of controlled surface collection and test excavations, all of which point to the area's use as a tool manufacture and food processing area.

Research at Padre Island

No new fieldwork was conducted at Padre Island during FY 87, but report preparation on the results on anomaly ground truthing and other aspects of the project design and execution has continued. The report on the Padre Island survey will consist of two volumes: one on the underwater resources, and a second one that

provides a synopsis of the terrestrial aboriginal resource knowledge coupled with an evaluation of the few sites that have been identified on the Island.

A preliminary report on the work done during FY 86 was written and presented in January at the Conference on Underwater Archeology meetings in Savannah, Georgia.

This report describes the Spaniards' salvage techniques and vessels that were used, resulting from an assessment of the discovery of the new anchor dating to the Spanish plate fleet of A.D. 1554.

Collections Management

In January 1987, the Regional Director reorganized the collections management function. A Branch of Curation, headed by Regional Curator David Brugge and organizationally located in the Division of Interpretation was established February 1, 1987. Locationally the staff is split between Albuquerque, the Maxwell Museum offices, and the Regional Office.

The Albuquerque staff has assumed curation responsibilities for all components of the Chaco collection, working hand-in-hand with the staff of the Maxwell Museum. They have accomplished four major inventory projects this fiscal year. These include the contents of 13 specimen cabinets, all human burials, 12 percent of the holdings in one of the two dedicated storage areas, and all artifacts on display or in storage at Chaco Culture.

The specimen cabinets contain prehistoric material such as ornaments, faunal bone, ceramic and lithic type collections, etc. A basic data sheet for each burial was completed and entered into the University of New Mexico's computer file on physical anthropology. In addition, substandard storage containers were replaced in tandem with the inventories.

Barbara Stanislawski is directly in charge of the daily curation tasks for artifacts in Santa Fe, assisted by Deborah King. Both work in the Division of Anthropology laboratory in Room 106 where a compact storage unit has been installed. This equipment will facilitate organizational improvement for stored artifacts, and help to complete the inventories for new accessions such as the one from Aztec Ruins.

The Branch of Cultural Research collections staff now curates the archeological archives from work performed by the Divisions of Anthropology and History. Judy Miles directs the activities of Anthony Montano and Sophia Ulibarri (temporary staff), and volunteers Bill Crowder, June Crowder, Betsy Fuller, Don Nickell and Elisabeth Smith, to meet the challenge of one of the long-range goals of the branch.

This goal is to establish and maintain up-to-date file systems containing all pertinent archeological site information on Southwest Region areas. Ultimately, the result will be (1) archeological base maps displaying the accurate locations of all sites in parks of the Southwest Region, and (2) a file (paper, computerized, or microform) on each site in the Region. This will provide easily retrievable information and will meet the goals of RSAP, the Resource Management Plans, and the Cultural Sites Inventory in the future.

Judy has also worked closely with project directors in developing and reporting on collection management processes for material generated by field research at Bandelier, Fort Davis, Salinas, and Wupatki.

Table 2.2 Overall collection management activities are as shown below:

<u>Description</u>	<u>Number</u>
New accessions	48
Accessions supplemented	1

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Deaccessions	1
Photographs processed	3296
Color slides processed	1612
Maps indexed	0
Outgoing loans	25
Library references acquired	121
Projects for which staff utilized collections	9
Non-NPS staff who utilized collections	40

Comparison of these figures with those from FY 86 shows that over three times as many new accessions began, three times as many photographs were collated, and over eight times as many slides were indexed.

Remote Sensing

The remote sensing section, coordinated by Arthur K. Ireland, continued in FY 87 with its twin missions of providing remote sensing expertise/products to the parks of several regions and to archeological research projects of the Branch of Cultural Research. Thus, cultural resources management services are provided to managers as well as technical/professional staff. Primary focal points are the examination of aerial photography and satellite imagery, preparation of photogrammetric maps, and providing locational information for various projects. This unit also maintains a laboratory of equipment and an archive of aerial imagery and maps.

Both are used extensively by non-Service personnel as well as Service employees on an intensive basis. Art had over 260 professional contacts in FY 87, up 85 percent from FY 86 (see Figure 2.6 for a breakdown). In particular,

professionals from all over the world continue to request the remote sensing reports, acn be seen in Figure 2.7. More than 70 requests and responses were made.

In this highly technical field, major projects such as those listed below, are often related to equipment available. Major projects included:

Goodman Point Ruins Unit, Hovenweep National Monument (Rocky Mountain Region).

Although the photogrammetric mapping portion of this project has been completed, Art continued to do photointerpretation using photography acquired by the contractor for this purpose: Approximately 55 structural sites were seen and were described in a status report sent to the Regional Director and Regional Archeologist of Rocky Mountain Region.

Proposed Petroglyph National Monument. Art served on the planning team for study of alternatives for the proposed national monument on Albuquerque's West Mesa in two capacities, archeologist and remote sensing specialist. As the latter, he contracted for aerial photography of the area, resulting in more than 1230 photographs being taken. As the former, he consulted with archeological contractors, presented brief reports on the cultural resources of the area at public meetings, and prepared a summary of the cultural resources there for inclusion as an appendix in the study alternatives report submitted to Congress.

Aztec Ruins National Monument Mapping Project. At the request of the Division of Planning and Design, Art contracted for the acquisition of new aerial photography for the Aztec Ruins National Monument area. He also traveled to Aztec Ruins to set up the ground control network and, using the section's Lietz-Sokkisha EDM 3 (10) Electronic Distance Meter, surveyed in the locations of the ground control points, at a considerable costs savings over commercial work. Thus far, the results of this project

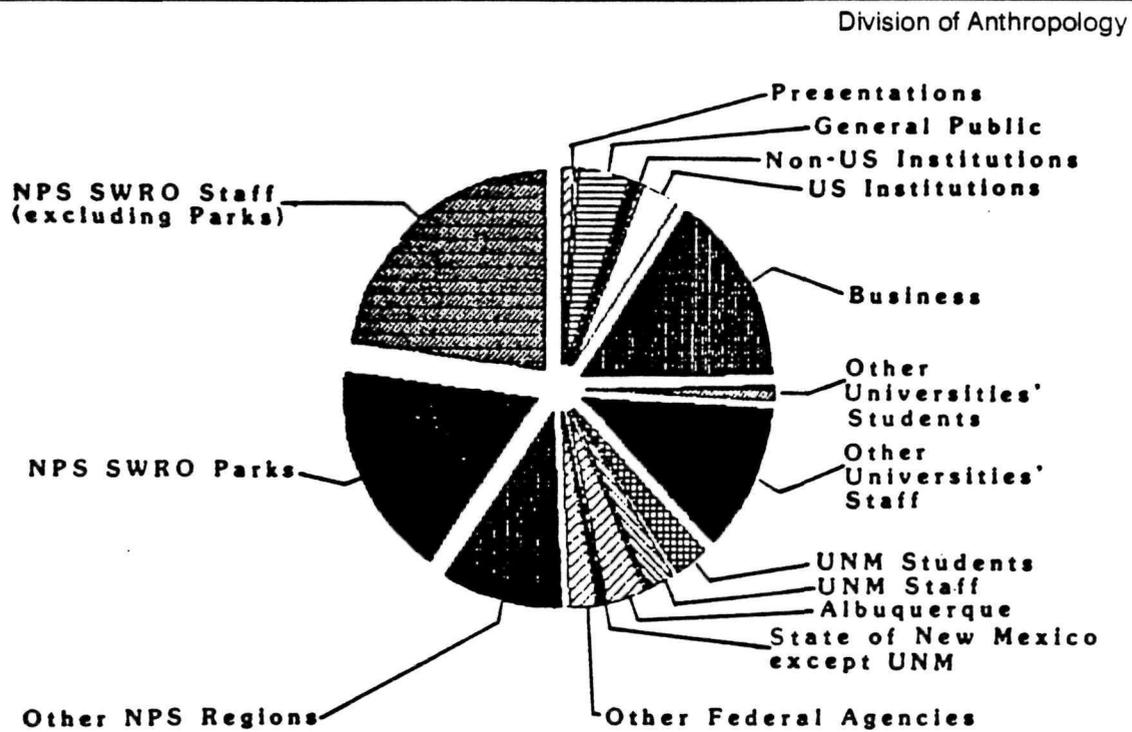


Figure 2.6 Relative proportions of Remote Sensing professional contacts during FY1987.

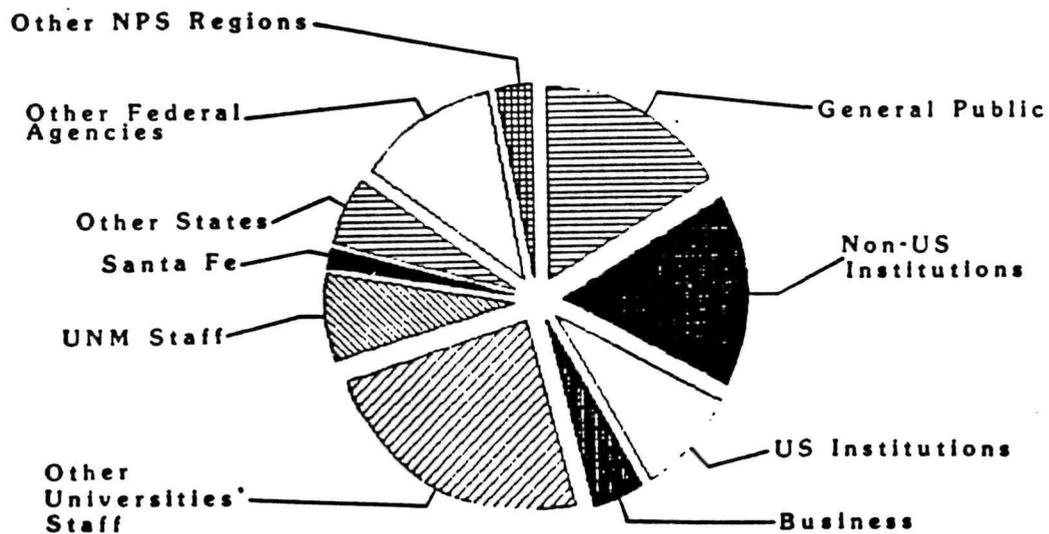


Figure 2.7 Origins of publications requests for Remote Sensing reports during FY1987.

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Art has also taken part in discussions on the proposed expansion of the monument boundaries at Aztec Ruins.

Hovenweep National Monument Mapping Project. At the request of the Chief Park Archeologist, Mesa Verde National Park, Art contracted for the acquisition of additional aerial photography and photogrammetric mapping at Hovenweep National Monument, specifically the Cajon Ruins Group, Square Tower Ruins Group, Holly Ruins Group, and Hackberry Ruins Group Units. Again, Art traveled to the park to set up the ground control network and to shoot in the panels' locations. Forty-two new aerial photographs were taken and, although the mapping process is not yet complete, a 2-sheet map set of the Cajon Ruins Group, a 4-sheet map set of the Holly Ruins Group, and a 6-sheet map set of the Hackberry Ruins Group have been produced.

Navajo National Monument Mapping Project. As part of the general management plan research package, Art contracted for the acquisition of aerial photography of the Betatakin, Inscription House, and Keet Seel areas of Navajo National Monument. Art again traveled to the park to set up and shoot in the locations of the ground control network points, the latter task not quite completed. More than 270 frames of new aerial photography were taken. No date has been set for the mapping to take place.

Gila Cliff Dwellings National Monument Mapping Project. Yet another project conducted as part of general management plan research was to obtain aerial photography of the Gila Cliff Dwellings National Monument area. Art contracted for these photographs and has received 168 frames of new photography. The park has requested that photogrammetric maps be made from this photography but the actual surveying in of control points must wait until the spring of 1988.

El Malpais Monument Mapping Project. Aerial photography acquisition of six areas within the proposed El Malpais National Monument was requested jointly by planners at the

Denver Service Center and the Southwest Region. Art helped set up the specifications for this project and is now the COTR for it. Nearly 290 color aerial photographs were received as a result of this project. No date has been set to map these areas yet.

Assistance to other units within the Southwest Cultural Resources Center sent Art to Cape Cod and Fire Island National Seashore with members of the Submerged Cultural Resources Unit and the Regional Archeologist from the North Atlantic Region. At Cape Cod, Art set up beach control points from which he was able to accurately establish the location of the wreck, FRANCES. He also helped Larry Murphy in an attempt to locate the wreck of the HMS SOME-RSET, using a terrestrial magnetometer. Art also helped Larry Murphy during the offshore magnetometer survey at Fire Island. In addition, he set up the beach control necessary to shoot in the locations of wrecks just offshore from Watch Hill and Sailors' Haven and prepared the beach control to shoot in the location of the wreck of the GLUCKAUF, the world's first tanker.

The comprehensive inventory and evaluation of the photo archive and library begun in FY 85 continues. New materials continued to be accessioned. Examples of materials supplied to parks or other regions include:

Chamizal National Memorial. Assisted the staff there in trying to locate imagery of their area.

Wupatki National Monument. Arranged to get color photography of portions of that park reprinted.

Bandelier National Monument. Loaned their natural resources staff some aerial photographs for a vegetative study.

The section produced one report during FY 87. Art made three presentations on remote sensing, archeology, and NPS use of computers in archeology: one at the Chief Rangers' conference in Santa Fe, one at a public school in Al-

buquerque, and one at a conference at San Juan college in Farmington.

Art has continued to meet several times a year with researchers from Brigham Young University on the use of remote controlled airplanes to obtain aerial photography. The results from FY 87 are very encouraging, as photographs taken from the small aircraft and measurements provided by Art, using the EDM, were used to produce extremely detailed maps of two sites at Chaco Culture National Historical Park. These maps were plotted out on a MACO system identical to that owned by the Division of Conservation.

One final project begun in FY 86 and continuing is the examination of various locational devices available and their potential applicability to surveys like at Bandelier.

Computer Applications

Bruce Panowski has continued to create applications for the Branch of Cultural Research, other Center divisions, and upon request, divisions from outside the Center this past year. Work for the branch includes:

- Completion of applications for data entry of Bandelier survey information (including separate programs for lithic and ceramic data).
- Completion of a report-format program for Bandelier site forms.
- Completion of Wupatki UTM entry program, and transfer of data to MOSS, resulting in the Wupatki Archeological Site map.

- Creation of programs to transfer data from Joan Mathien's bibliographic files (Oracle application created by Bruce earlier) onto floppy diskettes for utilization by Los Alamos National Labs.

- Providing training and assistance to volunteers working for Judy Miles, resulting in applications to inventory photographic records.

- Facilitated the acquisition of SAS for use on the MV10000.

- Acted as branch liaison with an outside contractor to have UNM IBM SAS data transferred to the NPS system.

- Facilitated acquisition of color Tektronix terminals, color ink-jet printers, and the most recent versions of Color MOSS.

Other applications, with benefitting organizations, are as follows:

- **Division of History** - Currently creating Oracle/Fortran interface to transfer LCS data from Oracle to DBaseIII in Washington.

- **Division of Conservation** - Created a Building/Architectural Inventory application.

- **Division of Interpretation** - Corrected problems in a Division of Interpretation and Division of Information Management Library Application to make it operable.

- **Big Thicket and Division of Information Management** Received data on Deer Hunting Permits from Big Thicket floppy diskettes, converted data into an Oracle output format,

printed data onto preprinted forms, and returned to Big Thicket.

- **Division of Natural Resources** - Converted mountain lion range data to aMOSS format, and printed some lion range maps.

- **Submerged Cultural Resources Unit** - Created Oracle applications to a) track divers' qualifications, b) receive and analyze a submergedresources questionnaire, c) receive data pertinent to shipwreck locations, and d) digitized MOSS maps of Biscayne and Cape Cod.

- **Bandelier** - Trained students from the College of Santa Fe to digitize environmental "patch" maps being researched and created for Bandelier National Monument.

Miscellaneous Activities

Volunteers continue to contribute to many branch activities. Sixteen VIPs assisted in the surveys at Wupatki and Bandelier, with darkroom, archeological documentation and collection activities, and on miscellaneous field projects. Approximately 2000 hours of donated time was obtained. Tom Windes serves as the branch V.I.P. program coordinator. In addition, both Tom Windes and F. Joan Mathien donated the proceeds raised during weekend tours of Chaco Culture to publication of Chaco reports and conducting miscellaneous analyses.

Tom Windes and F. Joan Mathien also assisted other division staff in the survey of Aztec Ruins and adjacent properties under consideration additions. Judy Miles helped in the research work at Abo Mission conducted by Jake Ivey of

the Division of History. Larry Nordby worked on architectural documentation and stabilization assessments at Canyon de Chelly. Robert Powers continues to serve a special role as the National Park Service's Joint Management Plan Archeologist, attending several meetings throughout the year on various Chaco Culture archeological protection sites issues. Among the issues discussed were (1) recommendations for Morris No. 41 and (2) establishment of technical advisory groups for ruins stabilization and law enforcement.

Jerry Livingston, Ernesto Martinez, Art Ireland and Larry Nordby all continue to support the activities of the Submerged Cultural Resources Unit. Although Ernesto's work was limited to drawing such maps as the CHARLES H. SPENCER and assistance for the Isle Royale report, the others helped in the field (especially see Remote Sensing Section contribution).

Larry Nordby contributed to the Isle Royale report and prepared a manuscript on the archeology of fishing camps. He also participated in the underwater fieldwork on the wreck ISABELLA on the Columbia River, the wreck FRANCES at Cape Cod, and on two wrecks at Fire Island at Cape Cod, in collaboration with the unit.

Larry also continued in his role on the Archeological Documentation Subcommittee for the U.S.S. MONITOR, as requested by the National Oceanic and Atmospheric Administration. He participated in a public symposium on the MONITOR in Savannah, Georgia, delivering a published paper on intrasite distributional modeling of artifacts.

In support of the Service's effort to increase public interaction in innovative ways, and distribute the results of Service research, branch staff members have delivered numerous lectures, presentations, and given tours to professional and educational groups, as well as to elementary school children and the lay public.

Among others, talks on Chaco Culture were given at the Midland (Texas) Archeologi-

cal Society, the American Museum of Natural History, the University of New Mexico, University of Utah, the Pecos Conference, the School of American Research, and the Society for American Archeology. Talks and tours were given on Pecos to the School of American Research, Gran Quivira Conferences, the Archeological Institute of America, the New Mexico Archeological Society, and Earlham

College. Talks on Wupatki were delivered to the Southwest Rock Art Symposium and the Arizona Archeological Council.

Along with others in the Division of Anthropology, branch personnel organized the 60th Pecos Conference, which was highly successful.

SECTION THREE

DIVISION OF CONSERVATION

ADMINISTRATIVES **OVERVIEW**

The division is composed of four sections engaged in preservation of historic and prehistoric cultural resources. The four sections include the section for research and preservation planning, the design section, the section for project implementation and the administrative section.

CENTERWIDE **ACTIVITIES**

The Center was involved in many Servicewide thrusts last year that took the division's staff into a new realm of review and program formulation assistance. There was the Regional Summary and Action Program developed by a Centerwide committee submitted in the spring to Washington for its inclusion in the followup Servicewide report.

The staff in concert with the natural resources specialists reviewed and coordinated the updates of all Resource Management Plans for the Southwest field areas. New funding requests as a result of this effort were reviewed as well as the formulation of the projects to be undertaken in Fiscal Year 1988.

The division supported the 12 point plan on several occasions by utilizing volunteers, increasing management efficiency through the use of donated funds, such as the funds for the addition to the Pecos Visitor Center. This new building has just been nominated for the Presidential Design Award program by the Regional Director.

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Several training opportunities were facilitated by division staff. The use of videotape recordings in these workshops was well received and copies of an instructional aid titled "Videotaping Historic Structures" was distributed to all Regional Historical Architects and the Service's training centers.

Some of the training workshops included: Resource Management, Maintenance Management, two workshops with the USFS for Ruins Stabilization and Historical Architecture, Special Populations Training, Ruins Stabilization, Cultural Resources Management at San Antonio, Orientation to the NPS, the Annual Workshop for Historic Structures, International Visitors from the USIA, hands-on training courses at Canyon de Chelly, Fort Union and Carlsbad Caverns, the Regionwide Documentation Program meeting at Chaco Canyon, and finally the Centerwide meeting in October.

The division staff was also instrumental in the followup to the Operation Evaluation's recommendations concerning the Center. The Regional Historical Architect's role was clarified through a memorandum sent to all southwest parks, division chiefs as well as the other regions. Long-range research plans were developed, a workload analysis for the Research Section of the division was prepared and the administrative relocation of several field crew members was initiated last year.

STAFF

The following summarizes the current personnel status of the four sections and this year's major changes in staffing:

Administrative Support. The administrative support section headed by division Secretary Christina Romero assisted the Division Chief in the successful recruitment of new staff. For example the division has been strengthened this past year with four temporary Historical Ar-

chitects, two 30-day special need appointments, a 120-day detail assignment with another region, professional exchange with the Denver Service Center and a successful placement using the reassignment mobility program. Employee Edwina Abreu worked for the Administrative section until June 9, 1987, at which time she was hired by the Spanish Colonial Research Center; Sharon Sue Bengtson was reassigned on February 20, 1987, to the Office of the Chief, Southwest Cultural Resources Center and Anthony Montano a former participant of the Vocational Rehabilitation Program also left the division on June 2, 1987, and was picked up by the Branch of Cultural Research. With all of these reassignments the administrative duties were handled singlehanded by Christina until she was able to hire, on June 22, 1987, Diana Garcia as a Clerk-Typist for the division.

Design Personnel. The design team of the Division of Conservation is composed of David Snow, an Architect who transferred here from the Alaska Region in September; Beverley Spears, a Santa Fe Architect who joined the division in April; Jim Trott, an Archeologist who specializes in the area of prehistoric ruins stabilization, and Ethel Trimmer, an Architectural Technician. Mr. Snow has filled the position of head of the design section, and we welcome his expertise and leadership. Tom Vitanza, Historical Architect on loan to the Region from the Williamsport Preservation Training Center, was recalled to fill a need there and left the division in July. There were two 30-day special need assignments for Elliot Davidson who worked on the Old Santa Fe Trail Building and Gary Matlock who assisted with Wupatki Ruins assessments.

Preservation Crew Members. Preservation crew supervisors and leaders consisted of Supervisory Exhibit Specialist, Douglas Hicks; two Exhibit Specialists, Terry Morgart and Jake Barrow; a Maintenance Mechanic, Eugene Tsosie and another permanent Exhibit Specialist position has been vacant since 1986.

Division of Conservation

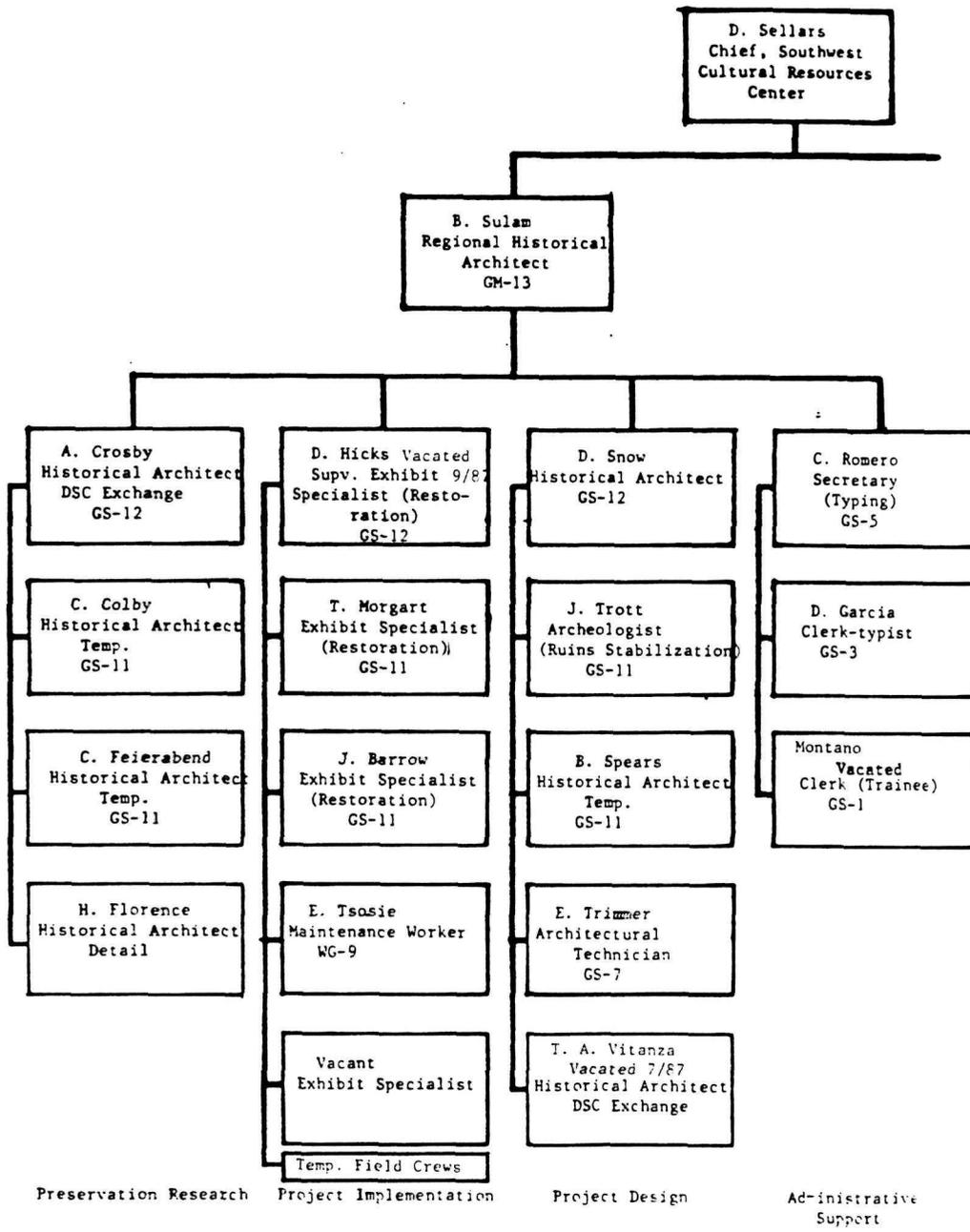


Figure 3.1 Organization of the Division of Conservation.

The permanent staff positions were supplemented by temporary craft positions from Hubbell Trading Post (Masonry Workers Ernest Nez and Taylor Tsosie) and Fort Smith (Masonry Workers Gary Smith, Lonnie Smith, Kenneth Smith, Joe Smith, and Carl Hickey and Carpenter Gary Montag). Park staff members and local project hires also supplement the preservation crews when necessary, or implement projects under division supervision. For instance there was a special 120-day detail for Bobby Flickinger of Pea Ridge, who assisted in the pre-project planning of the Lamar Bathhouse rehab at Hot Springs N.P. The crew utilized two trainees from the Williamsport Preservation Training Center to assist in projects at Big Bend, Buffalo, Hot Springs and Fort Davis, they were Barry Caldwell and Jim Gallagher.

With the transfer of Doug Hicks to Williamsport, at the end of the fiscal year, the division placed all ruins preservation implementation duties and the Acting Supervisory Exhibit Specialist role on Terry Morgart who will be carrying this responsibility until the vacancy is filled.

Research Assistance. Section personnel are Historical Architects Catherine Colby, Carey Feierabend, and on detail Hank Florence of the PNWRO, and supervisor Anthony Crosby is section head. Mary Volkert, a Computer Editorial Assistant, provided approximately 60 person days of support at the Denver Service Center (DSC). Catherine Colby filled a position the first of April and Hank, began working on section projects the first of June. Historical Architect Carey Feierabend began work on October 13. Rick Geiser worked on a special need basis during April and May. Tentatively, Hank will continue working on projects for several more months.

DIVISION ACTIVITIES

The following will illustrate the interdependent work of the division's sections for

Research and Preservation Planning, Design, and Implementation (preservation crew). This past year we have held two divisionwide quarterly meetings to share information and plan projects. The design section and administration hosted these meetings.

SECTION OF RESEARCH AND PRESERVATION PLANNING REPORT

Purpose and Section Responsibility

The Section of Research and Preservation Planning is responsible for (1) the identification and analysis of problems which affect the preservation of the Region's cultural resources, and (2) the development of proposals for the intervention which may be necessary to eliminate or otherwise mitigate those problems. To meet those responsibilities, section personnel are specifically responsible for the Regional Graphic Documentation Program, the monitoring program, preservation reports and studies such as Historic Structure Reports (HSRs), special fabric studies, preservation plans, and Structure Evaluation Reports, a preservation training program, and the development of the material analysis lab. The section is also responsible for the development of Historic Structure Preservation Guides (HSPGs).

Special Projects

San Antonio Missions Wall Art: the primary special project is the conservation of colonial period decorative surfaces at the Conventos of Missions Concepcion and San Jose at San Antonio Missions National Historical Park. The project includes a jointly written conserva-

tion report, continued comprehensive preservation monitoring, emergency conservation treatment, and the final conservation treatment which is tentatively scheduled for the summer of 1988. The actual conservation and a portion of the conservation report are funded by Los Compadres, the San Antonio friends group for a total of \$100,000.

The work this fiscal year has consisted of the completion of a portion of the report, additional emergency stabilization work, and the development of some specific cause-and-effect relationships which resulted in extensive masonry repointings of all exterior walls of the Concep-

tual conservation treatment work should be undertaken and by whom. An initial informal response has been received from the International Center for the Study of the Preservation and Restoration of Cultural Properties (ICCROM). One of the primary tasks of ICCROM is to assist member countries in the conservation of various types of cultural resources by organizing projects such as this which result in the actual completion of work and the training of local professionals at the same time.

Initial emergency stabilization work was completed in July of 1986, but because of extensive rains in the late spring and early summer of



Figure 3.2 San Antonio Missions National Historic Park. Stabilization of Concepcion Convento. Crew members from Fort Smith are seen repairing masonry on the west side of the Convento.

cion convento (Figure 2.2). The understanding of the actual causes which result in deterioration has also pointed to the need for ground drainage control and to some alterations in the drainage of the barrel-vaulted roofs and perhaps of the roof covering itself at Concepcion. Contacts were made in an effort to determine how the ac-

this year some additional damage occurred. This damage was restricted to two areas in the convento at San Jose and they were stabilized in August.

Fort Union National Historic Site. While Fort Union was not the subject of a special

project in the same sense as the paint conservation project at San Antonio Missions, several different projects were begun to look at a combination of needs at this important site.

Rick Geiser began work on a preservation plan during his special need appointment. The 15 days he spent on this project were directed to organizing documentation materials, reviewing existing planning documents, developing a prioritization system for the existing physical remains, and the development of a basic preservation concept. Hank Florence has now picked up this project and is tentatively set to continue work on it into the fall and winter. During the initial work on the plan, a need for some immediate assistance was pointed out by the park and Regional staff. Consequently, in early July, P.G. "Buz" McHenry, a recognized expert on



Figure 3.3 Chaco Culture National Historical Park. Photo documentation at Casa Rinconada. Requirements for the Regional Graphic Documentation program were being developed and tested at Chaco meetings.

adobe construction, spent 2 days with the stabilization crew instructing them in the selection of a soil for basic adobe work, and in some of the specific needs at Fort Union.

Another concern expressed by the park staff was the structural stability of some of the existing adobe walls. In response, DSC Structural Engineer Barry Welton visited the park to look at any emergency conditions which may have existed and to recommend appropriate action. Barry worked with the park staff and identified an additional wall which should be braced.

A third major step was taken during the week of September 21-25 when an adobe preservation workshop was conducted at Fort Union (Figure 2). Mr. McHenry again assisted with this workshop, which was organized by the park and PCC staff. In addition to the Fort Union maintenance staff, two people from Fort Davis attended and two persons from the State Monuments Division of the Museum of New Mexico. This workshop emphasized actual adobe preservation techniques appropriate at Fort Union, characteristics of adobe as a building material, and emergency treatments.

Plans, Studies, and Special Reports

Two preservation plans were begun, one at Carlsbad Caverns in addition to the one at Fort Union. The emphasis of both will be the development of a basic framework under which all information necessary for the proper management of the historic resources at these two parks will fall. The structure of the framework is provided by an overall preservation concept. A preservation plan was also originally scheduled for Guadalupe Mountains, but was delayed because of other priorities in other parks.

An HSR was completed by Laura Soulliere-Harrison and Beverly Spears for the Thunderbird Lodge at Canyon De Chelly. Another HSR was completed by DSC for the

Commissary at Fort Smith and distributed in November. The Bandelier HSR, by DSC personnel Randy Copeland and Roger Buck and Soulliere-Harrison, should be completed for Region and park review by early 1988.

The HSR for the Civilian Conservation Corps (CCC) complex at White Sands National Monument was completed by DSC Historian James Mote and will be sent out for review after some additional modification.

A study to provide treatment alternatives for five structures at Fort Davis National Historic Site was begun through a cooperative agreement with Texas A&M University. Staff worked closely with the park and Dr. Denny Fenn, Chief of the Cooperative Parks Unit at A&M, in the development of the scope of work, and met onsite on two different occasions to insure that this project would get off to a good sound beginning. This project includes alternatives, Level III documentation and recommendations for additional levels of documentation where appropriate.

A preservation plan for the preservation of the wood members at Mission San Jose at San Antonio was completed by an A&E contractor in February and was the basis for the replacement of the wood lintels and work on the thresholds which was completed in the spring. This report will also be used for upcoming work at the Indian Quarters at San Jose.

A plan was completed by contractor Harrison Goodall for the preservation and replacement of deteriorated wood lintels and vigas in the historic district at Carlsbad Caverns.

Hank Florence worked closely with the A&E contractor Cizek and Del Cid for a study of the Chalmeete monument at Jean Lafitte. Initially, a Scope of Work was prepared and after the contractor was selected Hank worked onsite during the Investigation Phase and was providing input to the contractors during the actual preparation of the report.

Graphic Documentation Program

The Regional Structures and Sites Graphic Documentation Program was developed as a draft in December and sent to Regional parks for their review and comments in June. Prior to that, a decision was made to proceed with an emphasis on the documentation needs for prehistoric and historic structures at a major archeological monument during 1987. An emphasis on the development of a base level of documentation was also emphasized at other locations as well as at Canyon de Chelly, the archeological monument selected.

The major thrust at Canyon de Chelly was by a two-person Historic American Building Survey (HABS) team supported by a third team member who was on the park staff and funded from the documentation budget. The three-person team worked for 2 of the 3 months of the season at approximately 10 sites using field sketches, accurately measured drawings, conventional 35mm photography, and videotape to record the sites. An important goal was to develop an appropriate level of documentation for a wide range of sites and structures that would be appropriate for other similar structures and sites at other locations. The staff at Canyon de Chelly has continued to utilize a video camcorder into the fall as an important method to meet some of the documentation needs.

One of the 3 months was spent utilizing terrestrial photogrammetry at White House and Analope House ruins to supplement earlier photogrammetric work and was utilized as well at several other sites. One week of that month was actual training in the field techniques, for which two Regional and one HABS, Washington Office, person were also trained. Catherine Colby and Jim Trott participated from Santa Fe, and later Catherine worked another week with

Morgan Reider, the HABS field supervisor, in completing some of the field work. Plotting from some of the stereo pairs will be completed during the fall as an important part of the project.

er Engineering for plottings of a 40-room block of rooms at Pueblo Bonito and all of BC-50. These plottings were a plan of both sites at an accuracy reflected in 4-inch contour intervals (Figure 2.4). This project also resulted in a typi-

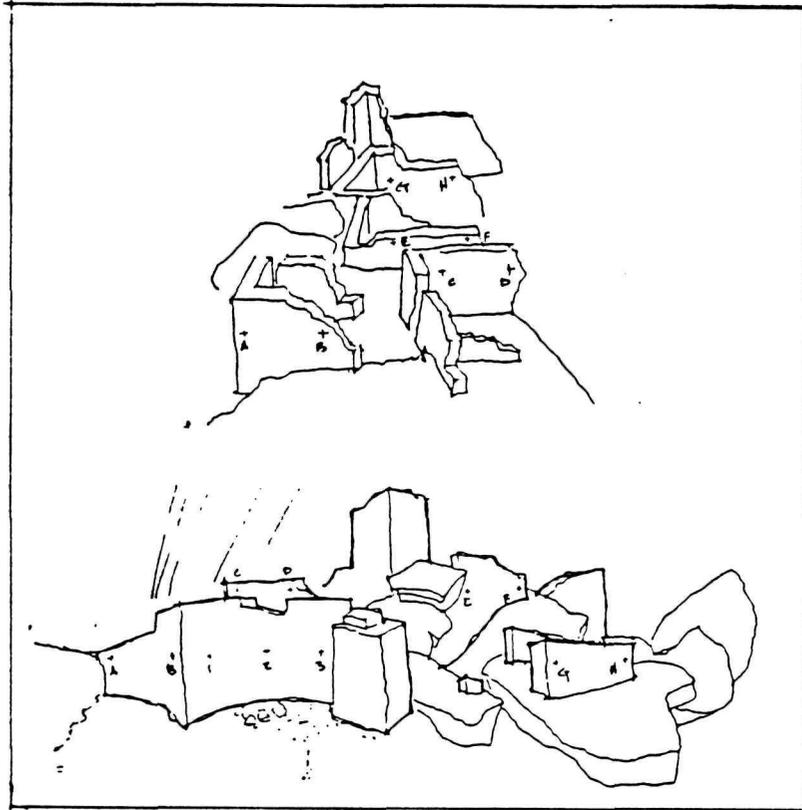


Figure 3.4 Canyon De Chelly National Monument. Field Sketches for photogrammetry at White House Ruin by HABS team member, Jim Ferguson. Letters indicate the locations of targets needed for producing plottings from stereopairs; distances between targets are noted on field sheets.

Staff also supported Chaco Culture by funding one seasonal employee to look at the needs and to begin to develop documentation levels for some of the small backcountry sites at Chaco. In addition, staff contracted with Pack-

cal section through each of these sites. The actual plotting data was edited on AutoCAD initially and is being further edited in the Regional Office on the division's AutoCAD system. This will afford different views and other graphics to be produced from the same computer data.



Figure 3.5 Canyon De Chelly National Monument. Fencing of Antelope House. Multit-year fencing program is intended to protect cultural resources from livestock trampling and visitor impacts.

Another significance was that these plottings were produced from 35mm images from a remotely controlled model airplane utilizing the division's MACO analytical computer driven plotter. This was the first case where the equipment was utilized in a real field situation on these types of resources. The initial results indicate that this may well be very significant in the documentation of a great number of the important sites and structures in our Region. The results are at a high level of accuracy and appear to be extremely cost effective. Large complexes such as those found at most of the archeological sites, and other historic sites such as mill or mine complexes, are difficult and expensive to document normally. The less expensive and more portable MACO may well be the most efficient way to record these sites, or portions of these sites, which require a level of accuracy achievable through photogrammetry.

Field work was done and images produced for the documentation of the inscriptions at El Morro by the MACO 3 years ago, although no actual plottings were produced. Dave Battle and

Jake Ivey are completing a report on that work which will include a typical plotting and a critique for future use on this type of resource. Dave has also worked this past year producing a users manual for the system which was completed in December.

A Historic American Engineering Record (HAER) team worked during the summer documenting the mechanical systems in the bathhouses at Hot Springs National Park. The results of this project will assist in the identification of significant components or entire systems which should be preserved during the rehabilitation of the bathhouses.

This graphic documentation program was reviewed during a working meeting at Chaco Culture during the first part of November. A refinement of the Regional Sites and Structures Graphic Documentation Plan and plans for the FY88 implementation of the plan were discussed by representatives of the Regional Office, Chaco Canyon, Canyon de Chelly and Wupatki. Representatives from Mesa Verde, DSC and Packer Engineering also participated.

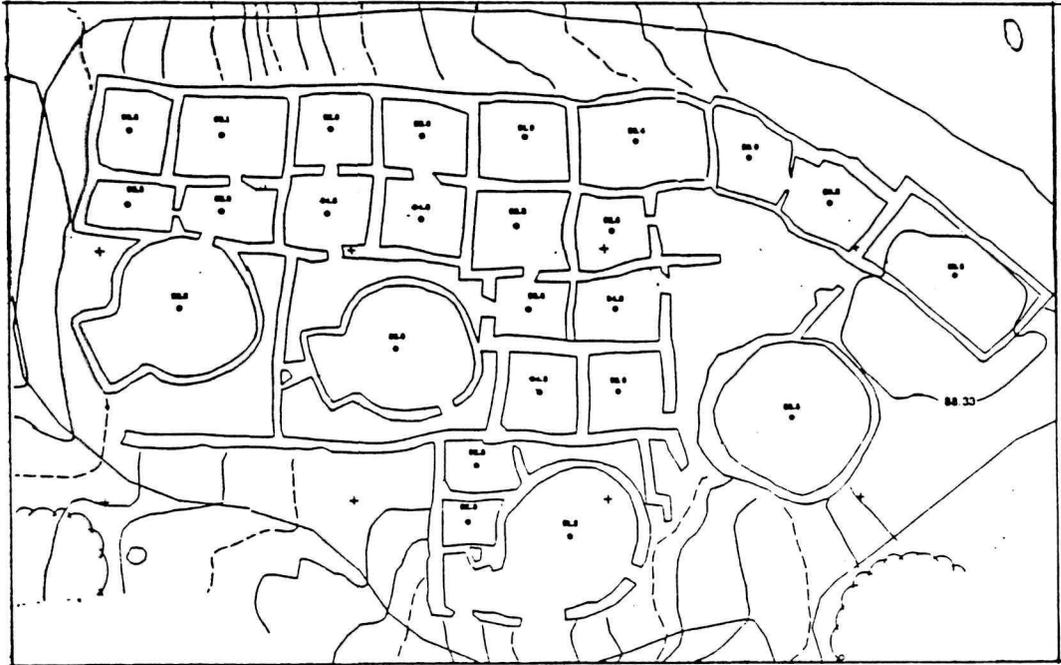


Figure 3.6 Chaco Culture National Historical Park. Photogrammetry resulting in computer-drawn plan of site BC-50 showing controll data. Stereo pairs were shot from model airplanes by Parker Engineering. Data produced by the NPS MACO computer-driven analytical plotter was then edited in AutoCAD.

Carey Feireabend completed a Level III document for structures at Plum Creek and the McBride Ranch at Lake Meredith. She also consulted with the park staff on general documentation and preservation needs.

Material Analysis Laboratory

Some basic material analysis for Fort Union, San Antonio, and Pecos projects was completed this year. By December, with plumbing completed, the lab became partially operational. A contract for electrical work will also be

put together early this year allowing more basic material work to be completed after the existing lab equipment is set up. There has been contact with personnel of the State Monuments Division of the Museum of New Mexico and there has been interest expressed in coordinating the needs of both organizations in the development of laboratory and material analysis resources.

The long-term mortar analysis field test, based upon a report completed in FY86, was implemented at Salinas National Monument. The 1986 report evaluated various mortar types with different admixtures and recommended the field evaluation for those which showed most promise

for eventual field implementation. This is a continuing project with field evaluations taking place approximately once every 6 months.

Monitoring

Structural and preservation monitoring occurred primarily at San Antonio Missions in the conventos at San Jose and Concepcion. The monitoring system has been continually modified since it was established last year (Figure 4). The actual day-to-day monitoring continues to be done by the staff at San Antonio Missions. The structural monitoring data is being utilized by DSC Structural Engineer Barry Welton in his soon to be completed report on the condition of the north wall of the San Jose convento. A scope of work was written and other assistance provided to the park for monitoring at White Sands National Monument, which is being undertaken by the U.S. Geological Survey. This work is being done through a Memorandum of Understanding between the U.S. Geological Survey and the National Park Service.

Tony Crosby consulted with the staff at Hubbell Trading Post and suggested monitoring for the Guest Hogan. Later, he reviewed the structural concerns related to this structure, as well as a stone basement wall in the Hubbell Home onsite with Lawrence Woody, Facility Manager.

Training

Another responsibility of the section is that of assisting in and/or organizing training in the Division of Conservation (PCC). Training at several different levels was provided at San Antonio Missions, Fort Union, Canyon de Chelly, and the Region. Section personnel also par-

ticipated in a cultural resource management workshop at San Antonio Missions, and in the Chief Rangers and Resource Managers Conferences in Santa Fe.

A workshop was conducted for the interpreters at San Antonio Missions on the principles and methods utilized in the conservation of mural paintings, particularly as they related to the conservation of the decorative surfaces remaining in the San Antonio Missions. Tony Crosby was also involved in an area CRM training workshop in San Antonio Missions in August in which he reviewed past San Antonio preservation projects and, along with Jake Barrow, discussed current projects. He also discussed the Regional graphic documentation program at that same workshop.

Two separate workshops totalling 7 days were organized on adobe preservation principles and practice for Fort Union. These workshops are reported on in more detail in the section of this report which covers the special projects at San Antonio Missions and Fort Union. The work session was videotaped and an instructional videotape will be developed from the raw footage for use by other parks and organizations.

Tony Crosby was involved in the planning of the curriculum for the annual preservation workshop for Historical Architects which emphasized the roles of the personnel representing that discipline in the implementation of the Maintenance Management program. I also made a presentation on that subject at the workshop.

The special week-long training of terrestrial photogrammetry was organized in conjunction with the HABS project at Canyon de Chelly. In addition, Catherine Colby attended a historic landscape training in Baltimore; Auto-Cad drafting course in Santa Fe and the annual National Trust training in Washington, D.C.

Design Assistance

Because of the shortage of staff in relation to the year's workload, PCC personnel often assist in other projects, regardless of the stated responsibilities of the section in which they may be working. Project design work was undertaken by personnel of the section. The main projects were at San Antonio Missions, Carlsbad Caverns, Hot Springs, White Sands, and the Old Santa Fe Trail office building. The design assistance amounted to approximately 100 person days during this past year.

San Antonio Missions preservation designs were produced for the masonry stabilization work completed this past spring and for future year projects.

At Carlsbad Caverns, Catherine worked with the park staff on designs for storm windows and screens, and the future needs related to the deterioration of roofs, vigas and lintels. Catherine also assisted by completing measured drawings of the Lamar Bathhouse at Hot Springs for DSC Engineer Welton.

Rick Geiser developed a stucco specification for the restuccoing of one of the historic CCC structures in the maintenance and administration area at White Sands. Catherine then combined this specification with drawings and specifications for roofing included in one construction contract.

Catherine has been the main staff person involved in the A&E contract for the construction documents for the Old Santa Fe Trail building and Hot Springs, Lamar Bathhouse rehab window designs over the past 6 months.

Maintenance Management Program and Historic Structures Preservation Guides

As a member of the Service Maintenance Management Technical Review Committee, Tony Crosby has been involved in this important program, particularly as it relates to the use and development of HSPGs. With the implementation underway, the overall direction of HSPGs and the form that they may take are very important considerations in the protection of cultural resources through preservation maintenance. The Southwest Region has been in the forefront in the development and implementation of HSPGs in previous years and now, beginning this year will be again as the proposed development of a prototype HSPG will be at one of our parks.

DESIGN SECTION REPORT

The design section is responsible for designing solutions to particular building conservation problems, producing the drawings and specifications to carry out the solution, and monitoring the actual work on the structure. At the completion of a project, the design branch prepares as-built drawings to document the work including any changes in the original drawings and specifications. In addition to specific design projects, the design staff conducts site investigations and inspections of historic structures; iden-

tifies conservation needs, provides technical solutions, conducts architectural research and documents historic structures and elements. The design staff also reviews various projects proposed by the parks or other divisions within the Region that will affect historic and prehistoric structures and lends assistance as needed to conserve cultural sites.

Additional input to cultural resources management and problems was provided through review of Resource Management Plans for the above listed parks as well as Bandelier and Salinas National Monuments.

Prehistoric Ruins Preservation Design

Ruins stabilization designs were completed for the following projects:

- * Gila Cliffs, Gila Cliff Dwellings National Monument
- * Five Sites, Canyon de Chelly National Monument
- * East Ruin, Aztec Ruins National Monument
- * Wupatki Pueblo, Wupatki National Monument
- * Pecos Convento, Pecos National Monument

The stabilization of 5 sites near the Junction Area in Canyon de Chelly included, Ledge Ruin, Kokopeli Cave, Big Hand Cave, Twin Trails # 9, and Canyon del Muerto (CDM) # 133. These are all cliff dwellings in which the preservation is remarkable. Preservation treatment consisted mainly of patching small areas of deterioration and backfilling of previous excavations and threatened exposed wall or archaeological features.

The design for the East Ruin at Aztec Ruins National Monument involved a comprehensive stabilization of the structure. All surface rooms were treated, holes filled in, and

drainage systems repaired. The East Ruin contains several ground floor rooms with intact ceilings. These rooms were not treated except to close off their entrances.

A preservation design was prepared for the drainage of 5 rooms in the South Section of the Wupatki Pueblo. This included structural repair of these rooms as well.

In addition, ruins stabilization assessment programs were developed for Canyon de Chelly and Wupatki. These involved the development of criteria to assess and prioritize the archaeological resources in these parks for preservation treatment. The Division of Anthropology participated in the recordation and assessment of these archaeological sites. Through their input the assessment recordation forms were improved. The staff at both of these monuments participated in this program all summer. It was greatly appreciated. Steve Cinnamon, Resource Preservation Specialist at Wupatki National Monument further condensed the assessment recordation forms so they could more easily be handled in a computer program.

The past winter was excessively wet with extremely cold temperatures. This resulted in emergency stabilization work in Chaco Culture, Pecos, Aztec Ruins, and Salinas. Funding was obtained for this emergency winter damage by deferring other projects. As part of this emergency work a contract was initiated with Nickens and Associates for the "Identification and Assessment of the 1986-1987 Winter Storm Damage in the West Ruin in Aztec Ruins National Monument." From this study the most critical ruins areas were determined and later treated.

Both the designers and members of the preservation crew provided a Ruins Stabilization Training Course in conjunction with the National Forest Service. The course was well attended reflecting a high interest in this subject. The design staff also participated in the Resource Management Course and production of a videotape training aid.



Figure 3.7 Canyon De Chelly National Monument. Exceptional preservation in Wild Cherry Ruin. Note intact roofs with entryways.



Figure 3.8 Canyon De Chelly National Monument. Hanging Ladder Ruin recorded in the Ruins Assessment Program. The site derives its name from the ladder which hangs against the cliff face used in gaining access to the site.

In addition to ruins project design and planning, Jim Trott stayed involved during the implementation and followup reports for the projects. Final inspections by Jim included Pecos, Canyon de Chelly, Wupatki, and Aztec Ruins Projects.

Cultural resource problems at Gila Cliff Dwellings, Aztec Ruins, Navajo and Wupatki and Chaco Culture were inspected. Erosion problems at Navajo's Kiet Siel, Inscription House, and Turkey Cave were examined with



Figure 3.9 Aztec Ruins National Monument. West Ruin emergency stabilization from 1986-1987 winter damage. Note collapsed dorrway.



Figure 3.10 Navajo National Monument. Note preservation of adobe and jacal walls in Inscription House Ruin.

hydrologist Gary Rosenlieb from Water Resources Division, Fort Collins, Colorado. Input concerning ruins preservation problems at Aztec Ruins was provided to the GMP planning team.

Archeologist Trott presented a paper at the 1987 Pecos Conference on the preservation of cliff dwellings. The division's preservation work on ruins structures, and the responsibility of archaeologists in ruins preservation work.

Historic Structures Design Projects:

The staff worked on many short range projects as well as complete construction document production for contract work. At the start of 1987 the design section consisted of Tom Vitanza for all historic preservation work and some assistance from the Denver Service Center. The following workload was supplemented with assistance from two new hires later in the year-- Beverly Spears and Catherine Colby.

Aztec Ruins National Monument. Design for installation of automatic door openers at the visitor center was underway to improve accessibility.

Bandelier National Monument. The design staff, in cooperation with the OEF division, assisted in the design of the remodeling of the snack bar in a historic CCC-built structure. Staff is continuing to consult on accessibility improvements.

Big Bend National Park. The Garlick House and La Casita were reroofed based on construction drawings and contract administration by the design staff.

Buffalo National River. A preservation work plan was developed for the Boxley Grist Mill for stabilization work on structural members and exterior walls and windows.

Carlsbad Caverns National Park. The design staff provided assistance for a carport design within the historic CCC-built housing area.

Chickasaw National Recreation Area. Repairs for the historic stone retaining walls of the Bromide Hill trails were based on drawings and specifications prepared by the designer.

Fort Smith National Historic Site. Accessibility into the Jailwing/Courthouse Building was greatly improved by the installation of two inclined wheelchair lifts at interior stairways. Restrooms in that building were also made accessible through a project designed by a local Fort Smith Architect working cooperatively with design staff.

A report on structural fire suppression needs at Fort Smith NHS was prepared by Southwest Loss Control, Inc. The maintenance building, which contains the curatorial areas, was considered top priority. The consultant is under contract to design a wet-pipe sprinkler system for the building.

Contract documents were prepared for the repair and painting of the roof ventilators on the Jail wing.

Hot Springs National Park. The Lamar Bathhouse reroofing project and the exterior wall refinishing project were designed in-house and awarded to local contractors. Jerry Shaffer of the Denver Service Center is acting as Contracting Officer's Technical Representative.

Hubbell Trading Post. A design for the historic two-story barn, using a liquid-applied elastomeric waterproofing membrane applied over the existing lightweight concrete deck was prepared.

Structural fire prevention and suppression at Hubbell Trading Post was studied and a report prepared by Southwest Loss Control, Inc. under

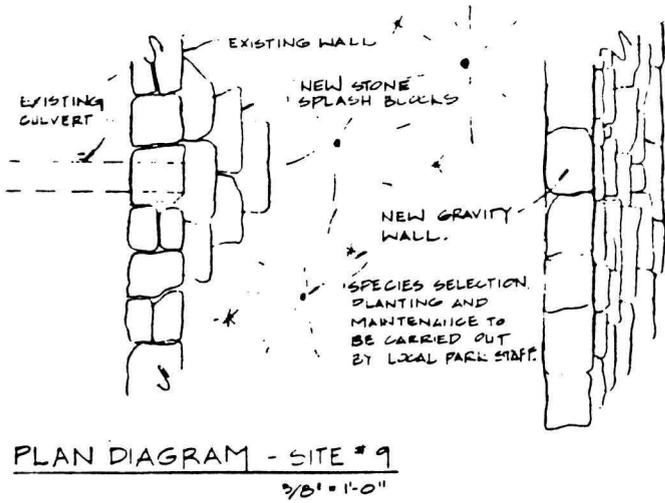
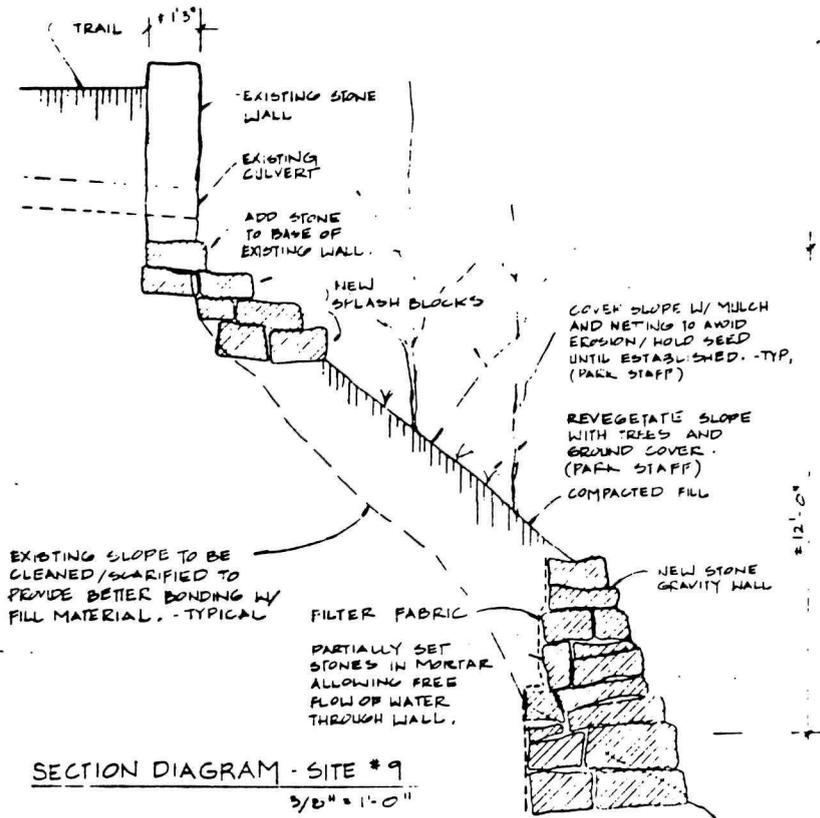


Figure 3.11 Chickasaw National Recreation Area. Detail from Bromide Hill Trails Stabilization Design. This shows the compatibility of new stone work with existing.



Figure 3.12 Hubbell Trading Post National Monument. The historic barn was partially reroofed this year using a liquid-applied waterproof membrane and a stabilized-soil covering.

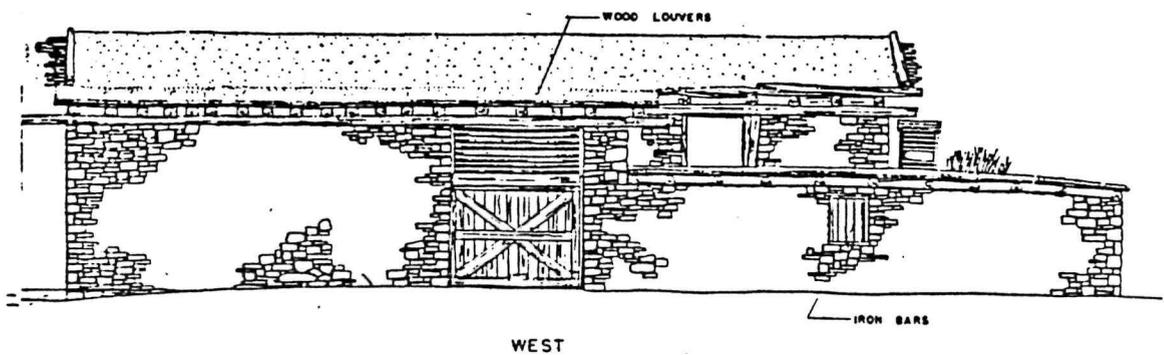


Figure 3.13 Hubbell Trading Post National Monument. West elevation of Hubbell barn showing part of upper roof. Note the new stabilized earthen roof.

a contract monitored by the division. Certain improvements and extensions of the sprinkler systems recommended in the report are being designed.

Assessment of deficiencies in electrical systems and the design and monitoring of the improvements was carried out by Richard J. Moss Associates Consulting Engineers under direction of the division.

Lyndon B. Johnson National Historical Park. The flat-roofed areas of the Texas White House were reroofed based on drawings and specifications prepared by the design branch.

Old Santa Fe Trail Building. The design of the partial rehabilitation of this structure is being developed through co-ordination among the design staff, Harrison Goodall of Conservation Services, Inc., and Richard Yates Architects, a Santa Fe firm utilizing computer-drafting facilities. The results of this association are computer-generated drawings and data files necessary for the rehabilitation and replacement of vigas, canales, and other wood elements. A temporary hire of Eliot Davidson enabled the completion of a reflected ceiling plan.

As-Built Drawings--Completed this year included drawings of the stabilization of Atsinna Ruins, El Morro, foundation wall repair at the Texas Whitehouse, Lyndon B. Johnson, stabilization of schoolroom and bastion at Mission Espada, San Antonio Missions, and barracks restoration at Fort Davis.

White Sands National Monument. Restuccoing, reroofing design projects were undertaken and a contract was awarded for more work next year.

Many improvements in the office layout, library, videotape collection also occurred with the aid of the design staff. A graphics inventory has been placed on-line with the Regional com-

puter. Summer placement of Jose Sena and a temporary position filled by Anthony Montano were very helpful.

Other Design Related Issues

Compatible Design Review. One of the more important reviews undertaken by the design section was that of the Visitor Contact Station for Mission Concepcion at San Antonio Missions. Historical architects from the Southwest Regional Office worked closely with Denver Service Center (DSC) designers to modify the DSC preliminary design. A modification was recommended after an NPS-28 Compatibility Test. After the presentation, it was clear the proposed preliminary design would not be compatible with the historic scene at Mission Concepcion. This resulted in an onsite visit and later design charrette. Currently the Denver Service Center is finalizing this design based on the onsite discussions.

Another significant review of preliminary design resulted in evaluating the design of three proposed cultural centers at Jean Lafitte against the Secretary of the Interior's Standards for Historic Preservation Projects. The outcome of this review was onsite meetings with the park and contract designers. Recommendations were made to the contractor that would allow modifications of the proposed designs so they would more closely meet the standards. New construction of three buildings has been planned with two of the three attached to historic structures. The design section's involvement in this review should have a positive influence on the future development. Other parks that have had a similar design consultations include Guadalupe Mountains, Buffalo River, Carlsbad Caverns, and Canyon de Chelly.

Handicapped Access to Historic Structures. The design section is currently involved with evaluating and designing modifications to historic structures open to the public. These

modifications involve sensitive detailing of door openers, ramps, and porch elevations. In some cases the modifications can result in an improvement to the historic scene or their impact on it mitigated by appropriate design.

One example is the design work being initiated at Aztec Ruins. A design recommendation is currently being developed that will make the visitor center doors easier to open by all visitors, including the handicapped. Independence of visitor access is stressed in all design work where possible. Other parks that have had some design consultations include Hot Springs, Bandelier and Hubbell Trading Post.

Space Analysis. The section of design developed an office plan and space analysis for the Division of Conservation. Use and furnishing layout was presented graphically so that an overall use pattern could be identified. The presentation was used to reorganize the work space for both the sections of Design and Research into a more efficient configuration.

PROJECT

IMPLEMENTATION

SECTION REPORT

The preservation crew implements projects in parks where assistance is requested by area managers.

The preservation crews implement both prehistoric and historic cultural resource preservation projects. Intervention to preserve cultural resources is implemented only after the identification of need, preparation of design, compliance and funding are confirmed.

Ruins Stabilization Work

Ruins stabilization project work was completed on the following:

Gila Cliff Dwellings. Minor stabilization was performed on the main ruins and site safety considerations were addressed and identified by Terry Morgart.

Aztec Ruins. East and West Ruins were comprehensively stabilized. West Ruin suffered severe deterioration over the winter of 1986-7. Emergency stabilization repairs were identified in a scope of work prepared by Archeologist Todd Metzger, under contract with Nickens & Associates, and carried out with a combined park and division crew under Terry Morgart.

Canyon de Chelly National Monument. Several sites were stabilized with minimal intervention treatments by the park crew, under division supervision by Terry Morgart.

Pecos National Monument. Work on the Convento and winter damaged was pursued under Terry Morgart.

Wupatki National Monument. A portion of Wupatki Ruin was stabilized, with the emphasis of the project concentrating on improving positive drainage under supervision of Eugene Tsosie.

Chaco Canyon National Historical Park. Several sites were stabilized by park Archeologist Dabney Ford and the park ruins stabilization crew.

Salinas National Monument. Comprehensive stabilization of Quarai proceeded with Cultural Resource Preservation Program funding. A long-term mortar testing program developed by Architect Tony Crosby was also im-

plemented at the Quarai unit of Salinas under Terry Morgart.

A joint ruins stabilization training workshop was held in cooperation with the U.S. Forest Service, with representatives of the Navajo and Zuni Tribes and other Federal agencies attending. There will be a second conference to be arranged by Terry Morgart.

Historic Preservation Work

Historic preservation designs are produced by division archeologists, architects or under contract.

Big Bend National Park. The Garlick House and La Casita were reroofed at Big Bend under a contract supervised by Architect Tom Vitanza and assisted by Tim Gallaher of the Williamsport Preservation Training Center (WPTC).

Fort Smith National Historic Site. The courthouse steps were repaired and handicapped accessibility projects were implemented using the park's day labor crew and oversight by Jake Barrow.

Hot Springs National Park. Mechanical and environmental control system of the Lamar Bathhouse was completed at Hot Springs. Exhibit Specialist Bobby Flickinger, on a temporary detail from Pea Ridge, assisted the division prepare for reroofing and repainting work currently underway.

Buffalo National River. Phase II of the Boxley Mill stabilization was implemented using Barry Caldwell of WPTC.

Fort Davis National Historic Site. Two reproductions of historic doors for the Fort Davis Visitor Center were constructed in the division's shop in the Pinon Building.

San Antonio Missions National Historic Park. Repair of mission structures continued with Cultural Resources Preservation Program funding.

Chickasaw National Recreation Area. At Chickasaw, historic stone walls in the Bromide Hill district were repaired.

Hubbell Trading Post National Historic Site. Reroofing the Barn was underway supervised by Eugene Tsosie

Bandelier National Monument. Project work continued on Bandelier Package 224 in the residential area at Bandelier, wood rehabilitation of the Frijole Canyon CCC buildings.

The second year of work on the Faraway Ranch at Chiricahua National Monument was completed in response a request from the Western Region to implement preservation maintenance work in a remote area where contracting is not feasible.

The Pecos Visitor Center addition was constructed under the supervision of Supervisory Exhibit Specialist Doug Hicks.

Preservation Crews have assured that reprogramming and timely execution of deferred projects continued at Aztec Ruins, Gila Cliff Dwellings and Hubbell Trading Post in 1988. Training opportunities were provided for park maintenance staff members during ongoing projects at Bandelier and Pecos.



Figure 3.14 Gilla Cliff Dwellings National Monument. The base of the wall at the front of Cave 2 was stabilized by inserting a wedge of cement amended mortar and repointing the surface of the joint with unamended mud mortar.



Figure 3.15 Aztec Ruins National Monument. Stabilization at East Ruin. PCC crew members Taylor Tsosie and Ernest Nez work on drainage systems in the eastern roomblock above underground rooms.



Figure 3.16 Canyon De Chelly National Monument. Stabilization at Big Hand Cave. Left to right, Joe Francis, David Wagner, and Drew Henry repair voids at the base of Kiva B walls. Note sprayer used to control splash water applied during treatment.



Figure 3.17 Pecos National Monument. Stabilization of the north convento wall. Vivian Lujan and Richard Valdez work on natural adobe veneer on the north side of the wall. Partial wall collapses during the winter required emergency treatment.



Figure 3.18 Salinas National Monument. Stabilization at the Quarai Unit. Work through the season was concentrated on the mission and convento wall caps. A mortar testing program was implemented in the convento.



Figure 3.19 Chickasaw National Recreation Area. The stone CCC-built retaining walls along the trails on Bromide Hill were repaired and extended in places to counteract erosion.

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Table 3.1 FY-87 Division of Conservation Day Labor "fabric" Project List.

Park	Project	Amount	Scope of Work Designers
Aztec Ruins	East/West Ruins	60,000	Trott/Metzger
Bandelier	Wood Rehab:Pkg 224	100,000	Copeland
Ruffalo River	Boxley Mill Rehab	56,000	Vitanza/Welton
Canyon de Chelly	Ruins/Fencing	35,000	Trott
Chickasaw	Masonry Walls	20,000	Spears
Chiricahua	Faraway Ranch	33,000	Western Region
Chaco Culture	Ruins Preservation	65,000	Ford
Fort Davis	Paint Woodwork	25,000	Park
Fort Smith	Court Stairs	10,000	Vitanza
	Handicap Access	10,000	Spears
Gila Cliff	Ruins	8,000	Morgart
LBJ	Repair/Repaint	25,000	Park
	Guardhouse	8,000	Park
Pecos	Storm Damage	17,000	Morgart
	V.C. Addition	90,000	Battle & A&E
San Antonio	Stabilize missions	50,000	Crosby
Salinas	Quarai	40,000	Crosby
Wupatki	Ruins Preservation	51,000	Trott
Division	Preservation Crew	123,000	Hicks/Morgart
TOTAL		\$826,000	

Table 3.2 FY-87 Division of Conservation Research and Design Projects List.

Canyon de Chelly	Assessment	11,000	Trott
Fort Davis	HSR	15,000	Crosby
HABS	BUFF,BIBE,CACH, GUMO	56,000	Crosby
Hot Springs	Bathhouses	60,000	Spears/Vitanza
HUTR/FOSM	Fire Suppression	50,000	Spears
Jean Lafitte	Monument Study	12,000	Crosby
Maintenance Mgt	FOUN,NAVA,GUMO,WUPA	20,000	Crosby
Parkwide plans	CACA,FOUN,GUMO	23,000	Crosby
Design	Multi park	92,000	Snow
Project Mgmt	Multi park	85,000	Crosby
Wupatki	Assessment	13,000	Trott
TOTAL		\$437,000	

Table 3.3 FY-87 Division of Conservation Contract "Fabric" Project List.

Fort Smith	Painting/chairlift	20,000
Hot Springs	Lamar Bathhouse	50,000
Hubbell	Rewiring	30,000
LBJ	Reroof	20,000
White Sands	Reroof/Stucco	25,000
TOTAL		\$145,000
DIVISION TOTAL		\$1,408,000

SECTION FOUR

DIVISION OF HISTORY

CULTURAL RESOURCE MANAGEMENT ACTIVITIES

INTRODUCTION

Once again the Division of History spent much of its energy in finalizing the lease for the Bathhouses at Hot Springs, monitoring historical research, and reviewing Resource Management Plans. A big effort went into completing the Regional Resource Summary and Action Plan, which took nearly 6 months and involved 4 divisions. The resultant plan included data on each park as well as aggregated data for the Region as a whole. Cultural Resources training courses were another big emphasis, especially with the new Section 106 compliance regulations. In short, it was another full year.

While the Division of History provides assistance to field areas, other specific activities that involve cultural resource management are described more fully below.

Compliance

The drop in the number of Assessment of Affect Forms during 1986 required follow-up memoranda from the new Regional Director, John Cook. The parks responded with 322 XXX forms for 1987 as compared with 157 for 1986.

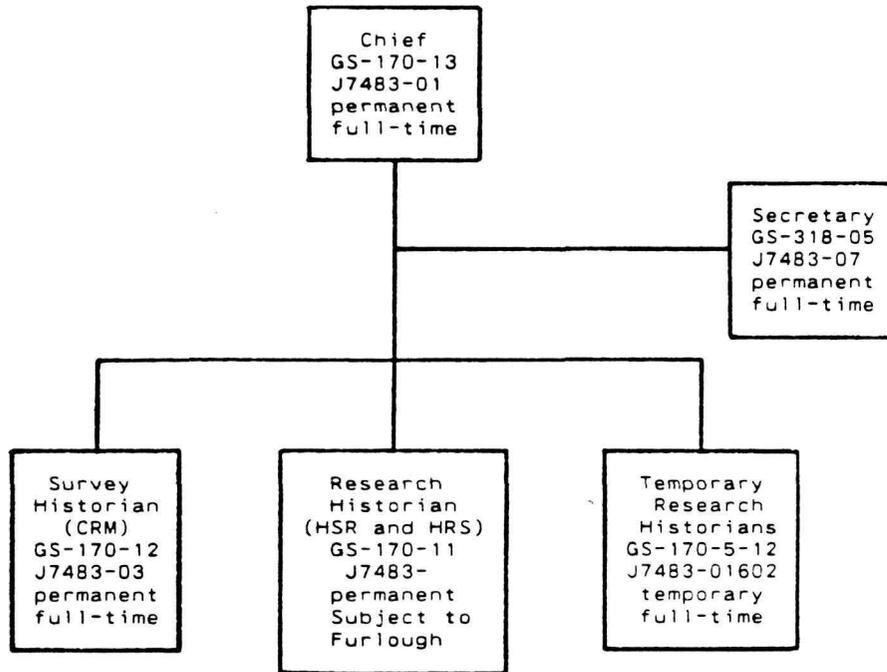


Figure 4.1 Organization of the Division of History.

In addition, Melody Webb, Chief, Division of History, attended a 2-day training course in the new Section 106 Compliance regulations. During the next 9 months, she gave 6 training courses to Regional and park staff.

After multiple reviews, the division finally saw the first signed exchanges in the Boxley Valley Cultural Landscape of Buffalo River. The exchanges allow the original owner to exchange his/her Use and Occupancy rights for fee title

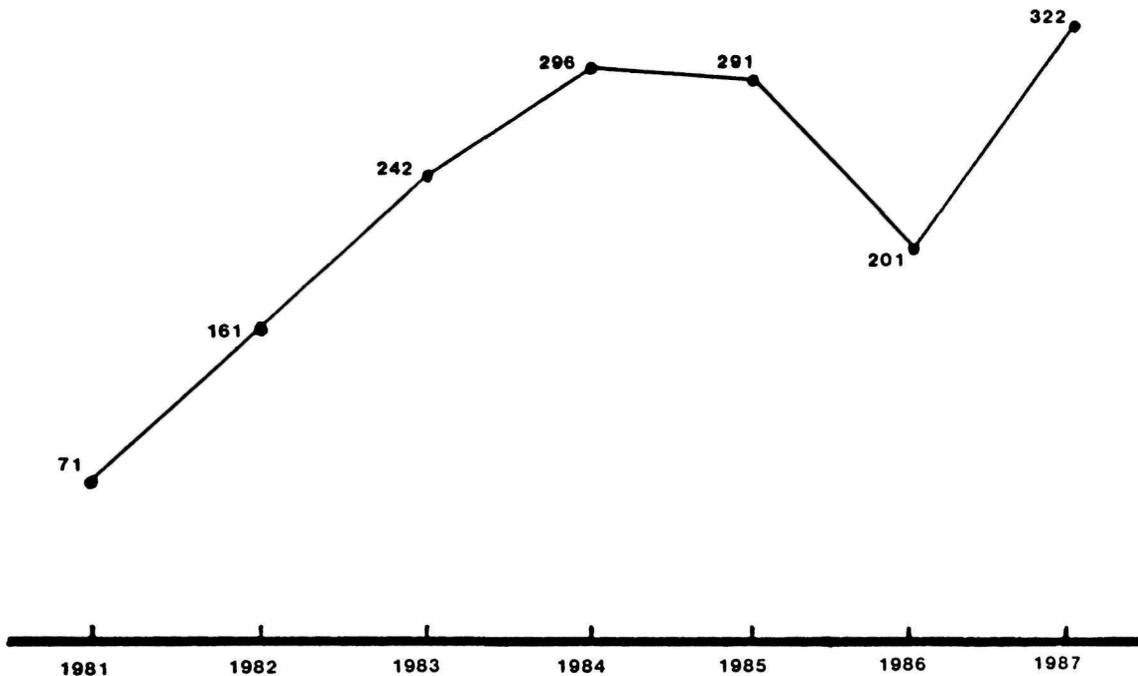


Figure 4.2 The number of Assessment of Effect (XXX) Forms since 1981. The marked decline in XXX activity in FY 1986 was reversed in FY 1987.

Planning and Review

The Division of History continued to represent the interest of cultural resources on several planning teams. During planning sessions on handicapped access, Melody helped ensure a minimal of intrusion to the historic structures and scene at Fordyce Bathhouse (a National Historic Landmark) and Aztec Ruins Visitor Center. She also played an active role in planning studies on the Santa Fe Trail and the Texas School Book Depository (at the site where John F. Kennedy was assassinated).

with stipulations. Thus, the people who created the landscape will perpetuate it as it was anticipated during the legislative process. The story of this revolutionary Land Use Plan is detailed in Melody Webb's article on Cultural Landscapes described under "Publications."

Historic Property Leasing Program

Complex negotiations for the lease of five historic bathhouses at Hot Springs National Park were completed during 1987. The lease was signed in a ceremony held at Hot Springs on

August 28, and lessee Melvyn Bell is proceeding with preparation of plans and specifications for the rehabilitation work including asbestos removal. The 50-year lease will involve over \$10 million in rehabilitation costs to the lessee; thus making the Hot Springs lease the largest in the Service in terms of dollar commitment by the private sector.



Figure 4.3 On August 28, 1987, a new era began at Hot Springs National Park. In a ceremony held on the Arlington Lawn in Hot Springs, Little Rock investor Melvyn Bell signed a 50-year lease for five historic bathhouses in the park. Bell who will spend approximately \$10 million to rehabilitate the buildings for adaptive uses, made the largest dollar commitment to date for a historic property lease in the National Park System. The lessee's first task is asbestos removal. While experts prepare plans and specifications for that work, architect Charles Witsell will proceed with preparation of historic structures reports and design for the future spa, bed and breakfast inn, museum of musical mechanical instruments, restaurant, and fine arts center.

In conjunction with staff at Buffalo National River, Diane Jung worked on a detailed Request for Proposals for the lease of agricultural lands in the Boxley Valley. The RFP is unique in its approach as it will ensure that the Ozark culture can continue to evolve in this area recognized for its cultural landscape values. Leases are expected early in 1988.

Training

The Division of History coordinated a 3-day "Orientation to Cultural Resources Management" course held at San Antonio Missions National Historical Park in August. The 20 attendees from 5 park areas and the Regional Of-



Figure 4.4 Participants in "Orientation to Cultural Resources Management." During a 3-day course participants spent almost half of their time in the field. Building conservation techniques, preservation maintenance, and impact of modern intrusions on the historic scene were among the topics that were covered during the classroom sessions and field trips in San Antonio Missions NHP and Lyndon B. Johnson NHP. Here, the class discusses under-utilization of the Johnson Settlement by visitors.

fice braved the summer weather to participate in classroom sessions and field trips. A full day was spent at Lyndon B. Johnson National Historical Park to become familiar with operations and issues at this area with major cultural resources. Future courses of this nature will be offered in field areas at least once a year.

In a cooperative effort with the Division of Natural Resources Management, the Division of History coordinated the cultural aspect of a

resources management workshop held in Santa Fe in April. The Southwest Cultural Resources Center funded travel and per diem for a number of attendees. Sessions on cultural resources management subjects included Section 106 compliance, the National Register, cultural landscapes, ruins stabilization, and the Regional Cultural Resources Summary and Action Plan (RSAP).

Diane Jung participated in a detail to Mather Training Center to assist staff with coordination of the 2-week Curatorial Methods course. Her involvement included preparing the agenda and objectives, assisting with operations during the course, and preparation of the course report upon completion. Diane's exposure to the training center has resulted in substantial improvements to the training offered by the Southwest Cultural Resources Center.

In cooperation with the Division of Conservation and the Park Historic Architecture Division, Washington Office, Diane served as an instructor in a workshop for U.S. Forest Service architects from throughout the nation. The October workshop generated considerable interest in NPS programs from architects whose work with historic structures is far less extensive than ours.

During 1987, Melody taught 11 separate topics at 5 different training courses. These topics included Section 106 Compliance, Cultural Landscapes, Publication of Research Results, and the Regional Summary and Action Program.

List of Classified Structures/Cultural Resources Bibliography

The division spearheads an ongoing program to revise and update these lists for the Southwest Region. During the summer of 1987, intern Kristin Miller added about 600 sources in the Cultural Resources Management to the

CRBIB in DBase III+. Kristin also revised numerous listings in the LCS, and field inventory forms for the addition of over 100 structures at Wupatki were completed.

On a trip to Buffalo National River in September, Diane Jung worked with park staff to complete field inventory reports for inclusion of over 100 structures in Rush Historic District on the LCS.

The Division of History is working with the Division of Information Management to accomplish conversion of LCS data from the ORACLE database into DBase III+ for use in PCs.

National Register Forms

Three historic properties at Buffalo National River were added to the National Register of Historic Places during FY 87. The Rush Historic District, a late nineteenth and early twentieth century zinc mining area, was listed in the register in February. In July and August respectively the Upper Big Buffalo Historic District and the Parker-Hickman Farm Historic District were included in the nation's list of historic properties worthy of recognition. The Upper Big Buffalo Historic District--commonly known as Boxley Valley--is well-known as the prototype for cultural landscapes both in and out of the National Park System. The Parker-Hickman property is representative of exploration, settlement, and vernacular architecture of the Ozark region from mid-1800s until well into this century.

Other National Register nominations that were submitted to the Washington Office for review and are now in the final stages include: The Southern Emigrant Trail and the Butterfield Overland Mail Trail Historic District (Guadalupe Mountains National Park); Rattlesnake Springs Historic District and The Caverns Historic District (Carlsbad Caverns National Park); the documentation for San Antonio Missions National Historical Park; and the White

Sands National Monument Historic District. In addition, a Determination of Eligibility was made on the Barataria Unit of Jean Lafitte National Park, pending complete documentation.

The Division initiated 11 new National Register forms: documentation for Hubbell Trading Post National Historic Site and Pecos National Monument, a potential historic district in Richland Valley at Buffalo River, some CCC buildings at Buffalo, and two Ozark farmsteads in the wilderness area of Buffalo River, a parkwide form for Hot Springs National Park, two army outposts at Big Bend National Park, Thunderbird Ranch area at Canyon de Chelly National Monument, and the historic district of Barataria Unit in Jean Lafitte National Historical Park. Laura Soulliere Harrison also did

tures will be folded into an ongoing documentation exercise for the park as a whole.

RESEARCH ACTIVITIES

Much of the energy of the division has been spent on research. The type of research includes Historic Structures Reports, Historic American Engineering Record drawings and studies, Administrative Histories, and Special History Studies.



Figure 4.5 Excavations within the church of San Gregorio de Abo, Salinas National Monument. The investigations, under the direction of James Ivey, tested Ivey's hypothesis that San Gregorio had originally been built as a small, simple church and later rebuilt as the large, complex building to be seen at Abo today. The outline of the sanctuary of the earlier church can be seen here in the transept area of the later church.

Determinations of Eligibility on 12 structures in the Johnson City Unit of Lyndon B. Johnson National Historical Park. The significant struc-

Historic Structures Reports

The Historic Structures Report on Salinas National Monument will be completed in Fiscal Year 1988. During FY 1987, James Ivey con-

ducted detailed investigations at both Abo and Grand Quivira. These investigations produced surprising results.

At Abo, Ivey carried out a limited archeological excavation to test the hypothesis that the church and convento had been extensively rebuilt and expanded. The excavations showed that the Franciscans had originally built the church of San Gregorio as a simple building about 90 feet long in the early 1620s. Later, in the 1640s, the Franciscans removed the roof and rear wall of the first church and added a 47-foot extension to the building. The changes resulted in the church visible today. At present, Abo is the only known seventeenth-century example of such a demolition and rebuilding of a working church on the northern frontier of colonial Spain.

The convento revealed a more complex building history. After its original construction in the early 1620s, the building was extensively dismantled and rebuilt twice. After the second rebuild, it was remodeled again.

Gran Quivira produced a different set of surprises. Comparison of photographs taken in the 1880s and 1890s with the structure as it stands today showed that little rubble had fallen inside the church from its collapsing walls. This, taken together with evidence from archeology, historical documentation, and comparison with other missions, showed that the church of Gran Quivira had never been finished. In fact, because it was left unfinished, the building preserves a remarkable record of the Franciscan construction process. Gran Quivira is unique, being the only known example of an unfinished seventeenth-century Spanish colonial church on the northern frontier.

James Ivey also completed the San Antonio Missions Historic Structures Report with the help of Kristin Miller. The two then indexed the 1,030 page volume. This completed a long effort to produce the study, which will hopefully be published in FY 1988 or 1989.

Several Historic Structures Reports were completed in draft form during 1987. Laura Soulliere Harrison in collaboration with Histori-

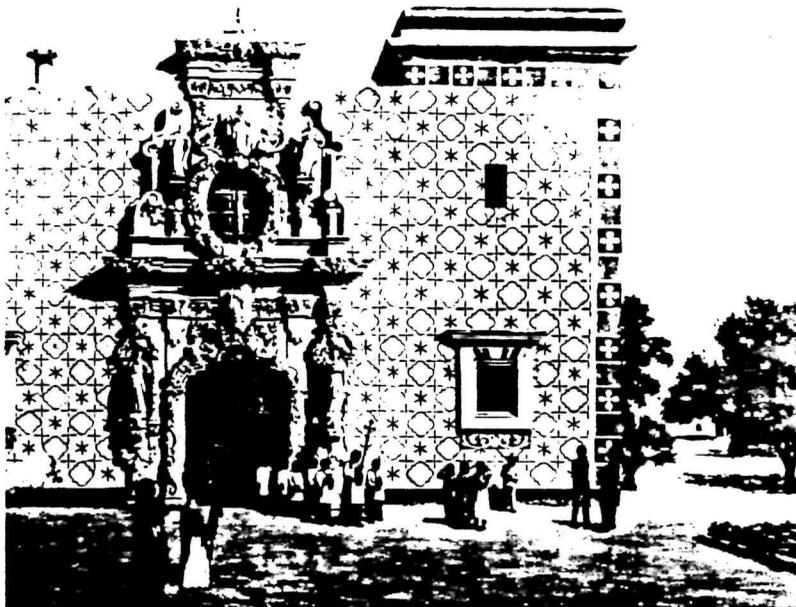


Figure 4.6 The San Antonio Missions Historic Structures Report was completed this year. James Ivey and Kristin Miller carried out the final revisions and indexing of the report. This photograph depicts San Jose mission church as it may have appeared in the 1780s.



Figure 4.7 During the 1920's Cozy McSparrow expanded the Trading Post and small ranch into a Dude Ranch. Actors and artists frequented his Thunderbird Ranch (shown here in 1940). Local Navajos obtained water from the ranch and bartered for supplies at the Trading Post.

cal Architect Beverley Spears have completed the Historic Structures Report for Thunderbird Lodge, the motel units, and the old Superintendent's Residence at Canyon de Chelly. Suzanne Rogers has a draft Historical Data Section of the Historic Structures Report for the Parker-Hickman Farmstead, the oldest cabin on the Buffalo River.

Other Historic Structures Reports that are ongoing include the following. Jim Mote of the Denver Service Center has a draft historical data section of the Historic Structures Report for all historic buildings at White Sands National Monument. Laura is also working with Randall Copeland and Roger Buck of the Denver Service Center on the complete Historic Structures Report for Bandelier National Monument. The draft should be complete by January 1988. Suzie Rogers also has an ongoing Historic Structures Report for Rush Ghost Town National Historic District, Buffalo National River. Denver Service Center is compiling the Historic Structures

Report of the Fordyce done by Historical Architect Randall Copeland and contractor Wilson Stiles, former Arkansas State Historic Preservation Officer.

Historic American Engineering Record Project at Hot Springs Bathhouses

Eric Delony of the Washington Office of the Historic American Engineering Record (HAER) and Robert Vogel of the Smithsonian Institution examined the mechanical equipment in the Bathhouses at Hot Springs National Park. They determined that the equipment was significant and worthy of documentation. Next,

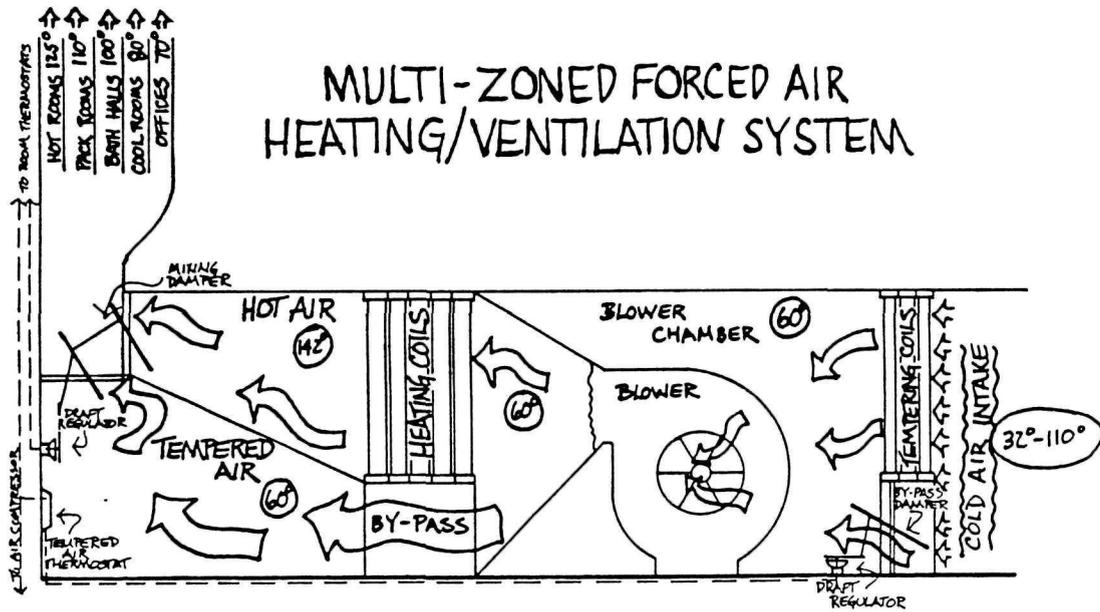


Figure 4.8 Diana Prideaux-Brune of the Historic American Engineer Record studied the development of the mechanical systems of the Hot Springs. The above drawing traces the complex flow of air through these different but similar systems.

Delony hired a historical architect with mechanical engineering expertise to draw schematic diagrams for the typical heating and ventilating systems and provide written description of these systems. Then, the systems would be completely photographically documented.

Administrative Histories

Regional Director John Cook has a strong commitment to perpetuating the institutional memory. He hardily endorses Administrative Histories for all parks. He has signed more than

three memoranda urging the programming, researching, and updating of park histories.

first chapter on Padre Island National Seashore. Meanwhile Park Historian Mary Williams of



Figure 4.9 The La Mesa fire in 1977 inspired innovations in resource management. Fire-fighting operations threatened archeological resources in the burn area. Archeologists and fire-fighters worked in concert to fight the fire without damaging subsurface remains. In this photo, archeologists precede bulldozers along the fire lines to identify archeological resources.

Soil Systems, Inc. of Phoenix, Arizona was awarded a contract to prepare an administrative history of Aztec Ruins National Monument. The principal investigators for the study are Dr. Robert and Florence Lister, who are well-known to many for their years of work with the Park Service and their fine publications dealing with Southwestern archeology. The administrative history is a 3-year project.

Hal Rothman completed his history of Bandelier National Monument. In it he covers in-depth the legislative history, the planning exercises, the integrated role of natural and cultural resource management, and the multiple threats to the park. Judy Fabry has completed four chapters on Guadalupe Mountains National Park's history, and Nancy Buford finished her

Fort Davis National Historic Site researched and collected oral histories for that park's definitive history. John Tiff, Park Historian at Lyndon B. Johnson National Historical Park, confronted stumbling blocks in attaining the former president's post-presidential papers. Since these papers are critical to understanding some of the most important years, that project may not be completed for several years.

Special History Studies

Laura Soulliere Harrison and Denver Service Center's John Paige have completed their Special History Study of Bathhouse Row at Hot Springs National Park. Because of its potential interest to visitors, Eastern National Park and

Monument Association has agreed to purchase some copies for sales items.

A major project to microfilm the State of New Mexico's records on two former state monuments was completed. The contractor documented, organized, listed, and microfilmed thousands of pages of reports, correspondence, and field notes for Abo and Quarai Units of Salinas National Monument.

Servicewide Study

Laura Soulliere Harrison presented to the Advisory Board her recommendations on the Architecture in the Parks National Historic Landmark Theme Study. Her presentation and professional justifications were so strong that all



Figure 4.10 Earlier this year the Secretary of the Interior designated Bandelier's CCC Historic District a National Historic Landmark. The National Park Service Branch of Plans and Design designed the entire district, shown here in a 1940 photograph, in the Pueblo Revival style.

The division contracted with Dr. Cheryl Foote for an oral history collection and an ethnohistory of the Hispanic reoccupation of the Salinas area. The primary informant is the oldest Park Ranger in the Service, Federico Sisenos.

Professor Robert Wooster of Futurepast successfully bid for the History of Fort Davis project. It is programmed for 3 years with a publishable book required at the end of the period. Dr. Wooster already has two books published on the Texas frontier military experience.

of her recommendations were accepted by the board. She also received comments from individual board members that her presentation was one of the best that the board had heard.

Division of History Publications

The Division of History assisted in the printing of several studies. The Fort Smith Commissary Historic Structures Report received its last corrections and editorial changes late in 1987. The Denver Service Center printed and

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distributed the report. The archeological base maps for the Fort Davis Historic Resources Study were revised and corrected, reprinted, and sent to Fort Davis to be inserted in the volumes for distribution. Roger Coleman of Fort Smith wrote The Arkansas Post Story, which Eastern National Park and Monument Association will sale. Dwight Pitcaithley prepared a similar history of the Buffalo River area, Let the River Be, which will also be sold by Eastern National.

The most impressive achievement was Arthur Gomez' winning the Charles Redd Center prize for the best manuscript on the Rocky Mountain West for 1987. Brigham Young University Press will publish the book in 1988 or 1989.

Buried for 25 years was former Regional Historian William Brown's history of the Santa Fe Trail. Suddenly, San Patrice Press offered to publish the work with editorial updating by trail expert, Marc Simmons. The division collected Brown's maps and a number of trail photographs for publication in 1989.

Melody Webb wrote two articles on National Park Service topics. The Public Historian published her "Cultural Landscapes in the National Park Service" in its Spring 1987 issue. An upcoming issue of CRM Bulletin will carry her article, "Commercial Publication of National Park Service Historical Research."

EMPLOYEE DEVELOPMENT

A major thrust of the division has been to provide new and varied experiences to its employees.

Diane Jung participated in the Society for Historical Archeology Annual Meetings in January and presented a paper entitled "Evaluating Historic Trail Significance: the Emigrant Trail and Butterfield Stage Route in

Guadalupe Mountains National Park" at the symposium on evaluating historic site significance.

James Ivey gave three papers at the 1987 Grand Quivira Conference and won the award for the best speaker. The papers related to his research for the Historic Structures Report of Salinas National Monument. Jake also participated on a panel discussion about Fort Union National Monument at the Historical Society of New Mexico's annual meeting.

Melody Webb served her final year on the Western History Association's Nominating Committee and Program Committee. She also chaired a session on American Indian Art at its annual meeting.

The International Council on Monuments and Sites (ICOMOS) 8th General Assembly and International Symposium accepted for publication Diane's and Jake's papers. Diane's topic, "Partnership in Preservation: Historic Property Leasing in Hot Springs National Park," addressed one of the symposium's subthemes, "managing monuments as a national resource." Jake compared the Spanish Colonial Franciscan Missions of the American Southwest. He is one of the few scholars that has expertise in more than one state.

A former unit manager, curator, and interpreter, Diane Jung returned to the field during the month of October to serve as Acting Superintendent at Fort Smith National Historic Site. Although this was Diane's second detail to a superintendency (she served for 120 days at Salem Maritime National Historic Site in 1983), she reported that an extended stay in the field was a welcome change--particularly because the resource and the visitor are both so close at hand.

Meanwhile Jake slaved away in academia. He completed three courses: Spanish Paleography, Seminar on the American Southwest, and Seminar on Colonial Latin America.

Melody reviewed four books for four professional journals. In addition, she serves on two Regional committees: Handicapped Access

and Equal Employment Opportunity. Diane, however, outranks her in the latter committee--she serves as Chair.

SECTION FIVE

SUBMERGED CULTURAL RESOURCES UNIT

This unit is unique in the Center due to its Servicewide responsibilities. The primary mission of the team is to conduct management-oriented research on underwater archeological sites in the National Park System, and to provide park managers with diving/training support services. Team members conduct operations in park areas that are designed to address the full range of submerged cultural resources management concerns, from basic inventory and evaluation to compliance and protection. The Southwest Region Diving Officer and the Blasting Officer functions also presently reside in this unit. The unit is composed of three Underwater Archeologists, a Research Diving Technician, and a Secretary. Because it is the only underwater archeological team in the Federal Government, the mandate of the unit includes rendering assistance to the National Historic Landmark program and occasional consulting with other agencies and governments on a cost reimbursable basis.

The Submerged Cultural Resources Unit has taken a leadership role in the development of submerged cultural resources management models, including models for the nomination of shipwrecks to the National Register of Historic Places, and non-destructive documentation of underwater sites. The unit also initiated a program called "Project Sea Mark" through which Navy divers may concentrate their training activities on carrying out underwater historic preservation tasks in National Parks.

In 1987, the unit finalized the Submerged Cultural Resources Study of Isle Royale National Park. This major work on the shipwrecks and other submerged cultural resources of the park was printed and distributed through the Government Printing Office in May 1987.

An overview of field operations conducted and other services rendered by the unit in fy 1987 is presented below.

FIELD OPERATIONS

Glen Canyon National Recreation Area--Rocky Mountain Region

An evaluation of the present condition, rate of deterioration, and the potential for long-term preservation of the sternwheeler CHARLES H. SPENCER was completed. Documentation of the vessel, including photographs, video tape, and mapping was undertaken by SCRU with the assistance of other personnel from the Southwest Cultural Resources Center and park staff from Glen Canyon and Lake Mead. A report resulting from this field effort, "Submerged Cultural Resources Site Report: Charles H. Spencer's Mining Operation and Paddle Wheel Steamboat," has been completed and printed by the Government Printing Office.

Pictured Rocks National Recreation Area--Midwest Region

Following participation in a workshop on Management of Submerged Cultural Resources, sponsored by the Midwest Regional Office, a preliminary examination of selected shipwrecks was completed on lands adjacent to the park. The preliminary examination was undertaken to gain a better understanding of the nature and condition of shipwreck resources on State of Michigan Shipwreck Preserve lands in anticipation of a cooperative protection agreement between the state and the park and to provide the park additional information for their interpretive programs.

War In The Pacific National Historical Park--Western Region

A sampling survey of Asan Invasion Beach from the shoreline to 1/4 mile offshore was completed. A team of park divers and VIP divers swam contours, completing a 60% visual examination of the bottom. While very little war materiel was observed, with the exception of the remains of an amphtrack, a considerable amount of unexploded ordnance was recorded. The latter was video taped and locations provided to EOD personnel and ordnance identification experts.

USS ARIZONA Memorial and Pearl Harbor National Historic Landmark--Western Region

SCRU personnel, in conjunction with US Navy Reserve Units, completed mapping operations on USS UTAH. In addition a mooring chain survey of USS ARIZONA for an engineering safety study was completed. A reconnaissance of Kalaupapa NHP on Molokai was also conducted with the assistance of the Navy during this field session.

Golden Gate National Recreation area--Western Region

Unit personnel, in association with the Service Maritime Historian and a local Navy Reserves detachment, conducted archeological reconnaissance dives in the area of Fort Point, Tennessee Cove, and Alcatraz. This was done to initiate a long term relationship between the park and the Navy Reserve diving community in the San Francisco area. As a result of this project the Navy has indicated a willingness to devote

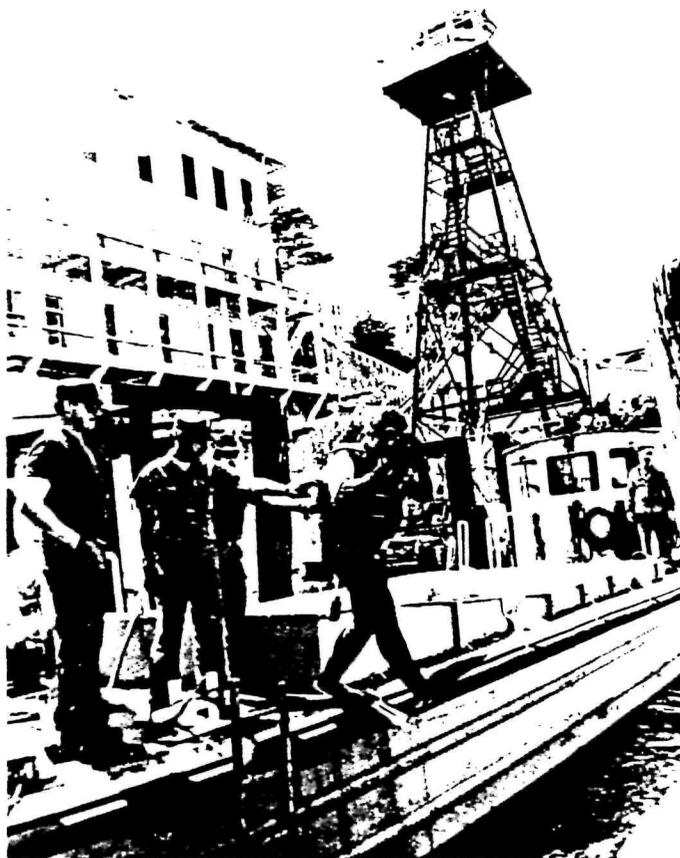


Figure 5.1 Project Sea Mark is an agreement whereby the U.S. Navy works with NPS on Historic Preservation related tasks as part of its training mission for reserve divers. NPS diver Jim Delgado enters water at Alcatraz Island during 1987 research activities.

50% of their active duty training weekends to tasks identified by the park Superintendent.

Cape Cod National Seashore--North Atlantic Region

A 3-week project was conducted in September to begin the assessment of the park's submerged cultural resources. The project was a

reconnaissance level evaluation of known sites and conditions for future remote sensing survey. A team of US Navy reserve Mobile Diving and Salvage Divers participated during a 10-day portion of the survey. Park and U.S. Navy divers were deployed on known shipwreck sites and on anomaly areas delineated by magnetometer operations. Offshore sites and wrecks in Provincetown harbor were documented. Two new wrecksites were located during the magnetometer operations and were also documented and added to the park's inventory.

Fire Island National Seashore--North Atlantic Region

A 1-week survey was conducted to evaluate the conditions for remote sensing and diving field operations within the park. Two known sites were visited and a magnetometer run was done up and down the length of the island.

Biscayne National Park--Southeast Region

A 1-week evaluation of a wrecksite damaged by a ship grounding on Ledbury Reef in Biscayne National Park was conducted in July. The site was determined to be a post-Civil War sailing vessel that was carrying a load of construction materials, including more than 75 barrels of Portland Cement. The site is being considered for an interpretive trail. Funding for the project was from a fine levied by the State of Florida against the vessel that ran aground on the reef.

CONSULTING SERVICES TO OTHER AGENCIES

US NAVY--US Navy Reserve Units, under the direction of SCRU Archeologists, participated in the documentation of KIZUGAWA MARU, a WWII water tanker sunk in Apra Harbor. The Reserve Units activities in Guam met their active duty training requirements while providing historic preservation assistance to the Government of Guam.

GOVERNMENT OF GUAM--At the request of the Government of Guam, a training course in underwater archeological techniques was conducted for SHPO representatives of several Micronesian islands including Guam, Palau, Kusaie (Kosrae), Rota, and Saipan. The

course was conducted in association with the Guam Office of Historic Preservation. The focus of the field work portion of the course was the documentation of ARATAMA MARU. Assistance was also provided in the completion of a National Register of Historic Places nomination form for this WWII transport.

ROTA--At the request of the representative of the SHPO of Rota, Toni Carrell and Ken Vrana, examined the remains of SHOUN MARU, and two unidentified wrecks in Sasan-haya Bay. Following reconnaissance, the unidentified wrecks were determined to be Auxiliary Submarine Chasers sunk on June 15 and 17, 1944 by TF 58 aircraft. All sites were photographed and videotaped.

PALAU--At the request of the representative of the SHPO of Palau, Ken Vrana visited Palau and videotaped several WWII shipwreck sites. This reconnaissance trip provided basic information on water conditions and site integrity in anticipation of future assistance and assessment work for the Historic Preservation Office.

COLUMBIA RIVER MARITIME MUSEUM--Dan Lenihan, in association with Larry Nordby from the Center and James P. Delgado, Service Maritime Historian, documented the remains of the Hudson Bay Co. resupply ship ISABELLA on the Columbia River bar off the coast of Oregon. This was done at the request of the Pacific Northwest Regional Director and the entire operation was coordinated by Regional Archeologist Jim Thompson. A newly developed underwater computerized mapping system was used effectively during this project.

BERMUDA MARITIME MUSEUM--Larry Murphy rendered assistance to the Bermuda Maritime Museum by helping train members of an Earthwatch project, led by R.A. Gould, in shipwreck mapping, which was used to document the ironclad HMS VIXEN.

STATE OF MARYLAND--Larry Murphy participated in a project in Maryland in conjunction with the National Geographic Society that



Figure 5.2 Participants in training course in submerged cultural resources survey taught in Guam in May 1987. SCRU personnel are in uniform in top row. Representatives from four former Trust territories in Micronesia attended the session.



Figure 5.3 Dan Lenihan taking compass bearing on survey line on ARATAMA MARU in Talafofo Bay, Guam. This shipwreck site was mapped as a part of a training course conducted in cooperation with the Government of Guam.

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Gould, in shipwreck mapping, which was used to document the ironclad HMS VIXEN.

STATE OF MARYLAND--Larry Murphy participated in a project in Maryland in conjun-

tion with the National Geographic Society that tested remote sensing instrument profiles for documenting shipwrecks in very low visibility conditions.

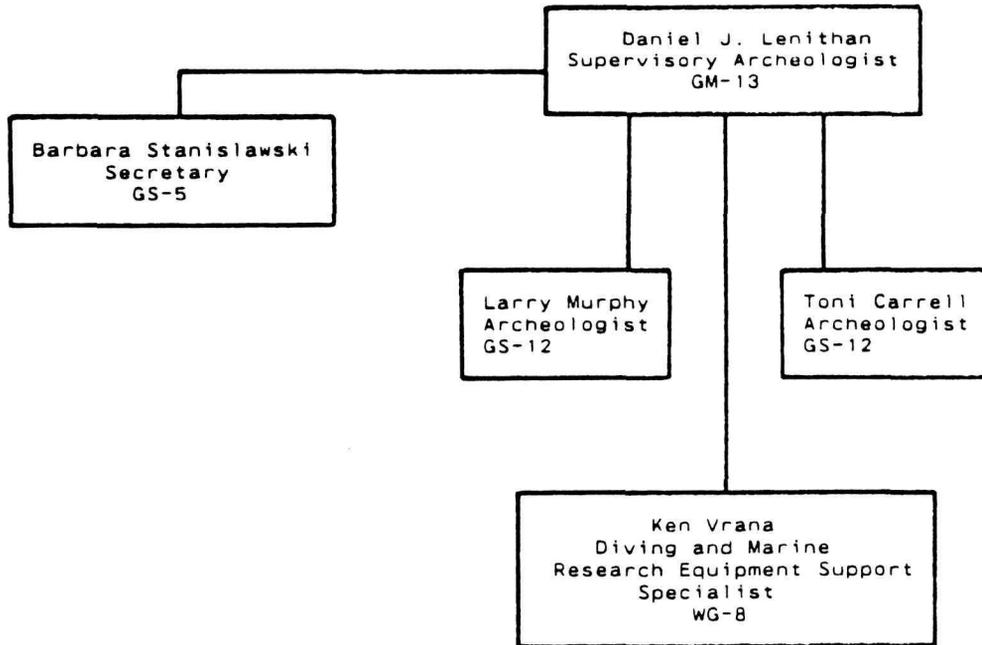


Figure 5.4 Organization of the Submerged Cultural Resources Unit.

APPENDIX A

EMPLOYEES OF THE SOUTHWEST CULTURAL RESOURCES CENTER

NAME	TITLE	ORGAN. UNIT
Anderson, Bruce	Supervisory Archeologist	PBC
Bengston, Sue	Clerk/Typist (Budget)	PCR
Bradford, Jim	Archeologist	PCA
Carrell, Toni	Archeologist	PCS
Colby, Cahterine	Historical Architect	PCC
Crosby, Tony	Historical Architect	PCC
Curran, Antoinette	Secretary (Typing)	PBC
Fierabend, Carey	Historical Architect	PCC
Harrison, Laura Soulliere	Research Historian	PCH
Ice, Ron	Chief (Supervisory Archeologist)	PCA
Ireland, Art	Archeologist (Remote Sensing)	PBC
Ivey, Jake	Historical Archeologist	PCH
Lenihan, Dan	Chief (Supervisory Archeologist)	PCS

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Livingston, Jerry	Scientific Illustrator	PBC
McKenna, Peter	Archeologist	PCA
Martinez, Ernesto	Engineering Draftsman	PBC
Mathien, Frances Joan	Archeologist	PBC
Miles, Judy	Archeologist	PBC
Montano, Anthony	Clerk	PBC
Morgart, Terry	Preservation Specialist (Restoration)	PBC
Moya, Stella	Secretary (Typing)	PCH
Murphy, Larry	Archeologist	PCS
Nez, Ernest	Masonry Worker	PCC
Nordby, Larry	Chief (Supervisory Archeologist)	PBC
Ortiz, Jo Ann	Secretary (Typing)	PCR
Ortiz, Rose	Secretary (Typing)	PCA
Panowski, Bruce	Archeologist/Editor	PBC
Powers, Bob	Archeologist (Joint Management Plan)	PBC
Rancier, Jim	Archeologist	PCA
Romero, Christina	Secretary (Typing)	PCC
Sellers, Richard	Chief (Supervisory Historian)	PCR
Snow, David	Historical Architect	PCC
Spears, Beverly	Historical Architect	PCC
Sulam, Barry	Chief (Supervisory Hist. Architect)	PCC
Travis, Scott	Archeologist	PCA
Trimmer, Ethel	Architectural Technician	PCC

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Trott, Jim	Archeologist (Ruins Stabilization)	PCC
Tsosie, Eugene	Maintenance Mechanic	PCC
Ulibarri, Sohpia	Student Aid	PBC
Wait, Walter	Archeologist	PCA
Webb, Melody	Chief (Supervisory Historian)	PCH
Windes, Tom	Supervisory Archeologist	PBC

APPENDIX B

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