ANNUAL REPORT
OF THE
SOUTHWEST CULTURAL RESOURCES CENTER

HISTORY • CONSERVATION • ANTHROPOLOGY
SUBMERGED CULTURAL RESOURCES
FISCAL YEAR 1985
ANNUAL REPORT OF THE
SOUTHWEST CULTURAL RESOURCES CENTER
FY 1985

Submitted by

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National Park Service

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INTRODUCTION

The Southwest Cultural Resources Center is a unique organization within the National Park Service. This uniqueness stems from multiple perspectives that combine the cultural resource management disciplines under a single umbrella organization. Thus, professionals in the areas of anthropology, historical architecture, and history interact freely in a holistic program that blends diverse professional views on cultural resource management issues and special projects. Elsewhere in the Service, the presence of archeological centers, generally located on university campuses that are physically removed from the remainder of the regional office, tends to isolate archeologists from their comrades in the related areas of cultural resource management.

As depicted in Figure 1, the staff in the Center is divided into four major organizational units. Three of these are found in each regional office in the Service: the Divisions of History, Conservation, and Anthropology. The Submerged Cultural Resources Unit, the Servicewide underwater archeological program, comprises the fourth unit. Depending on the intra-divisional staffing requirements, nature, and scope of programs at the divisional level, each may have its own internal less formal, organizational structure. Expertise regarding cultural resource management issues is rendered either to the Regional Directorate through the Associate Regional Director, Planning and Cultural Resources, or directly to area Superintendents and their staffs.

The major sections that follow each detail the organization, mission, and accomplishments of the individual divisions within the Center. Although the report is divided based on disciplines, interaction between groups is the strength of centerwide organization, with employees frequently working 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 "home" division.
DIVISION OF CONSERVATION (PCC)

The mission of this division is to provide a wide array of preservation services for historical and archeological structures throughout the Southwest Region. These services range from preservation project design and implementation to preservation and documentary research of various types, with this work divided into several functional components: (1) administrative support, (2) research work, (3) project design, and (4) field project implementation. Linkages between these components are often variable and complex.

Overview of Administrative Support

Staffing changes within the division during the past fiscal year created a number of challenges that were addressed through a combination of rotating assignments and temporary details. The greatest impact was the departure of Division Chief David G. Battle, who transferred to the Denver Service Center after completing the design work for the new Fogelson Visitor Center at Pecos National Monument. This left the Chief's position vacant for about 10 months, a situation that was resolved in June with selection of Barry Sulam as the new Regional Historical Architect and Division Chief.

Projects that had been backlogged from previous years, along with the involvement of Barry Sulam as manager of the division's programs rather than to carry out Staff Architect duties combined to demand some operational modifications. For example, agreements with the Denver Service Center (DSC) and architectural and engineering (A&E) contractors provided the professional services necessary for project research and design. Similarly, the Small Business Administration's minority contractors program supplied extra help in executing several re-roofing projects.


The responsibility for administering the Region's ruins stabilization program was transferred to the division from the division of Anthropology, which underwent a reorganization during the fiscal year. The association of this function with the division is still in the formative stage and Supervisory Exhibit Specialist Doug Hicks will head up this effort. To acquire the specialized archeological expertise necessary in dealing with the many puebloan ruins scattered across the face of the Southwest Region, the division requested the reassignment of Archeologist James Trott from Salinas National Monument, to
Figure 1. Generalized organization of the divisions of the Southwest Cultural Resources Center.
provide stabilization project design. J. Terry Morgart, Exhibit Specialist, is responsible for stabilization project execution.

Also added to the responsibilities of the division are activities that emanate from new Servicewide thrusts: (1) development of a prototypical Maintenance Management System (MMS) and Historic Structure Preservation Guide (HSPG), (2) Leasing Technical Assistance, and (3) structural engineering monitoring. In order to staff the vacant positions for managing these programs, an announcement was issued. Two historical architects, Anthony Crosby and Randy Copeland, have expressed their interests in lateral transfers into these positions, with completion of the personnel actions expected in FY 86.

The division's vacant Clerk-Typist position was filled during FY 1985 by Edwina Abreu, who joins Christina Romero and Sue Bengtson as administrative support staff. The entire staff of the division is shown in Figure 2.

Research Work

The Southwest Region was selected by WASO as one of four participant regions for a pilot project to update and enhance the List of Classified Structures. Within this Region, nine park areas were selected for application of the updating process. Currently, the study involves Historical Architect Vitanza as well as two employees from other units of the Center.

The preparation of Historic Structures Reports (HSR's) is an important element of conservation research. HSR work progressed as follows for a number of buildings and parks:

The HSR for the Southwest Region's Main Office Building on Old Santa Fe Trail, done in conjunction with GSA, was released. Authors for the document were Marlys Bush Thurber and Steven Burke, who produced a special mini-HSR that was subsequently approved.

The HSR for San Antonio Missions (SAAN) was placed on review this year and graphics will be added during FY 1986.

Printing will follow as soon as funds are available.

A special HSR, entitled Texas Hill Country by Ed Bearss was produced for Lyndon B. Johnson, and the final sections for the companion volume, Texas White House will be printed during FY 1986.

Craig Frazier completed his draft HSR on the commissary at FOSM, and DSC released it for review.
Figure 2. Organization of the Division of Conservation.
Most of the architectural data section of the HSR on the Bandelier CCC buildings was completed by Laura S. Harrison. Finalizing this document is among the FY 1986 responsibilities of DSC Architect Randy Copeland.

Historic structure preservation guides comprise a second major conservation research thrust. Craig Frazier and Tony Crosby initiated HSPG's for five parks in the Southwest Region: Fort Davis, Hot Springs, Hubbell Trading Post, Salinas, and Lyndon B. Johnson. Work on all these documents continues during FY 86.

Under contract, Dr. Harrison Goodall of Conservation Services continued to study the deterioration of exposed viga ends common in Southwestern construction styles. Specific examinations included all the CCC buildings at BAND, the main office building of SWRO, and the visitor center at WHSA. References for these projects and others completed during FY 85 are given in Table 1.

Division staff members monitored Historic American Buildings Survey (HABS) field work at three park areas. HABS projects have been viewed not simply as opportunity for recording historic structures but also as a chance to accomplish a number of other preservation goals simultaneously through one cost-effective undertaking. The three areas affected are SALI, Big Bend, and Hubbell Trading Post; a summary of the work follows:

Salinas. The HABS team used state-of-the-art measuring and plotting equipment to accurately record the church and Convento complex at the Abo Unit. Ultimately, the project resulted in several modifications to the ground plan.

Big Bend, Hubbell Trading Post. In both cases, HABS teams produced preliminary drawings that were later used by the Division for planning the structural stabilization of buildings in the Castolon Historic District and Terlingua, Texas (Big Bend), as well as the gazebo, hogans, the visitor center, and irrigation system at Hubbell Trading Post. (Figure 6).

Finally, during FY 85, WASO-based HABS staff annotated the drawings documenting the previous year's preservation work at SAAN.

Project Design

This component of divisional activity generally consists of producing construction drawings and developing specifications for projects done both internally with day labor, or by external contractors. Often, while designing projects, there is substantial overlap, a blending of in-house and external skills.
<table>
<thead>
<tr>
<th>PARK</th>
<th>SUBJECT OF ENGINEERING REPORT</th>
<th>AUTHOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Springs</td>
<td>Investigative Study of Six Vacant Bath Houses</td>
<td>Pitts and Associates</td>
</tr>
<tr>
<td>Bandelier</td>
<td>Investigation of CCC Buildings, Package 224</td>
<td>Harrison Goodall, Jana Chalk, and Randy Copeland</td>
</tr>
<tr>
<td>Jean Lafitte</td>
<td>The Chalmette Cemetery Wall, Fort Proctor, Proposed Visitor Center</td>
<td>Todd Rutenbeck, Barry Sulam, and J. Terry Morgart</td>
</tr>
<tr>
<td>San Antonio</td>
<td>Old Classroom at Espada Mission</td>
<td>Maury Paul and Todd Rutenbeck</td>
</tr>
<tr>
<td>Big Bend</td>
<td>Engineering Calculations for Existing Roof Systems</td>
<td>Barry Welton</td>
</tr>
<tr>
<td>White Sands</td>
<td>Rehabilitation and Restoration of Roofing Systems at the Pratt Residence</td>
<td>White and Associates</td>
</tr>
<tr>
<td>Gudalupe Mountains</td>
<td>Corrals and Sheds Complex, Bread Oven and HB5, the Stabilization of HB-5, Roofing Systems of HB-12 and HB-13</td>
<td>Harrison Goodall, James Ivey, and Metron Associates</td>
</tr>
<tr>
<td>Hubbell Trading Post</td>
<td>Structural Monitoring Summary</td>
<td>Todd Rutenbeck</td>
</tr>
</tbody>
</table>
Figure 3. Drawings like this one by artist J. E. Johnson embellish the HABS survey of HUTR buildings.

Figure 4. Junction Ruin (CACH) was stabilized under a contract administered by PCC staff.
Figure 5. An adobe brick veneer was emplaced at La Casita (BIBE) by the PCC preservation crew.

Figure 6. This smelter at Rush (BUFF) was stabilized through repointing.
Work at Big Bend centered around in-house preparation of stabilization designs for four historic structures: La Casita, the Garlick House, the Alvino House, and the Daniels Ranch. The design for La Casita was completed, and the division secured funding sufficient to successfully develop a stabile adobe material, a process that enabled us to begin the preservation work on the structures. Developing a durable stabilization adobe for use as mortar or bricks is an essential antecedent for stabilizing the remaining structures at Big Bend. The material that has thusfar been generated also is compatible with the historical appearance of these structures. The design staff also provided technical stabilization consultation to park staff on request, and initiated a set of construction documents for re-roofing Big Bend buildings using a Small Business Administration (SBA) Section 8A (minority) contractor.

For Buffalo River, the Southwest Cultural Resources Center design crew completed construction drawings and specifications for stabilization of three structures within the historic Rush Mining District. Technical preservation design assistance was provided for several other park projects, including the design of a passive ventilation system for two historic residences in the Boxley Valley. An evaluation of Boxley Valley architectural characteristics that should be preserved in order to maintain the historic integrity and context of the valley was also conducted, resulting in the modification of deed restrictions being prepared by the park for the lease-back, sell-back program.

The bread oven at Hubbell Trading Post (HB-7) was examined, resulting in design drawings and project specifications. Backfilling the oven chamber will eliminate the need to dismantle the unsound dry-laid brick vault, stabilizing it without impacting the historic fabric or structural integrity.

The Wallace E. Pratt Residence (Guadalupe Mountains) is a structure that received a blend of Service and private architectural expertise. Government employees inspected the building, produced preliminary design documents and drawings on the existing roofing plan, and set up and administered contracts with private architectural-and-engineering (A&E) firms for more detailed design work. These firms produced specifications used in stabilization and roof repair contracts ("Rehabilitation and Restoration of the Roofing System, Wallace E. Pratt Residence,") (Drawing Number 166/80008). The A&E firm also provided a cyclic maintenance plan, the National Register nomination form, and supporting research.

Private A&E firms also produced contract documents for work at Hubbell Trading Post:

Stabilization of the Bunkhouse (HB-5) (Drawing No. 433/80034).  
Re-roofing of Visitor Center and Comfort Station (HB-12 and HB-13) (Drawing No. 433/80032).
The visitor center roof required additional interior roof supports to supplement the existing vigas. A design for extra support consistent with the structure's existing architecture resulted.

Architects and engineers from the Denver Service Center contributed project designs that were coordinated by Divisional design architects. Projects are shown in Table 2.

The staff also provided various types of technical preservation support and design for park areas, often for smaller projects. Examples of this involvement include assistance in conducting site investigations and inspections, evaluating needs, and doing fabric studies such as paint or mortar analysis.

Several projects necessary to improve handicapped access were designed. They include the existing patio rest rooms at the Regional Office Main Building, as well as the access patio to the Great Kiva, its altar room, and front entry (AZRU). Other examples are the access to HB-21 at Fort Davis and visitor circulation for the visitor center (HB-12) and rest room structure (HB-13) at Hubbell Trading Post.

As projects are finished, completion reports chronicle the work that was done. "As-built" drawings show any design modifications, and were completed within the division for stabilization work at Big Bend. Denver Service Center staff is preparing as-built drawings for Fort Davis, Aztec Ruins, Bandelier, Jean Lafitte, Fort Smith, San Antonio, and former PRIP or Jobs Bill Projects. Ultimately, preparation of such drawings requires that on-going procedures include cataloging of such material and project photographs, which become part of the Division's archives. Occasionally, documents valuable for research surface, and must also be annexed into these archives. For example, during FY 85, a complete set of pencil-on-vellum working drawings for the Pratt Residence was discovered and must be conserved.

**Project Execution**

The Southwest Regional Preservation Crew carries out the most sensitive preservation projects in the Region. When appropriate, projects are executed by contractors, with oversight and contracting officer's technical representative functions provided by the Division's staff. The preservation crew completed 17 projects spread across 9 park areas during FY 85. The funding of preservation, restoration, and stabilization activities totalled approximately $490,500, with money provided through cultural cyclic maintenance (class 301), the Cultural Resources Preservation Fund (class 302), and private donations. In addition, the CCC administration complex at Bandelier was partially rehabilitated with $320,000 raised from private donations and 302 funds. Table 3 summarizes projects that were done with day-labor during FY
Table 2. Project Designs and Drawings
Prepared by DSC Personnel in Coordination
with PCC Design Architects

<table>
<thead>
<tr>
<th>PARK</th>
<th>PROJECT TITLE</th>
<th>DRAWING NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Antonio</td>
<td>Espada Mission: Stabilization of the Aqueduct</td>
<td>472/41001</td>
</tr>
<tr>
<td></td>
<td>Espada Mission: Stabilization of the Bastion</td>
<td>472/25006</td>
</tr>
<tr>
<td></td>
<td>Espada Mission: Stabilization of the Old Classroom</td>
<td>472/80061</td>
</tr>
<tr>
<td>Fort Davis</td>
<td>Restore North Squad Room and the Sergeant's Quarters (HB-21)</td>
<td>418/25006</td>
</tr>
<tr>
<td>Bandelier</td>
<td>Rehabilitate OCC Buildings (includes designs as follows):</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install Insulated Windows</td>
<td>315/41012</td>
</tr>
<tr>
<td></td>
<td>Replace Canales and Make</td>
<td>315/80030</td>
</tr>
<tr>
<td></td>
<td>Miscellaneous Roof Repairs</td>
<td></td>
</tr>
</tbody>
</table>
Table 3. Division of Conservation Projects Executed During FY 85 Using Day-Labor

<table>
<thead>
<tr>
<th>PARK</th>
<th>PROJECT TITLE</th>
<th>COMPLETION DATE</th>
<th>DOLLAR VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas Post</td>
<td>Re-point/Grout Cistern and Well</td>
<td>09/85</td>
<td>$2,470</td>
</tr>
<tr>
<td>Aztec Ruins</td>
<td>Re-roof Great Kiva and Complete Storm Drainage System</td>
<td>01/85</td>
<td>22,276</td>
</tr>
<tr>
<td>Big Bend</td>
<td>Rehabilitate Historic Structures (Alvino House, La Casita)</td>
<td>07/85</td>
<td>32,367</td>
</tr>
<tr>
<td>Buffalo</td>
<td>Stabilize Historic Structures (Rush Mining District Smelter, Store, and Barn); Stabilize Villines Chimney</td>
<td>09/85</td>
<td>33,733</td>
</tr>
<tr>
<td>Canyon de Chelly</td>
<td>Stabilize Junction Ruin</td>
<td>09/85</td>
<td>12,000</td>
</tr>
<tr>
<td>Fort Smith</td>
<td>Paint Barracks and Jail, Exterior and Interior</td>
<td>12/84</td>
<td>21,015</td>
</tr>
<tr>
<td>Hot Springs</td>
<td>Complete Fordyce Bathhouse Marquee</td>
<td>05/85</td>
<td>2,661</td>
</tr>
<tr>
<td>San Antonio</td>
<td>Repair, Re-point and Clean Aqueduct</td>
<td>04/85</td>
<td>17,793</td>
</tr>
<tr>
<td></td>
<td>Stabilize Old Classroom at Espada Mission</td>
<td></td>
<td>14,166</td>
</tr>
<tr>
<td></td>
<td>Convert Bastion to Contact Station at Espada Mission</td>
<td></td>
<td>52,066</td>
</tr>
<tr>
<td>Fort Davis</td>
<td>Restore North Squadroom and Sergeant's Quarters (HB-21)</td>
<td>04/85</td>
<td>60,000</td>
</tr>
<tr>
<td>Bandelier</td>
<td>Install Insulated Windows Replace Canales and Provide Miscellaneous Roof Repairs</td>
<td>On-going</td>
<td>320,000</td>
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### Table 4. Division of Conservation Project Completion Reports Prepared During 1985

<table>
<thead>
<tr>
<th>PARK</th>
<th>REPORT TITLE</th>
<th>YEARS OF PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canyon de Chelly</td>
<td>Stabilization of the Junction Ruin</td>
<td>1985</td>
</tr>
<tr>
<td>Jean Lafitte</td>
<td>Stabilization of the Beauregard House</td>
<td>1979–1980</td>
</tr>
<tr>
<td>Big Bend</td>
<td>Stabilization of La Casita and the Alvino Residence</td>
<td>1985</td>
</tr>
<tr>
<td>Buffalo</td>
<td>Stabilization of the Hickman House</td>
<td>1984</td>
</tr>
<tr>
<td>Aztec Ruins</td>
<td>Installation of Viga Ends at the Great Kiva and the Drainage for West Ruin</td>
<td>1985</td>
</tr>
<tr>
<td>Hubbell Trading Post</td>
<td>Stabilization of the West Wall of the Bunkhouse; Stabilization of the Sheds and Corrals; Repair of the Visitor's Center Parapet; Repair of the Barn Roof</td>
<td>1984</td>
</tr>
</tbody>
</table>
### Table 5. Park Rehabilitation and Improvement Project (PRIP) Tasks and Dollar Volumes during FY 1985

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Dollar Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repainting</td>
<td>$ 59,000</td>
</tr>
<tr>
<td>Reroofing</td>
<td>$156,100</td>
</tr>
<tr>
<td>Structural Repairs</td>
<td>$123,800</td>
</tr>
<tr>
<td>Stabilize Ruins</td>
<td>$217,100</td>
</tr>
<tr>
<td>Object Preservation</td>
<td>$ 52,800</td>
</tr>
<tr>
<td>Preservation of Historic Sites</td>
<td>$ 10,000</td>
</tr>
<tr>
<td>Monument Cleaning</td>
<td>$ 50,600</td>
</tr>
<tr>
<td>Misc. (including Proj. Mgt)</td>
<td><strong>$191,300</strong></td>
</tr>
<tr>
<td>Total</td>
<td><strong>$861,400</strong></td>
</tr>
</tbody>
</table>

Other Allotments included

- DSC: MMS/HSPG & Design and                 | $152,000      |
- WASO: HABS Teams                           |               |

Total other allotments included               | **$1,013,400**|
85. Completion reports for several projects were also written; these are listed in Table 4.

**Formal contracts administered by the preservation crew include the following:**

- **Hubbell Trading Post** (Re-roof HB-5, HB-12, and HB-13; Install Fire suppression equipment in the barn and visitor center)
- **Bandelier** (Replace canales, repair roof and gas line leaks)

**PCC staff members also collaborated in training given to park preservation specialists and maintenance personnel, as follows:**

- **BAND** Stabilize wood, using epoxy in May 1985.
- **CACA** Repair stone masonry in June 1985.
- **SAAN** Re-point mission walls in September 1985.
The staff of the Division of History had a full and satisfying year. Staffed as shown in Figure 7, the division actively pursued its dual mission of ensuring adequate research for proper management of historic resources and encouraging park managers, planners, and others to comply with preservation laws and guidelines in protection of the resources. The introduction of computers improved efficiency. The responsibility for professional support of the Historic Property Leasing Program and the enhancement of the List of Classified Sites, however, led to unexpected workloads. On the other hand, most of the research, with the exception of the contracts for National Register forms, had been planned in advance.

Automated Office Activities

The use of a centralized computer system has radically changed office procedures in the Division of History. Staff members prepare rough drafts of reports, memoranda, trip reports, and correspondence on their terminals and transmit them to the secretary for final editing and formatting. Time spent on revisions and re-typing are minimized. In addition, an accounting program, COMPUCALC, helps keep close tabs on the base funding and project accounts. Its use greatly improves budget planning for the fiscal year. The secretary uses a data base management program, ORACLE, to tabulate information, such as Lists of Classified Structures and bibliographies. As a result, the computer system has reduced repetitious typing, increased productive work, and improved the division's budget and time controls.

Cultural Resource Management Activities

These activities span a broad range of enterprises that are described in the paragraphs that follow:

Compliance

The Southwest Region enjoys one of the best compliance records in the Service (Figure 8). Superintendents are generally conscientious in ensuring that each undertaking has Section 106 compliance. Park areas with concessioners in historic buildings have twice the responsibility and often three times the work to ensure that compliance is met. Assessment of Effect (XXX) forms (Figure 9) are used for compliance, documentation of changes, and feedback training between park staffs and Regional cultural resources specialists.
Figure 7. Organization of the Division of History
Figure 8. Number of Assessment of Effect (XXX) Forms done in each region during FY 85.
Figure 9. Increase in the use of XXX forms over the past five fiscal years.
Planning

The Division of History has played a large role in the planning process. Along with other Regional Office personnel, Melody Webb worked on the inter-regional Trail of Tears feasibility study. She also supported the Service's first Cultural Landscape Plan for Buffalo's Boxley Valley. Diane Jung, meanwhile, worked with park staff and planner David Gaines on FOSM's complex Landscape Plan. The Division's staff served as team members or consultants on the following plans this year: Rush and Erbie plans (Buffalo), Jean Lafitte amendment to its General Management Plan (GMP), GMP's for Fort Smith and Hot Springs.

Historic Property Leasing Program

The Southwest Region has consistently been at the forefront of this Servicewide program. To date, it has exceeded the other regions in the number of executed leases and ranks second in the dollar volume of revenue produced (Figure 10). Servicewide, the most ambitious leasing action is underway at Hot Springs. Five historic bathhouses such as the one shown in Figure 11 were offered for lease in July, and 19 proposals were received from the private sector. Interest in the Hot Springs leasing program has been widespread, including national media coverage, strong local support, and attention from the Arkansas Congressional delegation.

List of Classified Structures (LCS)/Cultural Resources Management Bibliography (CRBIB) Update and Enhancement Project

The Southwest Region is one of four regions selected to participate in this project. The ultimate goals are to improve the quality and utility of information in the LCS and CRBIB, to make these lists readily available to parks and regional offices, and to give parks and regions the capability to enter information directly to the lists. To date, new entries from eight parks have been added to the LCS in the region's ORACLE database.

Policy Review of Major Cultural Resources Management Document

The Division of History coordinated policy review of the Cultural Resources Management Guidelines (NPS-28). Among major concerns were: deletion of the chapter on Section 106 compliance, adding a requirement for Regional Resources Management Plan with an emphasis on themes, and the use of sampling and predictive modeling as a replacement for in field archeological surveys. Other major policy documents reviewed were the Cultural Sites Inventory, Resources Protection Planning Process, and prototype Regional Resources Management Plan.
Figure 10. Historic property leasing summary for FY 85.

Region, in order of leasing revenue. * Indicates value of lessee's rehabilitation work.
Figure 11. The Quapaw Bathhouse, one of five historic structures at HOSP offered for lease in the Service's most ambitious historic property leasing project to date.
Training

In an effort to expand expertise in the area of CRM, the Division worked cooperatively with the Division of National Resources Management to provide CRM training to one of the Natural Resource Specialist Trainees in the region. In addition, a major proposal for a formal CRM trainee program was forwarded to the Regional Director.

Erosional Control, Old Santa Fe Trail, Fort Union National Monument

Among the preservation projects this year was the control of the erosion that threatened the integrity of traces of the Santa Fe Trail at Fort Union. Conceived as a 2-year project including 1 year for study and project design and a second year for implementation, the entire project was accomplished during FY 1985. The work involved the addition of earthen water diversion structures, and the grading, mulching and seeding of slopes. The project was accomplished through the cooperative efforts of the Regional Divisions of History and Natural Resource Management, the park staff, and the Soil Conservation Service.

Maintenance Management Systems (MMS)

Because the Division of Conservation has been understaffed for the last 2 years, Melody Webb has served as project manager for MMS. Two historical architects from DSC have completed inspection forms for Salinas, Fort Davis, Lyndon B. Johnson, and Hot Springs. Because of computer software problems, however, the important maintenance task lists and scheduling functions could not be completed during FY 85. To assist the Regional Leasing Coordinator, Denver Service Center developed draft Preservation Guides for each bathhouse to be leased at Hot Springs.

Research Activities

Historic Structures Reports (HSR's)

For Salinas, James Ivey is preparing the Historic Structures Report on Quarai Mission and Pueblo. During his research, Ivey found previously unpublished maps, photographs, and documents which add significant new information to the structural history of the Church and Convento (Figure 12 and 13). The preliminary draft will be finished by the end of CY 1985. The final report, covering all three units of Salinas, will be complete by the end of FY 1987.

At Buffalo, Suzie Rogers, has completed draft HSR's for the Hickman Farmstead and Rush Ghost Town. Other HSRs in preparation are for the headquarters complex at Bandelier commissary at Fort Smith, missions and acequias at San Antonio, and several buildings at Hubbell Trading Post.
Figure 12. The interior of the church at Quarai (SALI), in 1890. Note the height of the wall at left.
Figure 13. The interior of the church at Quarai in 1985. The wall at left collapsed about 1912. Stabilization work done since 1934 produced most of the other changes in the church's condition that are apparent if this photo is compared with Figure 12.
Historic Resource Studies (HSRs)

Arthur Gomez has completed the Historic Resources Study of Big Bend. This major study examines the history of the park from the Spanish Colonial period to the CCC. Two university presses have expressed interest in publishing it. The Denver Service Center is working on studies of Fort Davis, and is printing the study for Chalmette (Jean Lafitte). Also at Jean Lafitte, Barbara Holmes' HRS for Barataria, written in 1984, has been edited and is nearly ready for printing.

Historic Landscape Studies

The largest landscape study is the Hubbell Trading Post Farmland Study, funded by SPMA, and written by Charles Peterson of Utah State University, a leading agricultural historian. Other landscape studies include Fort Smith, completed in 1985 and being used on the on-going Landscape Plan, and Lyndon B. Johnson, authored by a student at Texas A&M under the direction of Dr. Dennis Penn at the CPSU.

Administrative Histories

The Bandelier Superintendent found funding for an administrative history, which will trace the legislative history and the development of major issues, such as ruins stabilization, back country use, and Cochiti Dam. Another administrative history focusing on Padre Island is underway at Texas A&M, under the coordination of CPSU Director, Dennis Penn.

National Register Forms and LCS Forms

The Division of History contracted with a number of specialists to complete National Register and LCS forms. By the end of next year, the National Register forms for the following parks should be complete: Salinas, Hubbell Trading Post, San Antonio, Canyon de Chelly (concessioner area) Guadalupe Mountains (Emigrant Trail), Carlsbad Caverns, Bandelier, White Sands (various historic buildings) and Buffalo (Rush Ghost Town, Boxley Valley, and Hickman Farmstead). At the same time, Salinas and the historic structures at White Sands and Carlsbad Caverns will have LCS documentation simultaneously developed.

Special History Studies

This category includes studies the Division conducted by special request or to meet special needs of individual parks. For example, James Ivey carried out a study of two Spanish presidios near Big Bend. He evaluated the two sites for archeological and interpretive potential as part of a possible cooperative
Figure 14. As part of the National Historic Landmark Theme study of Architecture in the Parks, Laura S. Harrison is evaluating structures such as Old Faithful Inn for their national architectural significance.
project between the United States and Mexico. The report will be published with limited circulation during FY 86.

Other on-going special studies are (1) an oral history project and a study of ranching at Lyndon B. Johnson, (2) the history and archeology of Arkansas Post, (3) a photogrammetric analysis of the inscriptions at El Morro, and (4) the cultural and geographic features of Jean Lafitte's the Battle of New Orleans.

Servicewide Study

The Washington Office asked Laura Souliere Harrison, the Nation's expert on rustic architecture, to complete a National Historic Landmark Theme Study on Architecture in the Parks. She has 7 out of 31 landmark forms completed, including Bandelier, Hot Springs, and the Main Office Building in Santa Fe. Other forms deal with structures outside of the Southwest Region (Figure 14). She will give her recommendations to the Advisory Board on Historic Preservation in May 1986.
DIVISION OF ANTHROPOLOGY

Centerwide, a major event of FY 1985 was the transfer of multi-year archeological research functions from the division of Cultural Research (or "Chaco Center") to the Division of Anthropology, constituting a major reorganization late in the fiscal year. The elements of the reorganization, recommended by a task force that examined archeological programs, are as follows:

1. The Division of Cultural Research became the Branch of Cultural Research (PBC), within the Division of Anthropology;
2. A new Branch of Cultural Resources Management (PCRM) was instituted to continue the Division of Anthropology's prior functions;
3. A new Branch of Collections was created but left unstaffed because of funding and personnel limitations;
4. The old Branch of Remote Sensing, previously subsumed under the Division of Cultural Research, was abolished, but its functions were folded into the Branch of Cultural Research.

These changes are reflected in Figure 15.

Consequently, this division now provides a broad spectrum of anthropological and archeological services to parks of the Southwest Region. Usually, this mission involves the preservation of archeological site integrity or data while simultaneously facilitating the execution of overall Service, Regional Office, or individual park objectives. Field activities involve the identification and evaluation of archeological sites, or data salvage through site excavations designed to minimize adverse impacts. While in the office, archeologists contribute to plans as team members or consultants, participate in the compliance process, prepare scopes-of-work and contract specifications, and design or report on archeological research of varying scope. The following sections describe the FY 85 accomplishments of the new division.

Branch of Cultural Resource Management (PCRM)

As noted previously, the Branch of Cultural Resource Management is a new unit that was established in 1985 as a result of the reorganization of the Division of Anthropology. The general mission of the branch is to advise and assist the Region's park areas in the management of their archeological and ethnographic resources. One of the branch’s major responsibilities is to program for, plan, and carry out the necessary archeological and
Figure 15. Organization of the Division of Anthropology. Employees detailed to the Division of Information Management have been omitted.

*Transferred out of this position 12/85
anthropological studies in advance of National Park Service undertakings that could have an impact on important archeological and ethnographic resources located within the park areas. Also, through its review responsibilities the unit assures that all planning documents and development activities are in compliance with applicable legislation, policies and procedures relative to the preservation and protection of archeological and ethnographic sites—put more simply, the branch is responsible for all "archeological clearances" throughout the Southwest Region.

During FY 1985, the staff consisted of six people, although Archeologist Walter Wait and Computer Operator Lourdes Lujan were on full-time detail to the newly established Division of Information Management. The Chief of the Branch of Cultural Resource Management is Ted Birkedal while Jim Bradford is the Senior Staff Archeologist. Peter McKenna serves as Staff Archeologist although he has a continuing research role on a part-time basis with the Branch of Cultural Research. John Stein, a temporary employee, now on intermittent status, is employed with the branch as an Archeological Technician.

To a large extent, the branch is a reactive unit that responds to the "archeological clearance" needs of the various park areas. These "clearances" can be for simple pit toilets or thousand-acre land transfers. In many instances, the branch must respond 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.

A large number of the yearly "clearance" investigations are conducted directly by the staff, but a sizeable proportion of these studies are contracted to the private sector. Whether or not a particular survey or excavation is contracted depends on such factors as staff expertise and availability, logistics, timing, and costs. However, contracting does not absolve the staff from work; the branch archeologists usually plan the investigations to be performed, write the scopes-of-work, monitor contract performance, and review the final products.

It is important to stress that the branch's job is not over after the "clearance" is issued and the necessary consultation has been completed with the State Historic Preservation Officer and the Advisory Council. Professional research reports must be prepared on the results of any studies that are conducted in advance of the "clearance." These take time, and even if they are done in-house, additional monies are frequently required for special analyses (palynology, dendrochronology, paleozoology, etc.). Moreover, the collected artifacts, specimens, and field records must be properly processed and curated.

Though compliance-related studies are often small and scattered throughout the Region, they collectively yield a great deal of information about our resource base. Because the locations of construction projects and similar
undertakings are rarely decided upon the basis of their archeological or anthropological research potential, the Service often may be forced to examine areas that normally would not be selected as priorities for research. Nonetheless, the findings are always useful and frequently surprising. Numerous confrontations with the unexpected has made the staff cautious of preconceived notions and assumptions about the archeological and anthropological record—each year brings new discoveries that emphasize how little we know about the human story contained in the cultural resources of our parks.

The following paragraphs highlight some of the more interesting activities and discoveries of the branch over the last year.

Buffalo

"Clearance" investigations in support of the Boxley Valley land exchange and assorted, smaller compliance studies in the valley have transformed our previous understanding of the prehistory of BUFF. Boxley Valley appears to have been the scene of a major Mississippian (A.D. 900-1700) occupation. Formerly, the Boxley and other neighboring Valleys of the Buffalo River had been viewed as a cultural backwash area. Extensive sites (some reaching several acres in size), together with the discovery of huge earth ovens have produced evidence of corn agriculture, decorated pottery, and many other hallmarks of the culturally elaborate lifestyles of Mississippian village farmers. A late Archaic campsite was also found on a bench above the river where ancient hunters made and repaired their weapons over 3000 years ago and scanned the Boxley Valley for signs of fresh game.

Chalmette Unit, Jean Lafitte

In March of 1985, compliance-related excavations in a sewer line right-of-way for the new visitor contact station revealed that the existing 1960's era restroom facility at Chalmette had been built over the buried foundations of a Spanish-Colonial plantation house dating from the late eighteenth century. This unexpected find, together with the discovery of the battle-era Rodriguez House a year earlier, underscores the need for archeological clearance in "disturbed" locations where park tradition suggests nothing lies beneath the ground.

In cooperation with the park and technical experts from the Tennessee Valley Authority, the branch also conducted a magnetometer survey of the north end of the battlefield. The collected remote sensing data is now under study for clues of hidden battle features. The results will assist future plans for interpretive development at Chalmette.

Navajo
Archeologists from the branch packed by horse into Turkey Cave where they excavated footings for erosion control barriers in the prehistoric trash midden, documented the current status of the ruins, and recorded important rock art information. These studies represent the first archeological work undertaken in the cave in over 30 years.

Hubbell Trading Post

In response to site destruction from floodwaters during high spring runoff, the branch conducted emergency test excavations at the endangered Sand Dune Site near Hubbell Trading Post. Although much of the site had been destroyed, these investigations determined that several prehistoric features and some site areas remain intact. The branch is now programming for money to excavate the remainder of the site before it is lost, either to natural erosive forces or planned erosion control activities by the Service.

San Juan Archeological Data Base

This project is of interagency scope, but was developed and is maintained by the Service, under the provisions of PL 96-550. Over 8000 new records were added to the San Juan Archeological Data Base this year. This computerized data base under the charge of the branch now contains records on 36,000 archeological sites and 5000 surveys.

Using the SAN JUAN software and site data from the State of New Mexico Historic Preservation Office, analogous temporary data bases have been created for PBCO, SALI, and BAND.
Branch of Cultural Research (PBC)

Throughout FY 1985, the Division/Branch of Cultural Research remained a cooperative venture between the Service and the University of New Mexico. The Memorandum of Understanding between the two was renegotiated, with ratification by the Board of Regents dating May 8, 1985. The Division Chief, Dr. W. James Judge resigned, effective April 1, 1985, and following reorganization of archeological programs, Larry Nordby was designated Chief of the new branch.

The branch is responsible for planning, designing and executing long-term archeological research projects. Generally, such projects are funded from the Cultural Research Preservation Fund or analogous funding sources. The seminal example of this type of work is the Chaco project, a composite of archeological survey and problem-oriented research through excavation. Although excavation will play a less dominant role as a medium for deriving archeological information in the future, the branch anticipates the execution of carefully designed, cost-effective, long-term archeological inventory. Staff members also look forward to providing essential interpretive data for enhancing the quality of visitor experiences as well as generating high quality technical publications for a professional audience.

Organization within the branch is depicted in Figure 16. Staff members deal with several archeological projects, and other employees provide administrative or technical support of a somewhat topical nature that may cross cut project lines. Examples of the latter are remote sensing, computer applications, collections management, and publications production. A synopsis of each project or technical area of concern follows:

Research at Chaco Culture

During FY 1984 Robert Powers and his crews completed field work for the archeological inventory of areas authorized by Congress for additions to Chaco Culture. A total of approximately 6100 acres was surveyed, and over 1100 sites and isolated artifacts were located and documented. The past fiscal year, the project entered the data analysis and report preparation stage. Most analyses were handled by contract, with reports due during FY 86. They focus on settlement, demographic, agriculture, ethnohistoric, and artifactual studies that relate to the long-term human adaptation to the Chaco area.

Occasionally, staff members from PBC contribute to projects at Chaco Culture that are beyond the scope of the original Chaco project and fall more into line with cultural resource management functions. For example, Frances Joan Mathien and Thomas Windes completed a draft HSR on the site of Kin Nahasbas (Chaco Culture). During their research, they verified that this site consisted of other structures besides its single famous great kiva, including an earlier pit structure and two other later great kivas, all buried under
Figure 16. Organization of the Branch of Cultural Research.
rubble and trash. Along with similar work on Una Vida, the result of this project will be published in the Chaco report series, as an innovative contribution linking cultural resource management activity with research.

Research at Chaco Culture has extended over the past decade, and the staff now is preparing the reports of this endeavor, the largest such project ever undertaken by the Service. There are two report series, and during FY 1985, the role of General Editor has fallen to Frances Joan Mathien, who heads a publication committee of Jerry Livingston, Tom Windes, and Larry Nordby. References for manuscripts published or submitted to the publisher or printer by PBC staff members are given in Appendix B.

Research at Wupatki

This project consists of a complete cultural inventory of Wupatki, an area of about 56 square miles, some of which has a site density of almost 100 sites per section. By the end of FY 1985, 38 sections had been surveyed, and about 1850 sites located by two 4-person crews working under the direction of Bruce Anderson. Primary goals are the modeling of cultural interaction in a zone where several groups came together, and delineation of the environmental parameters of site settlement. Especially interesting are prehistoric reservoir networks and variation in agricultural field systems in use following the last eruption of Sunset Crater, about A.D. 1060. An adjunct study to the survey is an ethnohistoric study of the Navajo use of the Wupatki Basin. Although 2 years of field work remain, all of this data has already begun to reshape the Service's interpretive view of the Wupatki/Sunset Crater area, and has already led to the acquisition of emergency stabilization funding for Wupatki ruins near Horseshoe Mesa. This work was completed this summer under contract by Nickens and Associates, with Bruce as the COTR.

Research at Bandelier

Planning during early FY 85 presaged a pilot study for a sample archeological survey of Bandelier, that is planned for several years in the future. With the help of remote sensing imagery, the pilot study examined the environmental factors that condition site location in an attempt to predict the number of sites at Bandelier. Statistics indicate the total site count to be about 8000. With such a site density, the available monies will only permit sampling of the monument, which will in future years be conducted as a series of staged, stratified samples. Primary research concerns will focus on subsistence and social adaptations to the Pajarito Plateau in the context of an increasingly complex society. The preliminary report will be presented in March 1986, with the research design to follow shortly.
Figure 17. General Editor of the Chaco report series F. Joan Mathien consults with manuscript typist Dolores Guenzi on the technical editing of a manuscript.

Figure 18. Scientific Illustrator Jerry Livingston finishes a contour map showing the archeological site distribution at Chaco.
Figure 19. Art Ireland uses stereoscopic gear to examine and interpret aerial photographs during the BAND survey design.
Research at Padre Island

Work at this area entailed two different types of research. The first consisted of a systematic aligned sample based on transects that cross ecologically-defined sectors, and centers on terrestrial archeological sites. Funding levels were insufficient to permit survey coverage of more than a very small sample of Padre Island lands. The objectives of this survey include the use of topographically-based site location models from the adjacent mainland as predictors of site location on a barrier island. This work was performed under contract by New World Research, Inc. Their report is soon to be submitted.

As part of this contract, a literature search regarding the disposition of shipwrecks along Padre Island was conducted, and the information was used to design a survey directed by Larry Nordby in collaboration with Submerged Cultural Resources Unit personnel and other agencies. The Texas Antiquities Committee, Tennessee Valley Authority, Minerals Management Service, and Corpus Christi Museum all supplied assistance. Using a composite strategy of submerged magnetometry, computer-interfaced positioning, and the use of metal detection units, location of shipwrecks began in July. Terrestrial photogrammetry of a salvor's camp dating to A.D. 1554, perhaps the earliest such site in the United States, also took place. "Ground-truthing" of magnetic anomalies using divers, plus further magnetometry is planned during the final field season of FY 1986.

Computer Assistance

This area of operations is directed by Bruce Panowski, who interacts with other data processing personnel to develop various applications associated with cultural resource management or other challenges. For example, Bruce created applications such as:

- List of Classified Structures (requested by PCH)
- Wupatki archeological survey (for PBC)
- Accessions inventory (for PBC)
- National Catalogue System (for WASO)
- Software Inventory (for )
- Use/Cost Analysis (for )
- ARMS data file (for PCA)
- PAY/PERS prototype for (for AP)
- Bandelier archeological survey bibliography (for PBC)
- Land Acquisition Prototype (for ONL)

Moreover, several spreadsheet applications for tracking budgets and FTE were created and/or modified for other offices, and the MDSS program was installed and Regional Office personnel trained in its use.
In addition to the foregoing, direct assistance to the projects of the Branch included contract administration regarding Bandelier environmental maps. Digital elevational models were acquired from U.S.G.S., and digitized, permitting their use with MOSS.

Collections Management

The curatorial activities in the Regional Office are split between the Regional Curator, who is not within the SWCRC, and PBC employees Judy Miles and Kim McLean in consultant with other staff members who have been active with the Chaco project.

Collections were reorganized by updating accession files, locating reports, and cleaning, bagging, reboxing, and labeling artifacts and their containers. These containers were then added to a master locational map. None new accessions were processed, and 15 others were supplemented. Branch of Cultural Research also received new materials.

Because of the volume and importance of the Chaco collections, Judy Miles began work on the branch's Scope of Collections statement by the end of fiscal year. When complete, this document will be the prototype for others in the Regional Office. As part of this work, all outgoing loans made by Branch of Cultural Research over the past 15 years were reviewed, and either renewals or returns of the objects were requested.

One difficulty experienced the year was damage to the containers of Chacoan artifacts in storage at Pueblo Bonito where they are stored in the roofed rooms, as well as in the Maxwell Museum and warehouse where a leaky water line or roof posed threats. Nevertheless, archaeological material was not damaged, and the containers were replaced.

Branch of Remote Sensing (now merged into Branch of Cultural Research)

Now coordinated by Arthur K. Ireland, this unit has continued its twin major missions of providing remote sensing expertise/products, both to parks of several regions and to archeological research projects of Branch of Cultural Research. Thus, cultural resource management services are provided to managers as well as technical/professional staff. Primary focal points are the examination of aerial photography, satellite imagery, and the preparation of photogrammetric maps. This unit also maintains a laboratory of equipment and an archive of aerial imagery. Both are used extensively by non-service personnel as well as by Service employees on an intensive basis.
In this highly technical field, major projects such as those listed below, are often related to equipment available. Major projects include:

**Yucca House National Monument.** (Rocky Mountain Region). This monument was photogrammetrically mapped by a private contractor using photography previously acquired by the Branch. Using a Leitz-Sokkisha EDM 3E(10) Electronic Distance Meter, Service personnel set the ground control, saving considerable money over commercial work. Art Ireland also served as COTR for the contract work.

**Goodman Point Ruins, Unit Hovenweep National Monument.** (Rocky Mountain Region). A project almost identical to that given above was done at this area.

**Fort Davis.** At the request of the Division of History, a composite of Branch and contracted personnel photogrammetrically mapped Fort Davis. All technical specifications and requests-for-quotations were prepared by Art, who served as COTR for contract. Again, the Leitz-Sokkisha EDM played an essential role.

**Bandelier.** Use of the ARMS Data Search and Retrieval Program is an important prelude to the development of a predictive site location model at Bandelier. This was done using a Numonics 5424 Graphics Pen plotter coupled with a Tektronix 4051 Graphics terminal. Selected areas containing large pueblos, the nodes of prehistoric occupation, will be aerially mapped during FY 86 using the Leitz-Sokkisha instrument.

A comprehensive inventory and evaluation of the photo archive and library was undertaken during FY 85. All computerized listings were updated and all new materials accessioned in an attempt to address the Center's 5-year goals of identifying any imagery deficiencies in Regional parks. This permitted branch staff to supply a list of all materials dealing with Chaco Culture to the Superintendent. Other examples of materials supplied to parks of the Region include:

**Salinas.** Maps of the Quarai Unit, prepared from aerial photographs were provided to PCH, and stereoscopic models to be used in the interpretation of Quarai and Abo are now in production.

**Hubbell Trading Post.** At the request of POC, similar maps were supplied to the HABS team.
Figure 20. The distribution of publications, materials, and services of the old Branch of Remote Sensing during FY 85 demonstrates the widespread interest in this program.
The branch published two additional Supplements to the Remote Sensing Handbook Series in FY 85:

The American Great Plains (Supplement 9)
Photogrammetry in Archeology: The Chaco Mapping Project (Supplement 10)

Professionals from all over the world continue to request these reports, as shown in Figure 20. Other manuscripts submitted by branch personnel for publication are listed in Appendix B.
SUBMERGED CULTURAL RESOURCES UNIT (PCS)

This unit is unique in the Center by virtue of its Servicewide responsibilities. The only underwater archeological research group in the Federal Government, the unit expands on that mandate by providing scuba training for Service divers in areas of law enforcement, maintenance, and advanced scuba skills, in addition to underwater research technique. Staffed as shown in Figure 21, the unit has emerged as a national force in the development of shipwreck legislation and the ethics of the sport diving community. A composite overview of research and training activities is provided on a park-by-park basis:

U.S.S. Arizona National Memorial (USAR) (Western Region)

The second and final field session at USS Arizona Memorial, directed by Dan Lenihan, was conducted between October 15-30, 1984. Funded by the Arizona Memorial Association the research team included unit staff, Service divers from several parks and divers from the US Navy Mobile Diving Salvage Unit Number One. The objectives of the field work were to obtain port and starboard elevation drawings, complete the planimetric view, and develop artists' perspective drawings for possible use in the construction of an in situ model or mural for the benefit of visitors to the Memorial. Photographic and videographic documentation was also obtained. Final line drawings of the in situ remains of USS ARIZONA were submitted to the Superintendent and the Western Region Cultural Resources staff by the unit in February 1985, and the Service released the drawings to the public on Memorial Day.

Pu'uhonua O Honaunau National Park (PUHO) (Western Region)

A brief reconnaissance survey of two units of the park was conducted in early November 1984. In association with NPS Western Region cultural resources specialists, Unit personnel examined the nearshore waters of "Place of Refuge" for suspected cultural remains. Cultural manifestations located during the cursory survey included circular holes ground into the bedrock, rock cairns, possible stone anchors, and building foundations.

A second survey/training session was conducted at the park during June 1985. The activity was intended to document the nature of any cultural resources immediately adjacent to the park's land base, indicate locations of any notable natural resources, and to develop recommendations for future management. The survey also served as a dive refresher and basic cultural resources documentation training for service divers in parks of the Pacific area.
Figure 21. Organization of the Submerged Cultural Resources Unit.
Apostle Islands National Lakeshore (APIS) (Midwest Region)

Organized by the park staff, an intensive shipwreck documentation effort was conducted at the lakeshore late in FY 1984. The vessel under investigation is believed to be the two-masted wooden schooner barge NOQUE BAY lost in shallow water just offshore when she caught fire and burned in October 1905. Toni Carrell directed the diving team, composed primarily of volunteer sport divers. A local commercial diving salvage company volunteered equipment and personnel for test excavations. Volunteers participated in all aspects of the project including artifact identification and documentation, comprehensive site mapping and photography. Complete video coverage was also obtained. A Duluth TV station aired an 11 minute feature story in April 1985, on the work conducted in the park. The Superintendent, area Historian, and a park ranger/diver were interviewed and underwater footage shown. A strong public conservation message came across.

War in the Pacific National Historical Park (WAPA) (Western Region)

On-site evaluation of the two invasion beaches, Agat and Asan Beach Units, was coupled with background research at the Micronesian Area Research Center, University of Guam, and interviews with longtime Guam residents. The objective of the assessment was to obtain information on water conditions, the nature and density of World War II remains adjacent to and on the reefs, post-war salvage and dumping of military equipment, and location of control points for a future remote sensing survey.

While at WAPA, a training course in techniques of Submerged Cultural Resources Management was conducted at the park. The training included interpretative approaches, management concepts, research diving safety, underwater mapping, photo and video documentation, and practical field exercises. The SCUBA skills of the park dive team were upgraded during the course and CPR certifications provided to the entire park staff.

Channel Islands National Park (CHIS) (Western Region)

Inventory and documentation of shipwrecks within park waters off San Miguel and Anacapa Islands were conducted during August 1985. Unit personnel working with Western Regional divers and cultural resource specialists photographed, mapped, and sketched two known shipwreck resources, AGGI and GOLDEN HORN. In addition, areas of high probability were examined for additional cultural remains. The team followed up on a cooperative effort with the National Oceanic and Atmospheric Administration (NOAA) by checking magnetic anomalies discovered during an earlier remote sensing survey. The project also met standards for annual scuba refresher training for Western Regional divers.
Isle Royale National Park (ISRO) (Western Region)

The final field phase of inventory and documentation of shipwrecks within the park's waters was completed. In cooperation with park staff, NOAA, and Great Lakes maritime experts, Unit personnel gathered information necessary to complete the final report on the Isle Royale shipwrecks. Part of the activity included diving on deeper portions of vessels previously documented using a mini-sub donated by NOAA.

Indiana Dunes National Lakeshore (INDU) (Midwest Region)

Unit personnel videotaped and photo documented ship remains, partially exposed on the shoreline, during a brief visit in August 1985. The vessel stranded on shore, within what is now the park, during a winter storm.

Fort Jefferson National Monument (FOJE) (Southeast Region)

Toward the end of FY 1985, unit personnel conducted an intensive session of videodocumentation of natural and cultural resources. They also worked with park staff on developing approaches for surveillance and protection of shipwreck sites.

Cape Cod National Seashore (CACO) (North Atlantic Region)

Unit personnel also conducted a week-long training program for North Atlantic Regional divers. This included refresher training for recertification as well as instruction in advanced skills in underwater recovery, recording, and facility maintenance diving. Cultural resources personnel from NARO also requested examination of two shipwreck sites, SOMERSET and FRANCES. The offshore bar near SOMERSET's final resting place was examined by divers in an attempt to locate cannon which are reported to have been jettisoned by the crew of the vessel when she stranded. No cannon were located and it is presumed they are buried in the sand. FRANCES was evaluated and videotape of the site was produced. A sketch map was also completed as part of the workshop activities.

Buck Island Reef National Monument and Virgin Islands National Park (BULS) (Southeast Region)

Visiting the parks as part of an assessment for future submerged cultural resources survey needs, Larry Murphy examined and photographed known shipwrecks in both areas. Discussions were held with superintendents, resource and staffs, on their submerged resources management problems and needs. Local historians were also contacted. A proposal delineating recommendations for both areas is underway.
SUMMARY

The foregoing examples demonstrate the breadth of activities carried out by Center employees in support of areas in the Southwest region. Not only do the many disciplines interact to generate products and provide cultural resource oriented services to these areas, but professionals also orchestrate regional or national programs associated with scuba diving, data processing, remote sensing, etc. We believe that the interactive capacities of the various organizational units lead directly to the highest possible quality of these services and products, as well as the greatest responsiveness to our parks available in the National Park Service.
APPENDIX A:

Employees of the Southwest Cultural Resources Center,  
As of October 31, 1985

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organizational Unit</th>
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<td>PBC</td>
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APPENDIX B
Manuscripts Published or Submitted to the Publisher/Printer During FY 85

Akins, Nancy J.

Akins, Nancy J. and John D. Schelberg

Brugge, David M.

Carrell, Toni
1984 Submerged Cultural Resources Inventory, Point Reyes National Seashore and Point Reyes-Farallon Islands National Marine Sanctuary. U.S. Dept. of the Interior, National Park Service, Submerged Cultural Resources Unit, Santa Fe, New Mexico.

Cameron, Catherine M.

Clary, Karen Husum

Coleman, Roger E.
Coleman, Roger E. and Dollar, Clyde D.

Cully, Anne

Cully, Jack F.

Doyel, David E., Cory D. Breternitz and Michael P. Marshall

Drager, Dwight L., and Thomas R. Lyons

Gillespie, William B.

Gomez, Arthur R.
_A Most singular Country: A History of Occupation on the West Texas Frontier._ Submitted to SMU Press.

Greene, Jerome A.

Harrison, Laura Soulliere
Judge, W. James

Lagasse, Peter; William B. Gillespie and Kenneth G. Eggert

Lekson, Stephen H.


The Sierra County Rio Grande Project. UNM Anthropology 3(5).


Mathien, Frances Joan

McKenna, Peter J., with a contribution by H. Wolcott Toll

McKenna, Peter J., and H. Wolcott Toll

Murphy, Larry

Palkovich, Ann M.

Powers, Robert P.


Schelberg, John D.

Toll, H. Wolcott III
Warren, A. Helene and Frances Joan Mathien

Webb, Melody


Windes, Thomas C.


Publications Currently in Press

Brugge, David M.

Drager, Dwight L.

A Model of Possible site concentrations in the Seedskadee Project Area. In Dwight L. Drager, ed., THE SEEDSKADEE PROJECT: Remote Sensing in
of Remote Sensing, National Park Service; Bureau of Reclamation; and University of New Mexico.

Judge, W. James

Larralde, Signa

Lekson, Stephen
The Architecture of Talus Unit, Chaco Canyon. Papers of the Archaeological Society of New Mexico.

Largest Settlement-Size as an Index of Soio-political Complexity. Haliksa' i.

Mathien, Frances Joan


Mathien Frances Joan and Randall H. McGuire (editors)

Schelberg, John, Peter J. McKenna, and Thomas C. Windes

Toll, H. Wolcott

Wandsnider, LuAnn, and James I. Ebert
PROJECT: Remote Sensing in Non-site Archeology. Albuquerque: Branch of Remote Sensing, National Park Service; Bureau of Reclamation; and University of New Mexico.

Wandsnider, LuAnn, and Signa Larralde

Windes, Thomas C.