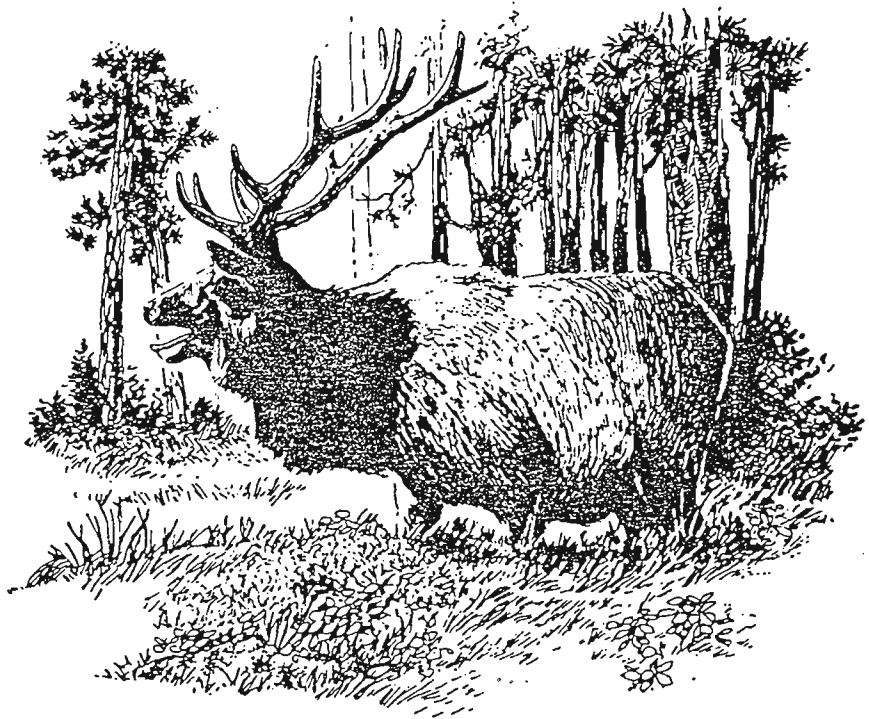


**Southwest System Support Office
Natural Resources Program
Annual Report**



February 1996-Fiscal Year 1995

**National Park Service
Santa Fe, New Mexico**

Table of Contents

Introduction/1

Natural Resource Management/3

Source of Natural Resource Funds Chart/3

Distribution of Funds/4

Biology Program/5

Integrated Pest Management/5

Inventory and Monitoring/5

Vegetation/6

Wildlife/6

Threatened and Endangered Species/7

Training/8

National Biological Service Cooperation/9

Environmental Quality Program/11

Caves and Geologic Resources/12

Geographic Information Systems/13

Water and Air Resources/14

Appendices

Appendix A - Division of Natural Resources Staff/15

Appendix B - Resource Management Plan Status/17

Appendix C - Funding Criteria & Guidelines/19

Appendix D - Abstracts of Projects/22

Appendix E - List of Parks/43

Introduction

Fiscal year 1995 was a year of great change and restructuring. National Park Service regional boundaries were redrawn in May of 1995; and, consequently, we had to quickly modify our program to service many "new" park customers, while still working with our traditional parks. This fiscal year 1995 report mainly covers our activities within the old boundaries of the Southwest Region; however, it also touches on some activities related to our merging with the parks of the new Southwest Cluster.

This year the Natural Resources Program continued to emphasize technical and program support to parks as our principal services. This assistance consists of technical advice in the field, assistance on contracts and cooperative agreements, and providing information and contacts for technical aid. Special attention was devoted to parks falling into the new Southwest Cluster; for example, helping "desert parks" in Texas and New Mexico develop relations with their new counterparts in Arizona.

Program support continued to highlight direct assistance to parks and coordination with the Washington Office, universities, and federal and state agencies. Particular emphasis was placed on collaborating with the National Biological Service (NBS) for project funding. This proved to be especially frustrating because of the difficulties NBS was having this year; nevertheless, NBS project funding was procured for Bandelier, Padre Island, Big Thicket, and Big Bend.

The Natural Resources Program staff provided program support through the Regional Science Program and by coordinating the Resource Management Plan Program, Investigators Annual Report, and completion of the Resource Management Assessment Program.

As our office staffing shrinks, we expect our role to necessarily involve more facilitating. With this in mind, during 1995 we organized two small workshops. One was in Las Cruces, essentially for our southern tier of parks; and the other was in Santa Fe, essentially for our more northern tier of parks. These two meetings brought natural resource specialists from parks of the new cluster together and allowed us to discuss cooperation.

The meeting in Las Cruces also stressed two points unique to that group, namely, (1) their common interest in deserts and (2) concerns along the Mexican border.

Our staffing levels in the Natural Resource Program shrank by over one half this year. This occurred through three changes. The Physical Scientist post, vacated in 1994, is gone. Our office had provided support in Geographic Information Systems (GIS); but in May 1995, this GIS sub-unit was moved out of our unit and now provides service on a broader scale to parks within the Rocky Mountain, Colorado Plateau, and Southwest clusters.

Finally, the Cave Specialist position was moved over to the national level, to be stationed in Denver.¹ As this report is prepared, the Program Leader post also is being vacated but should be filled with a new person.

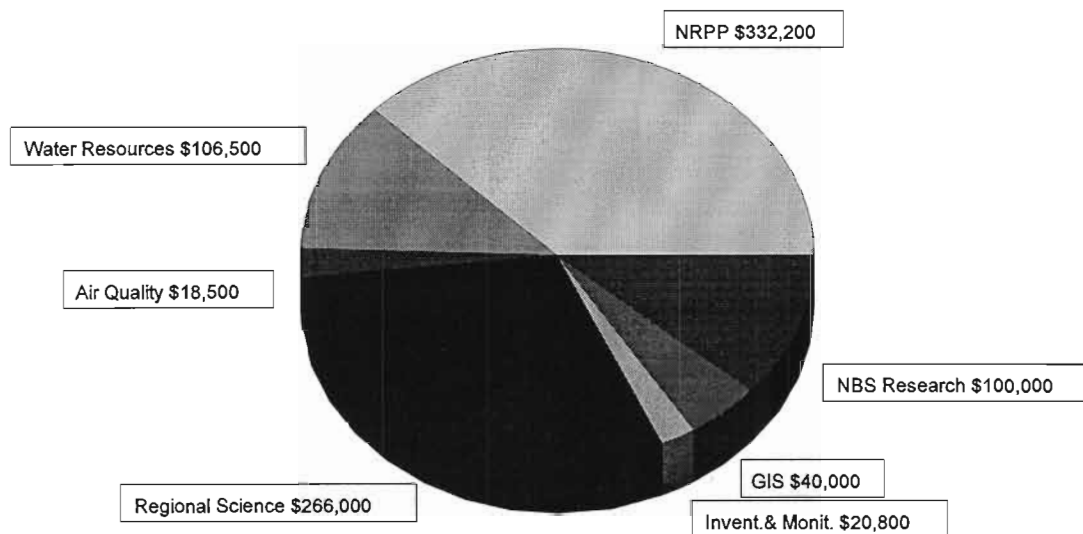
Our 1995 and 1996 staffing is summarized in AppendixA.

¹ This last change occurred physically in early Fiscal Year 1996

Natural Resources Management

The Natural Resources Program continues to assist parks in developing a programmatic approach to managing natural resources. The main tool for project and program development is the Resource Management Plan (RMP). RMPs are compiled in a computerized database format for each park and serve as a wish list of desired projects, a source of draft proposals, and as a tool for planning projects. Many parks have made significant progress in documenting their natural resource needs with the RMP. Appendix Table B presents a list of the RMP status for parks in the Southwest Cluster.

Source of Natural Resource Funds



Grand Total: \$884,000

Figure 1: The sources and amounts of natural resources funding that our office coordinates.

TECHNICAL CATEGORY	AMOUNT SPENT
Air Quality	\$ 18,500
Cave and Geologic Resources	\$ 47,311
Environmental Quality Program	\$ 15,500
Geographical Information Systems	\$ 53,020
Global Change	\$152,000
Integrated Pest Management	\$ 55,275
Inventory and Monitoring	\$304,265
National Biological Service	\$100,000
Resource Management Program	\$168,000
Threatened and Endangered Species	\$ 37,272
Vegetation	\$ 62,468
Water Resources	\$161,500
Wildlife	\$184,750

Figure 2: Distribution of funds by project category throughout the Southwest Region for Fiscal Year 1995.

Appendix C shows the criteria for project selection. Appendix D presents some additional details on individual projects, such as park contact persons; and Appendix E lists all the parks in the old Southwest Region and the new Southwest Cluster.

Biology Program

The program's emphasis in the biological sciences continues to be on extension, information transfer, and technical advice in areas such as wildlife surveys, pest management, vegetation inventory, threatened and endangered species work, and exotic vegetation control. The sections below provide overviews of these activities.

Integrated Pest Management (IPM)

Because of the large demand for assistance in pest management and in view of the limited size of our staff, we are successfully using a contractor to provide help to parks for writing their IPM plans and for advice on pests. The following parks benefited this year: Big Bend National Park, Salinas Pueblo Missions National Monument, White Sands National Monument, Guadalupe Mountains National Park, El Morro National Monument, Fort Davis National Historic Site, Hot Springs National Park, and Chaco Culture National Historical Park. An assessment of insect and weed pests is also being conducted at Lyndon B. Johnson National Historical Park.

In addition, the staff biologist served on the Service's IPM reengineering team, which will be providing recommendations to the Director.

Inventory and Monitoring (I&M)

Inventory and Monitoring work (I&M) continues to be a major thrust of our program. This effort includes various plant and animal surveys and a bibliographic project.

A special effort has gone into developing computerized park bibliographies on natural resources, a project done through a cooperative agreement with the University of Idaho. This bibliographic effort summarizes the information about natural resource research and other natural resource efforts that are documented in and around some 30 parks in the Southwest and makes this information available in a computerized format for scientists and others. This project also features personal training for park staff in how to operate the Pro-Cite software used for this effort.

We also supported a number of specific assessments in the field, including the following:

- a vegetation survey at Fort Davis National Historic Site
- a soil survey at Pecos National Historical Park
- a vegetation survey and establishment of monitoring transects at Chickasaw National Recreation Area

- a survey of freshwater mussels for a portion of Buffalo National River
- rock art mapping at El Morro National Monument

The I&M efforts for the year also included the review, verification, and update of the NPFlora and NPFauna data bases. This project was accomplished via a contract with the Western Regional Office of The Nature Conservancy.

Vegetation

The Natural Resources Program also supported a number of small, but sometimes critical, projects in the topic of vegetation management, including the following:

- a study to test which native vegetation works best for revegetation of bare areas at Bandelier National Monument
- assistance on a cultural landscape report for Palo Alto Battlefield National Historic Site
- removal of woody fuel at El Morro National Monument, for fire protection
- rehabilitation and replanting of disturbed areas at Capulin Volcano National Monument and Carlsbad Caverns National Park
- a study of revegetation rates at Big Thicket National Preserve
- control of exotic plants at Aztec Ruins National Monmuent
- provision of funds for planting native vegetation at Fort Smith National Historic Site

In 1994, we helped Buffalo National River obtain 1995 NPS funding for a streambank restoration project. This project demonstrates stabilization of eroding streambanks through the use of cedar trees and other natural materials, where the cut trees and other mechanisms provide temporary protection until stabilization can take place.

Wildlife

Our program always has more demands than we can meet in the wildlife area. We provide financial assistance in small amounts and share technical advice on a regular basis. Our biologist frequently helps parks make contact with the right people in the U.S. Fish and Wildlife Service or other agencies and maintains networks outside the NPS to provide this service.

The fencing project continues at White Sands National Monument, funded by NRPP. This fence is designed to prevent the entry of oryx, an exotic African antelope, into the park and to maintain control over off-road vehicles or other possible disturbances to the park's natural resources. As of December 1995, the fencing project was approximately 60 percent completed.

A small parks NRPP project used infrared photography to census whitetail deer at Pea Ridge National Military Park. Three exclosures were also established and are being monitored as part of this study. These efforts will help the park staff evaluate deer impacts on the park.

Of special interest is our work with the Bandelier staff to help them secure significant new NRPP funding, \$480,000, to study the problem of overpopulation of elk in the park. The actual funding may not start until Fiscal Year 1997 due to funding reductions this year.

We also funded several projects or studies with small amounts of monies out of our program's natural resource or "science" funds:

- evaluation of elk impacts at Bandelier National Monument;
- a survey of small mammals at Pecos National Historical Park, in cooperation with the University of New Mexico, which is about to conclude;
- support to Bandelier for the eradication of feral burros. One burro was found to have part of its range in the park. It will be removed in the near future;
- neotropical migratory bird studies at Buffalo National River, Jean Lafitte National Historical Park & Preserve, Big Bend National Park, and Padre Island National Seashore (some in conjunction with the National Biological Service).

Threatened and Endangered Species

The staff biologist also provided analyses on various threatened and endangered species, including work with the U.S. Fish and Wildlife Service on the Rio Grande Silvery Minnow and Mexican Spotted Owl, overall assessments of endangered species at Capulin Volcano and Navajo National Monuments, a bird survey at Big Bend National Park for blackcapped vireos, and provision of information on regional expenditures on threatened and endangered species work, for use by the Washington Office.

Training

The biologist served as a member of the training work group that prepared the plan on how to establish a Center for Alternative Education at the Presidio. Natural Resources will be one of 16 curricula covered by the center.

National Biological Service Cooperation

This was a difficult year for the new National Biological Service (NBS), with reductions imposed on their budget and their *raison d'être* under serious scrutiny at every step. Despite the unusual year, we still managed to continue some valuable cooperation with the NBS on several fronts.

Our former NPS researcher at Bandelier National Monument, now with NBS, continued to gain some NBS funding for his research into erosion processes. In cooperation with our office, he also attained some **\$30,000** additional NBS Fiscal Year 1995 funding for research in the topic of fire ecology.

We also assisted the NBS biologist at Padre Island, who was also formerly with NPS, to attain **\$86,000** of additional NBS Fiscal Year 1995 funding for her research on sea turtles. This project was developed and will be carried out in conjunction with biologists in the Southeast Field Area and Southeast System Support Office of NPS as well.

At Jean Lafitte, the NBS research continued on the topic of wetland modeling, funded by NBS and in its last year at **\$100,000** for Fiscal Year 1995. This model will eventually help the park staff decide on management strategies for the Barataria Unit. We also worked with Jean Lafitte this year to develop a proposal for some new NPS wetland research funds, from the NPS Water Resources Division. It appears possible that the park could gain support in Fiscal Year 1997 (they were one park below the cut for Fiscal Year 1996). A census of birds also was carried out at Jean Lafitte, leading to a report entitled "Breeding Bird Distribution in Contiguous Forest and Forest Patches in the Vicinity of an Urban/Park Interface."

Our office also worked with Big Thicket National Preserve to help secure new NBS funding for a wetland research project, to be done in conjunction with Congaree Swamp National Monument. They received **\$43,700** of Fiscal Year 1995 funding from NBS for this project, with an equal amount going to their sister park, Congaree Swamp. At this time, NBS plans to continue to fund this wetlands research in the two parks during fiscal years 1996 through 1999.

We carried over certain NBS funds for work in the "Global Climate Change" topic at Big Thicket, which comprises about **\$152,000** for the evaluation of vegetation. This research is conducted in conjunction with two universities. Researchers from Columbia University are studying climate change via tree ring analysis, and Rice University scientists are observing changes in vegetation.

Big Bend National Park received the second year assistance for a three year study from the NBS staff in Lafayette, Louisiana. This study investigates the Neotropical Migratory Bird corridor through the park. The NBS staff had \$100,000 to use on each year of this work. In addition, the

same NBS staff began work on a three year NBS NRPP project for an International Biosphere Partnership with the park's Mexican neighbors on the Area de Proteccion de Flora y Fauna "Madres del Carmen." This project has \$350,000 for the three years, with \$75,000 being funded in this first year.

Environmental Quality Program

Two projects involve environmental impacts this year. We provided some financial support in the area of minerals management, for surveys and other work, in cooperation with the Environmental Quality/Review Program (formerly the Environmental Coordination Division), with the focus primarily on oil and gas development at Padre Island National Seashore.

Funding was used to cover several trips to parks². One trip was to visit Big Bend National Park for a closeout meeting with the State of Texas' Surface Mining and Reclamation Division, Abandoned Mine Land (AML) Section, who funded the closure of 19 abandoned mine openings associated with the Marischal Mine, using state-of-the-art, bat-accessible gate designs. The project was completed in May 1995 and represents the largest AML closure project of its kind in North America, according to Bat Conservation International.

An environmental assessment was prepared to address closure recommendations for the 10 abandoned mine openings associated with the Calumet and Texas Copper Mines. The Minerals Program Leader also traveled to Corpus Christi, Texas, to participate in the initial meeting of the planning team preparing a Minerals Management Plan/Environmental Impact Statement for Padre Island National Seashore.

Our office supported a project at Guadalupe Mountains National Park for a visitor use study. This study, underway in cooperation with the University of Texas at El Paso, identifies the uses of park resources and evaluates visitor perceptions in terms of services available in the park.

²Linda Dansby, Minerals/Oil and Gas Program Leader

Caves and Geologic Resources

The NPS Southwest Region has been the coordinating center for the Service's cave and karst management concerns for the past four years. The cave specialist position has provided liaison with the Washington Office, cave and karst researchers, the recreational caving community, and other federal and state agencies involved with cave and karst management. Work extends to cave and geologic issues at the national as well as international levels. Because of the national nature of this post, it has been moved to the Washington Office, in their Denver office location, as of January 1996.

The former Southwest Region established an account with NRPP monies to assist with cave management servicewide. These funds were used primarily for employee travel to attend workshops and to travel various parks which needed counsel on cave management.

We initiated the rewriting of the cave and karst management section of NPS-77. Input from parks with caves was requested and responses from these parks are now arriving.

In April 1995, a call was made to all parks in the region to compete for funding provided by the U.S. Geologic Survey in their National Cooperative Geologic Mapping Program; and eight project proposals were submitted from the Southwest Region areas.

A Regional Cave Workshop and Seminar was held in Harrison, Arkansas, with 15 federal employees in attendance, including Washington Office, Western Region, and Bureau of Land Management personnel.

Carlsbad Caverns completed its first year of a two year project to study water infiltration routes and the impacts of buildings, parking lots, sewer lines, and water lines on the quality of water in the cave.

Other projects included: bat gate installation at Mammoth Cave, Kentucky, bat gate design for caves in the Flagstaff Arizona area, and inventories of caves and lava tubes at Amistad National Recreation Area, Texas, and Petroglyph National Monument, New Mexico.

Geographic Information Systems

In May 1995, the Geographic Information Systems (GIS) staff of the Natural Resource Program was moved administratively to the Colorado Plateau Support Office, although, physically, their location in Albuquerque, New Mexico, was not changed. This Geographic Information Systems Center provided valuable technical support to parks in the old Southwest Region and in its new role provides support to all the parks in the Intermountain Field Area (which includes the Colorado Plateau, Southwest, and Rocky Mountain Clusters). Support has included direct grants to parks, funding of projects, and technical advice. The center continues to be a joint venture of the National Park Service and the University of New Mexico, providing support in use of global positioning systems as well as in GIS.

From funds received directly from Washington, D.C., the GIS Center has provided technical assistance and personal training in several key GIS software applications which include EPPL7, Arcview2, and GRASS. In June 1995, a "GIS for Managers" course was held in Albuquerque, New Mexico. Twenty park personnel from throughout the Service attended this meeting.

To keep up with current technology and to maximize work efficiency, the GIS Center purchased an Austin Pentium Computer and 21" screen Panasonic monitor, and an optical drive. The former Southwest Region also supplemented funding for the Center's purchases of two modems and an Iomega Zip Drive.

The Natural Resources Program has also provided Regional Science funds for a Cooperative Student's assistance at the GIS Center. This student managed several of the center's databases and provided operational support in GIS and in global positioning systems.

Regional Science funds were provided to White Sands National Monument for computer hardware.

Guadalupe Mountains National Park also received support for a cooperative student to digitize vegetation, watershed, and fire history maps. The student also converted existing EPPL7 files into Arcview2 files.

Other projects conducted in the Southwest Region included: global positioning of archeological sites at Pecos National Historical Park and El Morro National Monument, mapping at Pecos, vegetation mapping at Padre Island National Seashore, and incorporation of the Rosillos Mountains acquisition vegetation map into the park map at Big Bend National Park. The center also conducted an interagency project to integrate data from the city of Flagstaff, Coconino County, the Arizona State Land Office, U.S. Forest Service, and the National Park Service.

Water and Air Resources

Most of our office's water resources projects and activities are carried out in conjunction with the NPS's Water Resources Division (WRD) in Fort Collins, Colorado. Below is a brief summary of these activities.

Work is nearing completion on the **Water Resources Management Plan for Big Bend National Park**, done in conjunction with WRD and the University of Arizona. This summarizes the state of knowledge and provides detailed recommendations for project needs.

Big Thicket is also continuing work on its **Water Corridor Management Plan for Big Thicket National Preserve**, in cooperation with Rice University.

In 1996, we will be actively working with WRD on the **Water Resources Management Plan for Chickasaw National Recreation Area**. This work started in early 1995 but, because of an unexpected key staffing vacancy, was delayed until late 1995.

WRD provided some support to Bandelier National Monument on water quality monitoring. Three projects at Buffalo National River involved mapping of wetlands, water quality monitoring, and rainfall monitoring (in addition to the streambank work mentioned under Natural Resources Management above).

Water quality work, in cooperation with Highlands University, is underway at Pecos National Historical Park and is progressing well. A small water quality project is winding down at El Morro and the final report is due soon.

Our program helped Chaco Culture National Historical Park develop a proposal to successfully secure \$50,000 in Fiscal Year 1996 WRD project funds for an erosion control project. We also assisted Jean Lafitte with a proposal on water quality that could be funded in 1997, depending on funding availability at WRD.

Our program leader also was invited to work with WRD on four special national activities this year: (1) on the WRD annual panel to evaluate projects for funding nationwide; (2) as facilitator and editor of a working group to prepare a paper on water resource needs in the NPS; (3) involvement in some meetings for WRD related to NPS water resource issues along the Mexican border; and (4) as a co-author on a Big Bend presentation on water and recreation.

Unfortunately, our reduced staffing allows little involvement in air resource issues at the moment; so the parks usually work directly with Denver personnel. Fortunately, funding from the Air Resources Division has continued at Bandelier, Big Bend, and Guadalupe Mountains this year, to record visibility and air quality.

Appendix A

Division of Natural Resources Staff

DOUGLAS BRADLEY
Computer Specialist,
SW GIS Center
(505)766-8400

Responsible for UNIX/GRASS portion of the GIS program and system manager for regional SUN workstations, SW GIS Center computer systems, and hardware consultant for Regional GIS programs.

TERESA A. ENGLES
Cooperative Agreement
Student, (part-time)
University of New Mexico
SW GIS Center
(505)766-8400

Responsible for biological data analysis, preparation of materials for technical reports, and biological technician functions.

MILFORD R. FLETCHER
Unit Leader, SW GIS Center
(505)766-8400

Responsible for Regional Geographic Information Systems program and operation of SW GIS Center.

DAVID C. FREDERICK
Computer Clerk, SW GIS Center
(505)766-8400

Responsible for EPPL7 program and assisting with GIS.

LORAYN M. GONZALES
Office Automation Clerk,
SW GIS Center
(505)766-8400

Responsible for general office management.

DARLA HERRERA*
Natural Resource Assistant
(505)988-6870

Responsible for administrative support to the Program Leader and program managers and serves as the administrative focal point of the program.

ROBERT J. HOWARD*
Resource Management Specialist
(505)988-6867

Responsible for Resource Management Plans, Investigator's Annual Reports, NRPP, RMAP, and the consolidated program call.

RONAL C. KERBO
Cave Management Specialist
(505)988-6855

Responsible for National Cave Management Coordination; advises NPS, other agencies, and the private sector on cave management related issues.

ROBERT KRUMENAKER
Regional Chief of Resource Management
(505)988-6867

Responsible for the overall administration of the resource management program and the air and water programs.

SAMUEL H. KUNKLE
Program Leader
(505)988-6862

Responsible for overall management of the natural resources program; global climate change programs; liaison with NBS; water resources and air resources programs.

CRYSTAL LUCERO
Secretary (part-time)
(505)988-6870

Responsible for general office management, correspondence, travel, editorial and graphics work, and other secretarial functions.

LORRAINE E. LOKEN
Secretary (temporary)
(505)988-6713

Responsible for general office management, correspondence, travel, editorial and graphics work, and other secretarial functions.

GERALD D. McCREA *
Regional Biologist
(505)988-6829

Responsible for Integrated Pest Management Program; Endangered Species Program; Wildlife; Vegetation; Inventory and Monitoring Programs; Fisheries; and review of planning documents.

CINDY PHARES *
Program Analyst
(505)988-6714

Responsible for cooperative agreements, contract administration, budget formulation and execution.

***Identifies current staff in the Program.**

Appendix B

Resource Management Plan Status—September, 1995

As an essential document for each park, the Resource Management Plan (RMP) serves as the foundation for park resource management programs. The plan describes the park's cultural and natural resources; outlines the park's goals and objectives in managing these resources; describes the current baseline information and needs; and identifies issues, solutions and costs for the resource program.

The RMP has fundamentally two parts: (1) the narrative section and (2) the computerized database. **All parks in the former Southwest Region have submitted information through the computerized database.** Many parks completed both the narrative section and the database this last year and now have current signed RMPs. The narrative section seems to be the main impediment to parks which have not completed their RMP.

For natural resources, the Washington Office (WASO) has required a current signed RMP since 1991 for WASO funding of projects (strict enforcement began in Fiscal Year 1994). The failure of some parks to complete their RMPs has reduced the small parks NRPP funding from WASO for the Southwest Region (SWR) natural resources projects.

PARK	Comments	Current, signed RMP
Amistad		NO
Arkansas Post	Incomplete draft submitted; new superintendent wants to revise draft.	NO
Aztec Ruins		YES
Bandelier	Completed this year, credited by WASO and SWR as one of the best in the nation.	YES
Big Bend	Completed this year.	YES
Big Thicket		NO
Buffalo River	Completed this year.	YES
Canyon de Chelly		NO
Capulin Volcano		In draft
Carlsbad	Completed this year.	YES
Chamizal		NO
Chaco Culture	Completed this year.	YES
Chickasaw	Completed this year.	YES
El Malpais	First incomplete draft submitted.	NO

PARK	Comments	Current, signed RMP
El Morro	Completed this year.	YES
Fort Davis		NO
Fort Smith		NO
Fort Union		NO
Gila Cliff Dwellings		NO
Guadalupe	Completed this year.	YES
Hot Springs		NO
Hubbell Trading Post		NO
Jean Lafitte		NO
Lake Meredith/Alibates		NO
Lyndon B. Johnson	Has current RMP and has submitted updated draft which has been returned with final comments.	YES
Navajo		In draft
Palo Alto Battlefield	Completed this year.	YES
Padre Island	Completed this year.	YES
Pea Ridge		YES
Pecos	Completing GMP.	Exempt
Petroglyph	Completing GMP.	Exempt
San Antonio Missions		NO
Salinas Pueblo Missions		In draft
White Sands	Completed this year.	YES
Wupatki/Sunset Crater Volcano/ Walnut Canyon	First incomplete draft submitted.	NO

Appendix C

Funding Criteria & Guidelines:

Regional Science Base & Other Natural Resources Funds

A. Purpose of the Regional Science Base

The regional science base has averaged \$200-250,000 per year over the last several years. Rather than assume all parks have equal needs, we see the principal purpose of the regional science base is to:

- provide funds for projects and technical support efforts that have multi-park or regionwide benefits;
- stimulate pilot or demonstration projects, new and innovative ideas, partnerships, and other ventures that benefit park or regional resource management (especially if there is commitment for long-term support, if required, from other sources);
- address unforeseen environmental or resource management crises that require immediate attention;
- provide technical support and expertise to parks and the Directorate beyond the capability of individual parks;
- address resource management issues that can be solved or mitigated in less than two years.

We strongly support long-term monitoring and continuing resource management projects and will eagerly work with park managers on strategies to secure park base funds to support them. With limited funding, however, these generally cannot be funded through the regional science base.

B. Connection to Resource Management Plans

The Washington Office has recently announced that, beginning in Fiscal Year 1994, no Servicewide natural resource funds will be distributed to a park unless it has an approved Resource Management Plan (RMP). We will work with parks to get quality RMPs completed and approved as soon as possible. We require that all projects receiving regional science funds be submitted in RMP project statement format and be in the computerized RMP database.

We shall apply these same criteria to all Servicewide and non-NPS funding sources requiring regional coordination, priorities, etc., in addition to the specific criteria established for a particular funding source (e.g., NRPP, water resources, GIS, SCERP, Challenge Cost Share, cooperating associations, etc.)

C. Guidelines Used to Select Natural Resource Projects for Funding

1. Screening Factors

In order to be considered for support, a proposed park project *must*:

- Contribute to sound ecosystem management, conservation biology principles, prevention or restoration of degraded resources, etc.
- Be consistent with law, regulation, NPS policy, park management documents, etc.
- Be described in an RMP project statement (in RMP database transmitted to regional office) which clearly describes project objectives, methods, etc.
- Have and approved RMP.

2. The following six criteria weigh especially heavily in the selection of projects for funding:

- There is a commitment from park or regional management to use project results to improve management decisions and/or park operations
- The timing is critical (resource damage, political sensitivity, or other reasons)
- The project is needed to support planning effort(s) underway or imminent (e.g., new areas, GMPs, DCPs, etc.)
- The project is listed as a high priority in the park RMP
- Project completion is feasible within budget and via method proposed

Few projects would meet all of these criteria; but to compete successfully for funding, a project must meet most.

3. Other important criteria also taken into account in selecting fundable projects:

- Pilot, new, demonstration, or innovative project
- Budget reasonable and well thought-out (generally less than \$15,000)
- Issue can be solved or mitigated within project timeframe (generally ≤ 2 years)—
Project will be fully funded in the first year, so contracts or agreements are necessary to complete the second year.
- Provides training or other experiences that will have long-term benefits
- Commitment of in-kind or other support from park or partners
- Park and/or project is part of a special emphasis effort or focus by the former Southwest Region or Washington Office
- Commitment of long-term support from park or other sources (if needed) after pilot funding concludes
- Workload on regional office staff is commensurate with the potential value of the project's products and benefits

Again, no project would meet all of these criteria; but a project's chance of funding is enhanced by clear evidence that these factors have been considered in project design.

Appendix D

Abstracts of Projects

TECHNICAL CATEGORY	AIR QUALITY
--------------------	-------------

PARK	Bandelier		
PROJECT TITLE	Air Quality Monitoring		
FUNDING SOURCE	Air Quality	AMOUNT	\$3500
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	Kay Beeley
PROJECT START DATE	Fiscal Year 1993	EXPECTED END DATE	Ongoing
ABSTRACT	Collect visibility and fine particulate air quality data as part of NPS national monitoring network. Gaseous pollutant monitoring, also paid by NPS, though no longer done with the Los Alamos National Laboratory, is ongoing.		

PARK	Big Bend		
PROJECT TITLE	Visibility Monitoring/Gaseous Pollutants		
FUNDING SOURCE	Air Quality	AMOUNT	\$3500 +Gaseous Pollutants - \$8,000
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	Kay Beeley
PROJECT START DATE	Fiscal Year 1993	EXPECTED END DATE	Ongoing
ABSTRACT	Collect visibility, fine particulate, and gaseous pollutant air quality data as part of NPS national air quality monitoring network.		

PARK	Guadalupe Mountains		
PROJECT TITLE	Visibility Monitoring		
FUNDING SOURCE	Air Quality	AMOUNT	\$3,500
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	Kay Beeley
PROJECT START DATE	Fiscal Year 1993	EXPECTED END DATE	Ongoing
ABSTRACT	Collect visibility, fine particulate, and gaseous pollutant air quality data as part of NPS national air quality monitoring network.		

TECHNICAL CATEGORY	CAVE AND GEOLOGIC RESOURCES
---------------------------	------------------------------------

PARK	Amistad		
PROJECT TITLE	Caves: Descriptions and Inventories		
FUNDING SOURCE	Regional Science	AMOUNT	\$1,152
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	Rod Danner
PROJECT START DATE	Fiscal Year 1994	EXPECTED END DATE	Fiscal Year: 1995
ABSTRACT	Data collection of karst resources of the recreation area. This data collection involves locating and marking cave entrances and a narrative description of the caves, or springs and of their contents. Recommendations for detailed inventories have been made.		

PARK	Buffalo National River		
PROJECT TITLE	Bat Gate Cost Share		
FUNDING SOURCE	Regional Science	AMOUNT	\$1,000
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	George Oviatt
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Installation of Bat Gates at Buffalo National River's historic Rush Mining District was completed.		

PARK	Capulin Volcano		
PROJECT TITLE	Volcanic Strata Study		
FUNDING SOURCE	Regional Science	AMOUNT	All money obligated in Fiscal Year 1992
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	John Batzer
PROJECT START DATE	Fiscal Year 1992	EXPECTED END DATE	Fiscal Year 1996
ABSTRACT	Study volcanic strata of Capulin Volcano National Monument and surrounding areas. This project is under a Cooperative Agreement with the College of Santa Fe. Principal investigator is Bill Sayre. A one year extension has been granted for more verification of samples that are being dated as well as more work on the paleomagnetic aspect of the project. There is also need for more time to prepare data for GIS compatibility. He is presently able to submit a draft copy of the final report as well as a paper copy of the geologic map.		

TECHNICAL CATEGORY**CAVE AND GEOLOGIC RESOURCES**

PARK	Carlsbad Caverns		
PROJECT TITLE	Determine Water Infiltration Rates		
FUNDING SOURCE	Water Resources	AMOUNT	\$25,000
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	Dale Pate
PROJECT START DATE	Summer 1994	EXPECTED END DATE	Summer 1996
ABSTRACT	This is a two year project; funding is \$25,000 per year. The area above Carlsbad Cavern has been significantly altered, and the cave is overlain with buildings, parking lots, sewer lines and water lines all of which affect the infiltration of water into the cave. This project studies surface water infiltration routes into the cave, determines quality of the water, and will suggest actions to mitigate possible threats of possible harmful effluent into the cave. Water samples have been taken by the contractors from Colorado School of Mines for initial analysis. Monitoring sites have been established and the research phase has begun.		

PARK	El Malpais		
PROJECT TITLE	Fire Effects on Cave Ecology		
FUNDING SOURCE	Regional Science	AMOUNT	\$550
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	Ken Mabery
PROJECT START DATE	Fiscal Year 1993	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Analyze impact on cave flora and fauna from a fire of known duration and intensity.		

PARK	El Morro		
PROJECT TITLE	Microgeology Study		
FUNDING SOURCE	Small Parks NRPP	AMOUNT	\$1,774
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	Aaron Cross
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1996
ABSTRACT	Samples of rock have been taken for laboratory analysis to compose a micro-geology map of a type section near the inscriptions on the El Morro outcrop. This project will aid in protection of the fragile historic and prehistoric inscriptions.		

TECHNICAL CATEGORY	CAVE AND GEOLOGIC RESOURCES
---------------------------	------------------------------------

PARK	Flagstaff Area Office parks		
PROJECT TITLE	Bat Gate/Transfer Funds		
FUNDING SOURCE	Regional Science	AMOUNT	\$4,200
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	Todd Metzger
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1996
ABSTRACT	A scope of work and project statements were written and transmitted to the park. As a result of this, a micro-climate study was begun in the ice cave (Sunset Crater) in April of 1995 and expected to continue being monitored through April of 1996. A cave gating expert was brought in to work on design specifications for the cave gate and a follow-up visit was made to coordinate the design with the maintenance staff. Gate construction will begin in May of 1996.		

PARK	Petroglyph		
PROJECT TITLE	Inventory and Evaluate Caves		
FUNDING SOURCE	NRPP	AMOUNT	\$2,500
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	Reed McClusky
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1996
ABSTRACT	A comprehensive inventory and survey report is being prepared by the Sandia Grotto of the National Speleological Society of four known lava tube caves within Petroglyph National Monument. This report will include the following: Identification and characterization of the lava tubes within the current boundaries of the Monument, cartographic surveys of all known caves and base line resource inventories.		

PARK	Servicewide		
PROJECT TITLE	Caves Project		
FUNDING SOURCE	NRPP	AMOUNT	\$5,000
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	N/A
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	An account was established to assist with cave management activities servicewide. The Western Region cave specialist attended a workshop on cave management issues/NPS-77 update at Buffalo National River; a cave gating expert was brought in to design a cave gate at Sunset Crater; site visits to cave National Natural Landmark sites in Virginia and site visit/recommendations for protection/interpretation of a cave and karst area in Shenandoah; Carlsbad Caverns cave specialist attended the National Speleological Society Convention to present a session on cave management and address issues on listing Federal caves.		

TECHNICAL CATEGORY	CAVE AND GEOLOGIC RESOURCES
---------------------------	------------------------------------

PARK	Southwest Region		
PROJECT TITLE	Buffalo Regional Cave Workshop		
FUNDING SOURCE	Regional Science	AMOUNT	\$6,135
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	Chuck Bitting
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	The Regional Cave workshop and seminar was held in Harrison, Arkansas, with 15 employees in attendance, including WASO, Western Region, and BLM personnel. The following topics were addressed: Regional significant caves nominations, status report from the parks, recent OSHA regulations concerning confined spaces as applied to caves, multi-agency cave/karst MOUs, a redefinition of the current NPS-77 Cave Management Section, beyond cave classification systems, developing cave survey standards and cave monitoring protocols, cave for pay groups and cave user fees, and circuit riding cave/karst specialists and cave management competency.		

TECHNICAL CATEGORY	ENVIRONMENTAL QUALITY PROGRAM
---------------------------	--------------------------------------

PARK	El Malpais		
PROJECT TITLE	Take Pride in America		
FUNDING SOURCE	Regional Science	AMOUNT	\$1,500
PROJECT MANAGER	Bob Howard	PARK CONTACT	Doug Eury
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Ernie Hart, the President of Los Amigos del Malpais (Friends of El Malpais) was presented the national "Take Pride in America" award in Washington, D.C., because of the chapter's work at El Malpais NP. This funding was used to assist with his travel and per diem.		

TECHNICAL CATEGORY	ENVIRONMENTAL QUALITY PROGRAM
---------------------------	--------------------------------------

PARK	Guadalupe Mountains		
PROJECT TITLE	Visitor Survey		
FUNDING SOURCE	Regional Science	AMOUNT	\$10,000
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	Fred Armstrong
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1998
ABSTRACT	The support office funded a visitor use study to identify ethnographic or traditional uses of park resources by visitors, visitor perception of crowding and solitude in the park backcountry, and visitor perceptions on the level of developed, available, or desirable services. The project is being conducted through a cooperative agreement with the University of Texas at El Paso.		

PARK	Division of Environmental Coordination		
PROJECT TITLE	Support Mineral Management		
FUNDING SOURCE	Regional Science	AMOUNT	\$4,000
PROJECT MANAGER	Linda Dansby	PARK CONTACT	Linda Dansby
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1996
ABSTRACT	These funds helped to support mine closures and the development of a minerals management plan at Padre Island.		

TECHNICAL CATEGORY	GEOGRAPHICAL INFORMATION SYSTEMS
---------------------------	---

PARK	Guadalupe Mountains		
PROJECT TITLE	GIS Intern		
FUNDING SOURCE	Regional Science	AMOUNT	\$1,200
PROJECT MANAGER	Milford Fletcher	PARK CONTACT	N/A
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	To fund a cooperative education student to digitize vegetation, watershed, and fire history maps.		

TECHNICAL CATEGORY**GEOGRAPHICAL INFORMATION SYSTEMS**

PARK	Southwest GIS Center		
PROJECT TITLE	GIS Operations		
FUNDING SOURCE	WASO	AMOUNT	\$40,000
PROJECT MANAGER	Milford Fletcher	PARK CONTACT	N/A
PROJECT START DATE	Fiscal Year 1994	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Purchase computer equipment and sponsor EPPL7 classes.		

PARK	Southwest GIS Center		
PROJECT TITLE	GIS/Support Assistance		
FUNDING SOURCE	Regional Science	AMOUNT	\$7,820
PROJECT MANAGER	Milford Fletcher	PARK CONTACT	N/A
PROJECT START DATE	Fiscal Year 1994	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	To fund a cooperative education student from the University of New Mexico.		

PARK	White Sands		
PROJECT TITLE	Upgrade GIS Computer		
FUNDING SOURCE	Regional Science	AMOUNT	\$4,000
PROJECT MANAGER	Milford Fletcher	PARK CONTACT	Bill Fuchs
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Regional Science funds were provided to White Sands NM for computer hardware.		

TECHNICAL CATEGORY	GLOBAL CHANGE
---------------------------	----------------------

PARK	Big Thicket		
PROJECT TITLE	Tree Ring Study		
FUNDING SOURCE	Global Climate/NBS	AMOUNT	(NBS funding - transferred directly to park. \$40,000)
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	Rick Strahan
PROJECT START DATE	Fiscal Year 1993	EXPECTED END DATE	Fiscal Year 1997
ABSTRACT	Evaluate effects of global change via tree ring analysis. This project is under a Cooperative Agreement with Columbia University.		

PARK	Big Thicket		
PROJECT TITLE	Gulf Coast Study		
FUNDING SOURCE	Global Climate/NBS	AMOUNT	(NBS funding - transferred directly to park. \$102,000)
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	Rick Strahan
PROJECT START DATE	Fiscal Year 1993	EXPECTED END DATE	Fiscal Year 1997
ABSTRACT	Evaluate the effects of global climate change on the vegetation of BITH, with a Cooperative Agreement with Rice University.		

PARK	Big Thicket		
PROJECT TITLE	Administrative Costs		
FUNDING SOURCE	Global Climate/NBS	AMOUNT	(NBS funding - transferred directly to park. \$10,000)
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	Rick Strahan
PROJECT START DATE	Fiscal Year 1993	EXPECTED END DATE	Fiscal Year 1997
ABSTRACT	This is funding to cover the salary, travel, and other miscellaneous administrative costs to the two global change projects.		

TECHNICAL CATEGORY	INTEGRATED PEST MANAGEMENT
---------------------------	-----------------------------------

PARK	Lyndon B. Johnson		
PROJECT TITLE	Weed Survey and IPM Plan		
FUNDING SOURCE	NRPP	AMOUNT	\$9,575
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Jack Bixby
PROJECT START DATE	Fall 1994	EXPECTED END DATE	Fall 1996
ABSTRACT	This project involves a weed survey of the park and the preparation of an IPM plan for weeds.		

PARK	Lyndon B. Johnson		
PROJECT TITLE	Entomological Survey and IPM Plan		
FUNDING SOURCE	Small Parks NRPP	AMOUNT	\$26,400
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Jack Bixby
PROJECT START DATE	Fall 1994	EXPECTED END DATE	Fall 1996
ABSTRACT	Study biological pests and prepare an Integrated Pest Management Plan for the park which covers all the known agricultural, forestry, and structural pests. This includes invertebrate pest species.		

PARK	Salinas Pueblo Missions/Big Bend/White Sands/Guadalupe Mountains/El Morro/Fort Davis/Chaco Culture		
PROJECT TITLE	IPM Contract		
FUNDING SOURCE	Regional Science	AMOUNT	\$19,300
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	IPM Coordinators
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Several contracts were let with G&L Consultants to write IPM plans for seven parks and review and edit a plan prepared by an eighth park (Hot Springs). To date, the seven parks have been visited and trip reports have been written. The project is scheduled for completion in Fiscal Year 1996.		

TECHNICAL CATEGORY	INVENTORY AND MONITORING
---------------------------	---------------------------------

PARK	Fort Davis		
PROJECT TITLE	Plant Survey		
FUNDING SOURCE	Regional Science	AMOUNT	\$9,025
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Allen Morris
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1996
ABSTRACT	This project is being accomplished via a cooperative agreement with the Chihuahuan Desert Research Institute. The principal investigator is a graduate student at Sul Ross State University, Texas. This vegetation survey is a two year study; work began in the latter half of Calendar Year 1995.		

PARK	Pecos		
PROJECT TITLE	Soil Survey		
FUNDING SOURCE	Servicewide I&M Funds	AMOUNT	\$20,800 (Washington Office I&M) \$ 1,840 (SW System Support Office)
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Bobbi Simpson
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1996
ABSTRACT	This contract was let with Soil and Water West, Inc., to perform a park-wide soil survey. Work is underway; subsequent soil data correlation will be done by the NRCS. The wording on the contract is suitable for use as a template at other parks. Considerable coordination is taking place with cultural resource specialists.		

PARK	Southwest Region		
PROJECT TITLE	Park Bibliography Projects		
FUNDING SOURCE	Servicewide I&M Funds	AMOUNT	\$272,600
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Park RMS
PROJECT START DATE	June 1994	EXPECTED END DATE	June 1996
ABSTRACT	A Cooperative Agreement has been signed with the University of Idaho's National Biological Survey Center to develop an automated bibliographical data-base using ProCite software for the 30 parks in the Southwest region which are designated as Inventory and Monitoring parks. The bibliography will cover the known natural resource research that has been accomplished in and around each park. (The I&M parks in Southern Arizona will be covered by a cooperative agreement established between the former Western Regional Office and the CPSU at NAU.)		

TECHNICAL CATEGORY	NATIONAL BIOLOGICAL SERVICE
---------------------------	------------------------------------

PARK	Jean Lafitte		
PROJECT TITLE	Wetlands Model		
FUNDING SOURCE	NRPP-NBS	AMOUNT	\$100,000
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	David Muth
ABSTRACT	Develop major ecological model of Barataria Wetlands system to help NPS decide on management strategies.		

TECHNICAL CATEGORY	RESOURCE MANAGEMENT PROGRAM
---------------------------	------------------------------------

PARK	Buffalo National River		
PROJECT TITLE	Streambank Restoration		
FUNDING SOURCE	NRPP	AMOUNT	\$158,000
PROJECT MANAGER	Bob Howard	PARK CONTACT	David Mott
PROJECT START DATE	Spring 1994	EXPECTED END DATE	Fiscal Year 1996
ABSTRACT	Stabilize eroding banks of the Buffalo River by establishing cedar tree revetments and other "natural" protective structures at key sites. Well-developed protocols exist from Ozark National Scenic Riverways and have been tested in small projects previously at Buffalo National River.		

PARK	Southwest Region		
PROJECT TITLE	Park Science Transfer Funds		
FUNDING SOURCE	Regional Science	AMOUNT	\$3,000
PROJECT MANAGER	N/A	PARK CONTACT	N/A
PROJECT START DATE	Fiscal Year 1994	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Money transferred to support Park Science.		

TECHNICAL CATEGORY	RESOURCE MANAGEMENT PROGRAM
---------------------------	------------------------------------

PARK	Southwest Region		
PROJECT TITLE	Details and Circuit Riders		
FUNDING SOURCE	Regional Science	AMOUNT	\$7,000
PROJECT MANAGER	Bob Howard	PARK CONTACT	N/A
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	The details included a fire specialist from Carlsbad Caverns assisting Lake Meredith with it's fire program; the Organ Pipe Chief's of Natural Resources detail to assist Washington Office with NRPP projects; superintendents assisting on panels for NRPP, RMAP and Regional Science funds, and a cave gate specialist's assistance to Sunset Crater for a gate project.		

TECHNICAL CATEGORY	THREATENED & ENDANGERED SPECIES
---------------------------	--

PARK	Big Bend		
PROJECT TITLE	Blackcapped Vireo Survey		
FUNDING SOURCE	Regional Science	AMOUNT	\$1,800 SWSsystem Support Office \$1,500 Big Bend
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Mike Fleming
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	This effort has been an ongoing project since 1984. Twenty-four birds were identified in 1994. Thirty-two birds were identified in 1995. The trend since 1989 appears to be upward.		

PARK	Capulin Volcano		
PROJECT TITLE	Endangered Species Inventory		
FUNDING SOURCE	Regional Science	AMOUNT	\$12,372
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	John Batzer
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	This is a two year study employing a cooperative agreement with the University of New Mexico. The survey covers both plants and animals. The initial planning meeting took place at the university this fall and preliminary work is underway.		

TECHNICAL CATEGORY	THREATENED & ENDANGERED SPECIES
---------------------------	--

PARK	Navajo		
PROJECT TITLE	Endangered Species Survey		
FUNDING SOURCE	Regional Science	AMOUNT	\$23,100
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Russ Bodnar
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1996
ABSTRACT	This is a two year study being accomplished via a cooperative agreement with the NBS CPSU at Northern Arizona University. The survey covers both plants and animals. The initial planning meeting took place in the park last autumn and preliminary work is underway.		

TECHNICAL CATEGORY	VEGETATION
---------------------------	-------------------

PARK	Aztec Ruins		
PROJECT TITLE	Control Exotic Plants		
FUNDING SOURCE	Regional Science	AMOUNT	\$4,000
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Terry Nichols
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	This project involved the hiring of seasonal employees. Personnel physically removed weeds from ruin walls.		

PARK	Bandelier		
PROJECT TITLE	Revegetation Trials 3rd Year		
FUNDING SOURCE	Regional Science	AMOUNT	\$5,000
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Craig Allen
PROJECT START DATE	Fiscal Year 1992	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	A cooperative study with the Denver Service Center. This study tests native vegetation at Bandelier to determine those species that work best for revegetation of bare areas and for erosion control.		

TECHNICAL CATEGORY	VEGETATION
---------------------------	-------------------

PARK	Bandelier		
PROJECT TITLE	Resource Data Collection		
FUNDING SOURCE	Regional Science	AMOUNT	\$10,000
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Charisse Sydoriak
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	A crew has been hired to conduct a series of greenhouse and garden germination experiments, designed to determine whether pinon-juniper slash and/or litter have allelopathic effects on grass seed germination and the amount of viable seed in the soil that is available for germination.		

PARK	Big Thicket		
PROJECT TITLE	Survey Vegetation		
FUNDING SOURCE	Regional Science	AMOUNT	\$12,500
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Paul Whitefield
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	This study will be performed by the College of Forestry staff at Stephen F. Austin State University. Oil and gas well pads, previously studied ten years ago, will be re-examined to determine the re-establishment rates of various plant species under different conditions. This information can be used for future revegetation efforts, as well as be useful when the park's mineral management plan is written.		

TECHNICAL CATEGORY	VEGETATION
--------------------	------------

PARK	Capulin Volcano		
PROJECT TITLE	Ecological Restoration of Disturbed Land		
FUNDING SOURCE	Regional Science	AMOUNT	\$5,000
PROJECT MANAGER	Ron Kerbo	PARK CONTACT	John Batzer
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	A mixture of forb and grass seeds is being purchased to provide a viable mixture of necessary vegetation to the areas that are under rehabilitation. Included in this mixture will be nitrogen fixing forbs which are consistent with the short grass prairie. The disturbed areas include road edges between the housing area and the maintenance area that are subject to severe erosion due to slopes. These areas will be prepared prior to seeding; upon completion of seeding operations, mulch type matting will be put in place to prevent seed from being washed away.		

PARK	Carlsbad Caverns		
PROJECT TITLE	Restoration of Disturbed Areas		
FUNDING SOURCE	Regional Science	AMOUNT	\$5,000
PROJECT MANAGER	Bob Howard	PARK CONTACT	Gary Vequist
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	The staff moved the head of the Lechuguilla Cave trail to a more durable location and replaced the top soil in the severely eroded former trail. The soil was collected locally from culverts and from erosion from a burn area. This soil had native seed and has already begun to sprout in the trail area. The parking lot was moved and the eroded area was revegetated with locally collected soil. Some small succulents and shrubs were replanted in impacted areas.		

PARK	El Morro		
PROJECT TITLE	Fuel Reduction		
FUNDING SOURCE	Small Parks NRPP Fire Program	AMOUNT	\$9,700
PROJECT MANAGER	Jerry McCrear	PARK CONTACT	Tom Townley
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Under the guidance of (and with additional funding from) the Fire Program office, a substantial amount of woody fuel was removed from the park's developed zone. A crew from Bandelier National Monument did the work. The park's staff hopes to continue this program in the future.		

TECHNICAL CATEGORY	VEGETATION
---------------------------	-------------------

PARK	Fort Smith		
PROJECT TITLE	Landscaping with Native Vegetation		
FUNDING SOURCE	Regional Science	AMOUNT	\$3,000
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Bill Black
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	A contractor was used to landscape three acres with native trees and shrubs. The plantings provide sound buffering and/or visual screening from a parking lot and from a stamp mill.		

PARK	Palo Alto Battlefield		
PROJECT TITLE	Prepare Cultural Landscape Report		
FUNDING SOURCE	Small Parks NRPP	AMOUNT	\$10,000
PROJECT MANAGER	Bob Howard	PARK CONTACT	Peggy Nelson
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	The funds were transferred to the Denver Service Center General Management Plan team to emphasize the natural resource portions of the Cultural Resource Plan. The GMP is to be finished in 1997.		

TECHNICAL CATEGORY	WATER RESOURCES
---------------------------	------------------------

PARK	Bandelier		
PROJECT TITLE	Operate NAWQA Station		
FUNDING SOURCE	Water Resources	AMOUNT	\$6,000
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	Charisse Sydoriak
PROJECT START DATE	Fiscal Year 1992	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Interagency Agreement with the U.S. Geological Survey to establish and monitor a water quality assessment site on Frijoles Creek as part of the Rio Grande Basin National Water Quality Assessment Program (NAWQA) effort.		

TECHNICAL CATEGORY	WATER RESOURCES
---------------------------	------------------------

PARK	Big Thicket		
PROJECT TITLE	Water Corridor Management Plan		
FUNDING SOURCE	NRPP	AMOUNT	\$80,000
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	Rick Strahan
PROJECT START DATE	September 1992	EXPECTED END DATE	September 1995
ABSTRACT	Conduct interdisciplinary investigations into ecological, physical, social, and political concerns relating to managing water corridor units of Big Thicket. Prepare a water corridor management plan. This is a cooperative project with Rice University.		

PARK	Buffalo National River		
PROJECT TITLE	Inventory/Map Riparian Zone		
FUNDING SOURCE	Water Resources	AMOUNT	\$23,000
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	David Mott
PROJECT START DATE	Fiscal Year 1994	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Map wetlands and riparian zone of Buffalo National River. Characterize plant species associations and describe vegetative changes.		

PARK	Buffalo National River		
PROJECT TITLE	Monitor Rain Events		
FUNDING SOURCE	Water Resources	AMOUNT	\$12,500
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	David Mott
PROJECT START DATE	Fiscal Year 1994	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Under a Cooperative Agreement with the Arkansas Water Resources Research Center, develop a water quality monitoring system to determine short-term impacts of storm events. Determine impact of land use on water quality of the Buffalo River and three tributaries. This is the second of a two year project.		

TECHNICAL CATEGORY	WATER RESOURCES
---------------------------	------------------------

PARK	Buffalo National River		
PROJECT TITLE	Develop Water Quality Biomonitoring		
FUNDING SOURCE	Water Resources	AMOUNT	\$15,000
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	David Mott
PROJECT START DATE	Fiscal Year 1993	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Under a cooperative agreement with the University of Central Arkansas, devise a biological water quality monitoring program. Investigate a relationship between physiochemical characteristics and community structure.		

PARK	Pecos		
PROJECT TITLE	Water Quality Condition Assessment		
FUNDING SOURCE	Water Resources	AMOUNT	\$25,000
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	Bobbi Simpson
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Highlands University is evaluating the water quality of the Pecos River, using both chemical and biological techniques.		

TECHNICAL CATEGORY	WILDLIFE
---------------------------	-----------------

PARK	Bandelier		
PROJECT TITLE	Ungulate Impacts Study		
FUNDING SOURCE	Regional Science	AMOUNT	\$1,200
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Charisse Sydoriak
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1999
ABSTRACT	Elk populations are growing exponentially and threaten archeological sites and plant communities with subsequent erosion problems. This project further studies impacts in management options based on these investigations.		

TECHNICAL CATEGORY**WILDLIFE**

PARK	Bandelier		
PROJECT TITLE	Eradicate Feral Burros		
FUNDING SOURCE	Regional Science	AMOUNT	\$3,000
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Steven Fetting
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	A former U.S. Border Patrol tracker was hired to survey the park for burros. This work was done in October. Evidence of only one was found and it's territory is divided between Bandelier and Dept. of Energy land. If the burro return, it will be eliminated from the park. These are significant results, for they strongly indicate that the court ordered burro removal has been successful.		

PARK	Buffalo National River		
PROJECT TITLE	Fresh Water Mussels		
FUNDING SOURCE	Regional Science	AMOUNT	\$10,000
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	David Mott
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	The researcher examined all of the mussel beds which were documented in a paper published in 1912. Additional mussel beds were also documented as part of the new study. Despite being harvested for mother-of-pearl in years past, the mussel fauna's species richness had not changed since 1912.		

PARK	Buffalo National River		
PROJECT TITLE	Neotropical Migratory Bird Initiative		
FUNDING SOURCE	Regional Science	AMOUNT	\$10,000
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	John Apel
PROJECT START DATE	Fiscal Year 1994	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	One element of this work is a master's thesis which focuses on nest survival in floodplains versus cleared riparian lands. Another element of the project is a breeding bird survey. Twelve breeding bird surveys were completed in the park.		

TECHNICAL CATEGORY	WILDLIFE
---------------------------	-----------------

PARK	Jean Lafitte		
PROJECT TITLE	Monitor Neotropical Migrant Population		
FUNDING SOURCE	Regional Science	AMOUNT	\$2,000 \$1,000 (Jean Lafitte funds)
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	David Muth
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	For \$1,500, a researcher conducted a breeding bird point count census in the Barataria Unit. Surveys were done at 100 points in the Preserve. The protocol and some/all of the census points will be used for future monitoring projects. For another \$1,500 (\$1,000 park funds), a second researcher sampled woodlots contiguous/noncontiguous with the Barataria Unit. This was done to determine how widely the forest birds found in the park are distributed in nearby, more developed areas of New Orleans.		

PARK	Padre Island		
PROJECT TITLE	Survey Neotropical Migratory Birds		
FUNDING SOURCE	Regional Science	AMOUNT	\$6,000
PROJECT MANAGER	Sam Kunkle	PARK CONTACT	John Miller
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	This project is to analyze migration patterns. This was the second year of a spring & fall monitoring effort. In the spring, over 1,000 birds were caught, weighed, measured, and banded. In the fall, 600 birds were processed. Five new species were recorded, including the cerulean warbler, a federal category 2 species.		

PARK	Pea Ridge		
PROJECT TITLE	Whitetail Deer Survey		
FUNDING SOURCE	Small Parks NRPP	AMOUNT	\$6,550
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	John Knox
PROJECT START DATE	Fiscal Year 1995	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	In cooperation with the Missouri Department of Game and Fish, an infra-red survey was flown to census deer. In conjunction with the University of Arkansas, three deer enclosures were established. These efforts contribute toward a better understanding of the effects of deer on the park.		

TECHNICAL CATEGORY	WILDLIFE
---------------------------	-----------------

PARK	Pecos		
PROJECT TITLE	Small Mammal Inventory		
FUNDING SOURCE	Denver Service Center	AMOUNT	(Denver Service Center funding - transferred directly to park. \$4000)
PROJECT MANAGER	Jerry McCrea	PARK CONTACT	Bobbi Simpson
PROJECT START DATE	Spring 1994	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	Survey mammals at proposed development areas. This project is conducted in cooperation with the University of New Mexico.		

PARK	White Sands		
PROJECT TITLE	Oryx Fencing		
FUNDING SOURCE	NRPP	AMOUNT	\$142,000
PROJECT MANAGER	Bob Howard	PARK CONTACT	Bill Fuchs
PROJECT START DATE	Fiscal Year 1992	EXPECTED END DATE	Fiscal Year 1995
ABSTRACT	The fence was approximately 60 % complete in December, 1995. The projection is to finish in the spring of 1996.		

Appendix E

List of Parks

Former Southwest Region parks

Alibates Flint Quarries National Monument, Texas
Amistad National Recreation Area, Texas
Arkansas Post National Memorial, Arkansas
Aztec Ruins National Monument, New Mexico
Bandelier National Monument, New Mexico
Big Bend National Park, Texas
Big Thicket National Preserve, Texas
Buffalo National River, Arkansas
Canyon de Chelly, Arizona
Capulin Volcano National Monument, New Mexico
Carlsbad Caverns National Park, New Mexico
Chaco Culture National Historical Park, New Mexico
Chamizal National Memorial, Texas
Chickasaw National Recreation Area, Oklahoma
El Malpais National Monument, New Mexico
El Morro National Monument, New Mexico
Fort Davis National Historic Site, Texas
Fort Smith National Historic Site, Arkansas
Fort Union National Monument, New Mexico
Gila Cliff Dwellings National Monument, New Mexico
Guadalupe Mountains National Park, Texas
Hot Springs National Park, Arkansas
Hubbell Trading Post National Historic Site, Arizona
Jean Lafitte National Park & Preserve, Louisiana
Lake Meredith National Recreation Area, Texas
Lyndon B. Johnson National Historical Park, Texas
Navajo National Monument, Arizona
Padre Island National Seashore, Texas
Palo Alto Battlefield National Historic Site, Texas
Pea Ridge National Military Park, Arkansas
Pecos National Historical Park, New Mexico
Petroglyph National Monument, New Mexico
Rio Grande Wild and Scenic River, Texas
Salinas Pueblo Missions National Monument, New Mexico
San Antonio Missions National Historical Park, Texas
Sunset Crater Volcano National Monument, Arizona

Walnut Canyon National Monument, Arizona
White Sands National Monument, New Mexico
Wupatki National Monument, Arizona

Intermountain Field Area, Southwest Cluster parks

Alibates Flint Quarries National Monument, Texas
Amistad National Recreation Area, Texas
Bandelier National Monument, New Mexico
Big Bend National Park, Texas
Big Thicket National Preserve, Texas
Capulin Volcano National Monument, New Mexico
Carlsbad Caverns National Park, New Mexico
Casa Grande Ruins National Monument, Arizona
Chamizal National Memorial, Texas
Chickasaw National Recreation Area, Oklahoma
Chiricahua National Monument, Arizona
Coronado National Memorial, Arizona
Fort Bowie National Historic Site, Arizona
Fort Davis National Historic Site, Texas
Fort Union National Monument, New Mexico
Gila Cliff Dwellings National Monument, New Mexico
Guadalupe Mountains National Park, Texas
Hohokam Pima National Monument, Arizona
Lake Meredith National Recreation Area, Texas
Lyndon B. Johnson National Historical Park, Texas
Montezuma Castle National Monument, Arizona
Organ Pipe Cactus National Monument, Arizona
Padre Island National Seashore, Texas
Palo Alto Battlefield National Historic Site, Texas
Pecos National Historical Park, New Mexico
Petroglyph National Monument, New Mexico
Rio Grande Wild and Scenic River, Texas
Saguaro National Monument, Arizona
Salinas Pueblo Missions National Monument, New Mexico
San Antonio Missions National Historical Park, Texas
Tonto National Monument, Arizona
Tumacacori National Historical Park, Arizona
Tuzigoot National Monument, Arizona
White Sands National Monument, New Mexico