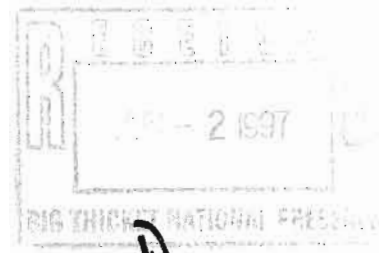




United States Department of the Interior

NATIONAL PARK SERVICE
INTERMOUNTAIN FIELD AREA
Southwest Support Office
P. O. Box 728
Santa Fe, New Mexico 87504-0728



In reply refer to:
N2621 (SW-PNS)

MAY 30 1997

Memorandum

To: Pete Peterson, Superintendent, Big Thicket National Preserve

From: Program Leader, Natural Resources

Subject: 1996 Annual Report - Natural Resources Program

Please find attached the 1996 Annual Report of the Natural Resources Program. This report provides highlights of the significant accomplishments of the Natural Resources Program during the previous fiscal year and identifies funded projects and technical assistance carried out by the program staff.

I appreciate your support of the Southwest Support Office's (SWSO's) Natural Resource Program. Please contact me if you have any questions regarding the attached Annual Report or other aspects of the SWSO's Natural Resource Program (505-988-6862).

Attachment

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1825

STAFF

NANCY SKINNER* Program Leader (505) 988-6862	National Biological Service (NBS) Liaison; Global Climate Change Program (GCP); Water Resources; National Environmental Policy Act (NEPA) Compliance; Forestry; Fire; Wildlife; and Threatened and Endangered (T&E) Species Program.
JERRY MCCREA Biologist (505) 988-6829	Integrated Pest Management (IPM) Program; Inventory & Monitoring (I&M) Program; T&E Program; Wildlife Biology ; Fisheries Management; Vegetation Management.
DR. MARGI BROOKS National Natural Landmarks Coordinator (520) 670-6501 x232	National Natural Landmarks Program; Erosion; Revegetation; Cooperative Agreements; Landscape Architect.
CINDY PHARES Program Analyst/ Cooperative Agreement Specialist (505) 988-6714	Program Analyst; Cooperative Agreements Specialist.
DARLA HERRERA Program Assistant (505) 988-6870	Administrative Support to Program Leader and Program Managers.
ROBERT HOWARD** Resource Management Specialist (505) 988-6867	Resource Management Plans; Investigator's Annual Report; Natural Recreation & Preservation Program (NRPP); Resource Management Assessment Program (RMAP); and Consolidated Program Call.
DR. SAMUEL KUNKLE*** Program Leader (505) 988-6862	Management of the Natural Resources Program; Global Climate Change Programs; Liaison with Water and Air Resources.

* Assumed Program Leader Responsibilities, February 1996

** Transferred to LYJO, November 1996

*** Retired, February 1996

COOPERATORS / UNIVERSITIES

Biological Resources Division - USGS
Lafayette, Louisiana

Biological Resources Division - USGS
Midcontinent Ecological Science Center
Fort Collins, Colorado

Biological Resources Division - USGS
Tucson, Arizona

Biological Resources Division
Flagstaff, Arizona

Chihuahuan Desert Research Institute
Alpine, Texas

College of Santa Fe
Santa Fe, New Mexico

Colorado School of Mines
Golden, Colorado

Colorado State University
Fort Collins, Colorado

Columbia State University
New York, New York

Ector County
Odessa, Texas

Highlands University
Las Vegas, New Mexico

New Mexico Department
of Game and Fish
Santa Fe, New Mexico

Northern Arizona University
Flagstaff, Arizona

Ruth Hall Museum of Paleontology
at Ghost Ranch
Abiquiu, New Mexico

San Juan College
Farmington, New Mexico

Stephen F. Austin State University
Nacodoches, Texas

Southwest Texas State University
San Marcos, Texas

State of New Mexico
Energy & Natural Resources Division
Santa Fe, New Mexico

Sul Ross State University
Alpine, Texas

Texas A&M University
College Station, Texas

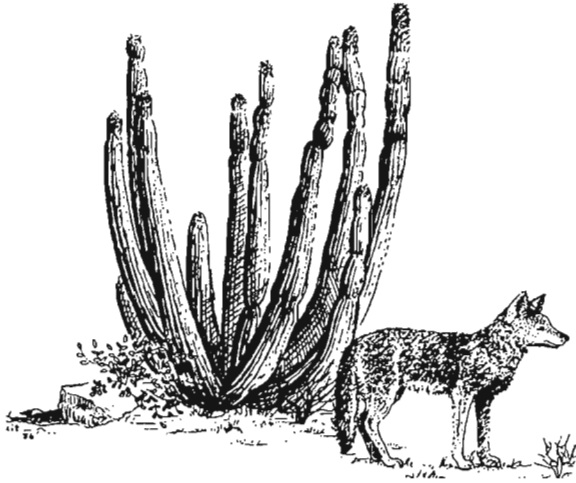
The Nature Conservancy of Texas
Austin, Texas

The Student Conservation Association, Inc.
Charleston, New Hampshire

University of Arizona
Tucson, Arizona

University of Arkansas
Little Rock, Arkansas

EXECUTIVE SUMMARY



Fiscal Year 1996 continued to be a year of great change, as we responded to the new organization resulting from a restructured National Park Service (NPS). In addition to the changes brought about by restructuring, we also experienced changes in Southwest Support Office (SWSO) Natural Resource Program staffing.

The Regional Chief of Resource Management transferred in December 1994, and this position remains vacant. The Chief Scientist retired in February 1996, and was replaced by the Program Leader. The Program Leader role is somewhat different from the former Chief Scientist role. This office no longer has responsibility for Geographic Information System (GIS) services; the GIS program now serves the Intermountain Region, and is separate from the region's three support offices' natural resource programs. The Program Leader position includes new responsibilities serving as natural resources program agent.

The program agent's role is to facilitate the annual Natural Resources call for proposals using processes specified in the Intermountain Region Special Emphasis Program Allocation System document. The former Environmental Quality Program no longer exists; however, the Southwest Support Office Natural Resource Program office provides technical assistance to parks on National Environmental Policy Act and Endangered Species Act compliance issues. Finally, the National Natural Landmarks Program now resides with the Natural Resource Program; in July 1996, we filled the National Natural Landmark Coordinator position.

The focus of the Natural Resource Program in 1996 has been to emphasize technical and program support to parks as our principal services. The assistance we provide consists of technical advice in the field; help with contracts and cooperative agreements; and providing information and professional contacts for technical assistance.

In the face of a smaller program staff, we began an "affiliates program" this year. An affiliate is a park resource manager with special expertise who accepts a detail assignment to assist another park or the Santa Fe based program on a specific project. Not only does this approach address specific park and cluster needs with the special expertise required, but it also serves to develop park resource management staff by broadening their experiences. We think that this is a very effective way to address

DISTRIBUTION OF FUNDS

This table shows the distribution of funds by project category throughout the Southwest Parks for FY 1996. For more detailed information on FY 1996 project funding, please refer to Appendix A, as well as the

detailed program descriptions in the following pages. For information on continuing natural resource projects, refer to Appendix B.

Source of Natural Resource Funds	Amount Spent
Natural Resource Project Funds	\$266,000
Water Resources	\$ 95,000
NRPP-Small Park	\$ 29,000
Air Quality	\$ 38,000
Environmental Quality	\$ 12,000
TOTAL	\$ 440,000

RESOURCE MANAGEMENT PLANS

As an essential document for each park, the 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 management program.

The RMP has two parts: (1) the narrative section; and (2) the computerized database, which is composed of project statements. *Most of the parks in the Southwest Cluster have submitted their computerized databases.* The majority of the parks have completed both the narrative section and the database in the past 2 years, and now have a current, signed RMP.

In those cases in which RMPs are being completed, the narrative is usually the component still being drafted.

For natural resources, the Washington Office (WASO) has required a current, signed RMP since 1991 for project funds. (Strict adherence began in FY 1994). The Intermountain Region also requires a current, signed RMP for Intermountain project money. At present, the incomplete set of RMP from the Southwest Cluster has reduced the amount of small park NRPP funding available to Southwest parks from WASO. We anticipate that RMPs will be completed by the end of FY 1997. Appendix C lists names and acronyms of parks within the southwest cluster. Appendix E provides additional information on the Intermountain Region Natural Resource Fund.

Park	Comments	Current, Signed RMP
AMIS		No
BAND	Completed 01/16/95	Yes
BIBE	Completed 01/06/95	Yes
BITH	Completed 12/30/96	Yes
CAGR	Completed 12/13/96	Yes
CAVO	Completed 12/04/96	Yes
CAVE	Completed 11/03/94	Yes

Park	Comments	Current, Signed RMP
TUMA	Completed 12/14/94	Yes
TUZI	Completed 02/20/96	Yes
WHSA	Completed 01/06/95	Yes

BIOLOGY PROGRAMS

INTEGRATED PEST MANAGEMENT

A major emphasis in this program has been on the use of a contractor to draft Integrated Pest Management (IPM) plans for the following parks: Big Bend NP, Salinas Pueblo Missions NM, White Sands NM, Guadalupe Mountains NP, El Morro NM, Fort Davis NHS, Hot Springs NP, and Chaco Culture NHP. Comprehensive drafts for these plans have been received, and they are in the process of being edited. The target for completing the final editing is this spring.

Due to demand, two more contracts were let for the production of IPM plans in eight additional parks: Pecos NHP, Chickasaw NRA, Carlsbad Caverns NP, Chamizal NMem, Lake Meredith NRA, Alibates Flint Quarries NM, Big Thicket NP, and Amistad NRA.

A wide variety of other activities occurred during the fiscal year, including continued research on IPM issues at Lyndon B. Johnson NHP by Texas A&M staff. The cooperative agreement for this project will conclude with the issue of a final report in the form of an IPM plan. This is scheduled for the spring of 1997.

Another item is collaboration with the U.S. Fish and Wildlife Service and our agency's Servicewide IPM coordinator on a multi-agency tamarisk management package, which is being sent to Washington. Senator Reid of Nevada is interested in this subject. The objective is to garner funding to help a

large number of agencies address this serious exotic species problem.

On the technical side, the program biologist obtained an experimental use permit from the Arizona State Department of Agriculture to use acephate to manage bee colonies that had become established near the Upper and Lower Ruins at Tonto NM. (The bees had stung ruins stabilization workers, who often work on scaffolds; they posed a risk to visitors as well). This work, performed by a scientist from the Agricultural Research Service's Carl Hayden Bee Lab, led to the discovery that the exotic varroa mite had infested some of the bees, despite the remoteness of the park from commercial honey bee operations. At this time, the colonies have been virtually eliminated, based on mites, acephate, and the application of fire-fighting foam. (The last was applied at Tonto NM's Lower Ruins).

Finally, the Southwest Support Office biologist has been advising a biologist in the Washington Office on how to pursue the latter's innovative training idea: The concept involves two Federal departments that would work together to offer IPM program management training opportunities to individuals who desire to remove themselves from welfare. To date, the idea has been favorably received. If it reaches fruition, individuals would acquire new job skills, and parks would benefit by having a new source of labor available (at no cost), because NPS sites would be utilized as pest management training areas.

THREATENED & ENDANGERED SPECIES

- Served on the White Sands Pupfish Conservation Team, which is an outgrowth of a multi-agency conservation agreement.
- Arranged for Brian Jacobs, Resource Management Specialist at Bandelier NM, to attend the New Mexico Plant Recovery Team meeting when the biologist was unable to attend.
- Composed and submitted the FY 1995 T&E species expenditure report to WASO.
- In general, considered T&E species ramifications when advising parks on IPM, I&M, wildlife, fisheries, vegetation management, etc.
- Administered two cooperative agreements designed as T&E species surveys. One is for Capulin Volcano NM; the other is for Navajo NM.

VEGETATION

This year as part of our “affiliates program,” we arranged a detail assignment for Resource Management Specialist John Batzer, of Capulin Volcano NM. John assisted the staff at Chickasaw NRA by evaluating a large portion of the park that is proposed for a prairie restoration project. Our biologist and budget assistant also helped the Chickasaw NRA Resource Management Specialist with modifying an

existing cooperative agreement to obtain the assistance needed to research the site and write a restoration plan.

FISHERIES

- Conferred with the Chickasaw NRA staff on spindle cell tumors found on gizzard shad.
- Responded to an inquiry from the public on the saltmarsh topminnow.
- Disseminated information from the Washington Office to the field on National Fishing Week.

WILDLIFE

- Conferred with Amistad NRA staff on mouflon management.
- Advised Lake Meredith NRA staff on feral hog management.
- Provided rabies information to the staff of Lyndon B. Johnson NHP, due to the close proximity of a fox den in an area where rabies is endemic.
- Administered a cooperative agreement for armadillo management at Arkansas Post NMem.

BIOLOGICAL RESOURCES DIVISION U.S. GEOLOGICAL SURVEY



The former National Biological Service (NBS) continued to face numerous changes this year. The largest was the move to the U.S. Geological

Survey as the new Biological Resources Division (BRD). In the midst of these changes, we did manage to cooperate together on several fronts.

Bandelier NM benefited from the presence of our former NPS researcher, Dr. Craig Allen, now with the BRD, located at the Jemez Mountain Field Station within the monument. He continued his research into erosion processes this year. Padre Island National Seashore benefited from the presence of our former NPS researcher, Donna Shaver-Miller, now with the BRD, located within the national seashore. She continued her research on sea turtles this year.

The Sonoran Desert Global Change program was started in 1993 under the direction of the Cooperative Park Studies Unit at the University of Arizona and the National Park Service. It is a cooperative effort of Saguaro National Park, Organ Pipe Cactus National Monument, the University of Arizona (CPSU, Advanced Resources Technology Lab and the Tree Ring Lab), and the USGS

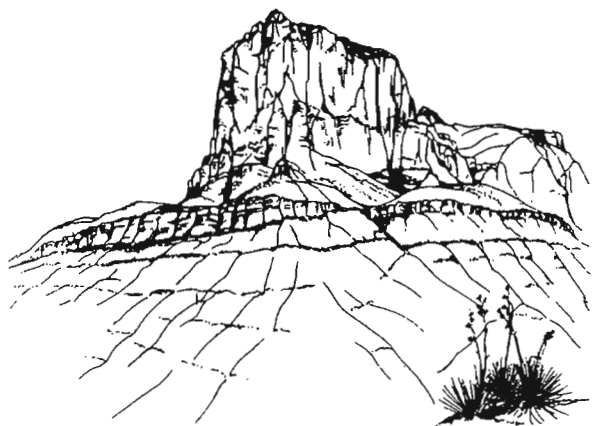
Desert laboratory in Tucson. The program has two main thrusts: a study to determine the climatic variations in the Sonoran Desert over the past 300-600 years using tree ring technology, and the development of a computerized model that relates climate change to changes in plant distribution across the Sonoran Desert.

Funding for the program has been \$118,000 per year for 5 years, with fiscal year 97 being the 5th and last year. In the reorganization of the Department of Interior, the program has been transferred from the National Park Service, to the National Biological Survey and then to the National Biological Service, and now to the U.S. Geological Survey.

The ten parks and one group office in Southern Arizona have worked with BRD/Cooperative Parks Studies Unit/University of Arizona (BRD/CPSU/UA) for more than 20 years. Since the BRD/Center for Colorado Plateau Studies/Northern Arizona University (BRD/CCPS/NAU) was created in the early 1990's, two parks and the group office have worked with this unit to some extent. For the projects listed below, NPS has typically provided the funding for research and resource management projects, while BRD has contributed professional expertise, staff time, and joint planning and coordination efforts.

Active research and management projects in Southern Arizona Parks in FY 1996 include

ENVIRONMENTAL QUALITY



FY 1996 was a year of dramatic restructuring for the Environmental Quality Program (formerly the Division of Environmental Coordination). In February 1996, the program joined the Natural Resource Program. However, only a portion of the program—internal assistance to parks on the National Environmental Policy Act (NEPA) and the Endangered Species Act—now resides in the Natural Resource Program Office.

We reengineered the process for NPS review and comment on external NEPA documents. Through the development of a screening and distribution system, parks now receive these compliance documents written by other agencies. The parks are responsible for preparing NPS comments, and occasionally Department of the Interior comments. This screening and distribution function resides with the Office of External Programs in the Southwest Support Office.

In response to staff reductions experienced in the Environmental Quality Program, our office, in conjunction with our cultural

Resource counterparts in Santa Fe, focused on the development of a 4-day NEPA/NHPA 106 Compliance Course. The course was taught twice in 1996—once in Scottsdale, Arizona, and once in San Antonio, Texas. Fifty-four NPS personnel were trained, including seven superintendents, with the majority of the participants from Southwest parks. The course was well received, and will be offered once more in 1997.

Natural Resource Program staff provided technical assistance to parks in the review of six park Environmental Assessments, including The Fire Management Plan for Chickasaw NRA, The Campground Electrical System Upgrade for Organ Pipe Cactus NM, The Prairie Dog Reintroduction for Guadalupe Mountains NP, Experimental Bat Gate Installation and Grazing Allotment Management Plans for Coronado NMem, and The Fire Management Plan for Montezuma Castle NM.

Our office also provided technical support to numerous parks in the areas of developing NEPA documents, public scoping, and Endangered Species Act compliance procedures.

WATER AND AIR RESOURCES

WATER RESOURCES



Our office's water resources projects and activities are carried out in conjunction with the NPS Water Resources Division (WRD) in Fort Collins, Colorado. A brief summary of these activities follows:

WRD provided support to Bandelier NM by initiating the Water Resources Management Plan for the monument. The Water Resources Management Plan for Big Bend NP, prepared cooperatively by Big Bend NP, the University of Arizona, and WRD, was completed.

Big Thicket NP is nearing completion of work on the Water Corridor Management Assessment, in cooperation with Rice University. A number of components of this study have been completed and furnished to Big Thicket NP, including issues for the Water Corridor Units, Institutional Inventory, Water Quality, Public Use Information, and Characterization of the Biological Resources of the Water Corridor Units.

Work on the Water Resources Management Plan for Chickasaw NRA progressed in 1996, and received \$50,000 in funding. Cooperators on the plan include Oklahoma

State University and WRD. Chickasaw NRA also received technical assistance and \$30,000 of financial assistance from WRD, in conjunction with the Bureau of Reclamation and the NPS Geologic Resources Division, to address the issue of the replacement of Vendome Well.

A new project initiated in 1996, and nearing completion at this writing, is the Water Resources Management Plan for Salinas Pueblo Missions NM. The plan is being prepared in cooperation with Colorado State University and WRD.

Work was completed in 1996 on the Saguaro NP Water Resources Scoping Report, which will be published in 1997.

Water Quality Condition Assessment work at Pecos NHP, in cooperation with Highlands University, nears completion, with all field work finished this past summer. This project received \$15,000 from WRD in FY 1996.

Big Bend NP received technical assistance in the form of a 2-day workshop, sponsored by the Biological Resource Division and WRD. The workshop focused on the development of a Legal and Institutional Analysis Model related to water rights issues.

WRD assisted our office in the presentation of two NEPA/Section 106 compliance courses held in Scottsdale, Arizona, and San Antonio, Texas. WRD presented information on Wetland/Floodplain guidelines compliance and the U.S. Army

NATIONAL NATURAL LANDMARKS

Assisting the SWSO staff with inspections were Resource Management staff from Bandelier NM, Capulin Volcano NM, Carlsbad Caverns NP, and Saguaro NP. Only one of the 22 sites visited was recommended for listing as a threatened or damaged site in the annual Section 8 Report to Congress. Assistance on NNL inspections was provided by: John Batzer, Capulin Volcano; Dale Pate and Jason Richards, Carlsbad Caverns; Stephen Fettig, Bandelier; and Mike Ward, Saguaro.

John Batzer visited Bueyeros Shortgrass Prairie; Stephen Fettig visited Ghost Ranch; Dale Pate and Jason Richards visited Fort Stanton Cave, Torgac Cave, Ezell's Cave, Natural Bridge Caverns, Lost Maples State Natural Area, Caverns of Sonora, Devil's Sinkhole, Longhorn Cavern, and Enchanted Rock; and Mike Ward visited Onyx Cave.

In addition, a cooperative agreement was executed with The Nature Conservancy to perform water-quality monitoring at Ezell's Cave. The cave, designated for its significant biological resources, is thought to be threatened by an intrusion of sediment-laden groundwater as a result of surrounding land use changes. The monitoring will help to ascertain the degree of threat, and provide a basis for making recommendations to help protect the significant resources.

Research, funded by the Challenge Cost Share Program, into the documentation of fossil collection history continues at Ghost Ranch NNL. The curator of the Ruth Hall Museum of Paleontology at Ghost Ranch

serves as the principal investigator under a cooperative agreement to accomplish this work.

We also have a continuing cooperative agreement with Ector County, Texas, to use Challenge Cost Share funds to construct an interpretive trail at Odessa Meteor Crater NNL, Ector County, Texas.

Twenty-two of the 44 National Natural Landmarks (NNL) in the Southwest Cluster were inspected during 1996:

- | | |
|--------------------|--|
| Arizona: | Barringer Meteor Crater
Canelo Hills Cienega
Comb Ridge
Grapevine Mesa Joshua Trees
Kaibab Squirrel Area
Onyx Cave
Patagonia-Sonoita Creek
Preserve
Ramsey Canyon
Willcox Playa |
| New Mexico: | Bueyeros Shortgrass Prairie
Fort Stanton Cave
Ghost Ranch
Ship Rock
Torgac's Cave |
| Texas: | Caverns of Sonora
Devil's Sinkhole
Enchanted Rock State Park
Ezell's Cave
Longhorn Caverns
Lost Maples State Park
Natural Bridge Caverns
Palo Duro Canyon State Park |

APPENDIXES

A: Southwest Cluster 1996 Natural Resource Projects	20
B: Abstracts of Continuing Projects	23
C: Southwest Cluster Parks	40
D: Biological Resource Division (BRD) / Bureau Information Needs (BIN)	41
E: Funding Guidelines / Natural Resource Fund	43

APPENDIX A

SOUTHWEST CLUSTER 1996 NATURAL RESOURCE PROJECTS

Park	Natural Resource Fund	NRF																																																																																				
MULT	Small Project Funds for Parks: Small grants for park projects or supplies, generally ≤\$1200. Not closely tied to park RMP as is normal for other project funds. <table> <tr><td>MULTI</td><td>BAND & PECO Monitor Western flycatcher</td><td>\$ 200</td></tr> <tr><td>AMIS</td><td>Remove exotic vegetation</td><td>\$ 1050</td></tr> <tr><td>AMIS</td><td>Mitigate cattle trespass / fence</td><td>\$ 1200</td></tr> <tr><td>BAND</td><td>Fire effects on aquatic invertebrates</td><td>\$ 1200</td></tr> <tr><td>BAND</td><td>Elk monitoring transects in Dome Fire</td><td>\$ 1200</td></tr> <tr><td>BITH</td><td>Review Natural History Collection</td><td>\$ 500</td></tr> <tr><td>CAGR</td><td>Remove pea gravel and restore area</td><td>\$ 1000</td></tr> <tr><td>CAGR</td><td>Replace native vegetation</td><td>\$ 1200</td></tr> <tr><td>CAVE</td><td>Establish photo points in Lechuguilla Cave</td><td>\$ 1600</td></tr> <tr><td>CAVO</td><td>Deer population study</td><td>\$ 350</td></tr> <tr><td>CHIC</td><td>ArcView software upgrade</td><td>\$ 690</td></tr> <tr><td>CHIC</td><td>Travel for GIS support</td><td>\$ 220</td></tr> <tr><td>CHIC</td><td>Upper Guy Sandy Prairie CA (balance overspent)</td><td>\$ 100</td></tr> <tr><td>CHIR</td><td>Film to document resource projects</td><td>\$ 200</td></tr> <tr><td>CHIR</td><td>Drip irrigation for revegetation</td><td>\$ 500</td></tr> <tr><td>CORO</td><td>Update CORO base map</td><td>\$ 800</td></tr> <tr><td>CORO</td><td>ArcView software training</td><td>\$ 890</td></tr> <tr><td>CORO</td><td>Computer hardware for GIS</td><td>\$ 1000</td></tr> <tr><td>FOBO</td><td>Fence / revegetation supplies</td><td>\$ 430</td></tr> <tr><td>GUMO</td><td>Limnology / plankton & H2O test kits</td><td>\$ 750</td></tr> <tr><td>GUMO</td><td>GIS Map production</td><td>\$ 500</td></tr> <tr><td>LYJO</td><td>Baseline well testing</td><td>\$ 1500</td></tr> <tr><td>PECO</td><td>Aerial photography</td><td>\$ 1500</td></tr> <tr><td>SAAN</td><td>Small automatic camera</td><td>\$ 900</td></tr> <tr><td>SAPU</td><td>Revegetation</td><td>\$ 1000</td></tr> <tr><td>SOAR</td><td>Frog logger--a remote frog sensor</td><td>\$ 400</td></tr> <tr><td>TUMA</td><td>ArcViews</td><td>\$ 645</td></tr> <tr><td colspan="2">Total</td><td>\$21,525</td></tr> </table>	MULTI	BAND & PECO Monitor Western flycatcher	\$ 200	AMIS	Remove exotic vegetation	\$ 1050	AMIS	Mitigate cattle trespass / fence	\$ 1200	BAND	Fire effects on aquatic invertebrates	\$ 1200	BAND	Elk monitoring transects in Dome Fire	\$ 1200	BITH	Review Natural History Collection	\$ 500	CAGR	Remove pea gravel and restore area	\$ 1000	CAGR	Replace native vegetation	\$ 1200	CAVE	Establish photo points in Lechuguilla Cave	\$ 1600	CAVO	Deer population study	\$ 350	CHIC	ArcView software upgrade	\$ 690	CHIC	Travel for GIS support	\$ 220	CHIC	Upper Guy Sandy Prairie CA (balance overspent)	\$ 100	CHIR	Film to document resource projects	\$ 200	CHIR	Drip irrigation for revegetation	\$ 500	CORO	Update CORO base map	\$ 800	CORO	ArcView software training	\$ 890	CORO	Computer hardware for GIS	\$ 1000	FOBO	Fence / revegetation supplies	\$ 430	GUMO	Limnology / plankton & H2O test kits	\$ 750	GUMO	GIS Map production	\$ 500	LYJO	Baseline well testing	\$ 1500	PECO	Aerial photography	\$ 1500	SAAN	Small automatic camera	\$ 900	SAPU	Revegetation	\$ 1000	SOAR	Frog logger--a remote frog sensor	\$ 400	TUMA	ArcViews	\$ 645	Total		\$21,525	\$21,525
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Total		\$21,525																																																																																				
MULT	Chief Natural Resource Management Conference: Early 1996, a clusterwide meeting of the Chief/ lead person for natural resource management in parks.	\$11,004																																																																																				
MULT	SOAR term employee nine pay periods for six parks RMP: Fund term employee in completing RMP for CAGR, CORO, TONT, and TUMA. Begin work on CHIR and FOBO RMP.	\$ 6,500																																																																																				
MULT	Park Science Fund (possibly billed to Intermountain Regional Office): SWSO annual share of publication costs for Servicewide natural resource management journal. Payment by areas decided by former regional natural resource managers to maintain participation in publication.	\$1,433																																																																																				

Park	Natural Resource Fund	NRF
WHSA	Vegetation Transect Monitoring (long-term): Contract to establish 20 long-term vegetation transects and training for park staff to take over monitoring.	\$2,000
	Total	\$264,454
	Small Park NRPP Fund	
CHIC	Restoration of Upper Guy Sandy's Prairie.	\$15,000
CORO	Conduct Inventory, Assessment, and Monitoring of Barking Frogs.	\$ 7,000
TUZI	Inventory and Assess Amphibians and Reptiles.	\$ 5,000
TONT	Manage Feral Honey Bees.	\$2,000
	Total	\$29,000
	Water Resources Fund	
CHIC	Water Resources Management Plan.	\$50,000
CHIC	Rehab/Replace Vendome Well.	\$30,000
PECO	Water Quality Condition Assessment.	\$15,000
	Total	\$95,000

Note: In addition to the above projects, the SWSO Natural Resource Program contributed \$10,000 to fund additional IPM Plans from its ONPS base account in FY1996.

APPENDIX B

ABSTRACTS OF CONTINUING PROJECTS

Technical Category	Integrated Pest Management
---------------------------	-----------------------------------

Park	Lyndon B. Johnson NHP		
Project Title	Weed Survey and IPM Plan		
Funding Source	NRPP	Amount	\$9,575
SWSO Coordinator	Jerry McCrea	Park Project Manager	John Tiff
Project Start Date	Fall 1994	Expected End Date	FY 1997
Status	This project involves a weed survey of the park and the preparation of an IPM plan for weeds.		

Park	Lyndon B. Johnson NHP		
Project Title	Entomological Survey and IPM Plan		
Funding Source	Small Parks NRPP	Amount	\$26,400
SWSO Coordinator	Jerry McCrea	Park Project Manager	John Tiff
Project Start Date	Fall 1994	Expected End Date	Spring 1997
Status	Study biological pests and prepare an IPM Plan for the park, which covers all the known agricultural, forestry, and structural pests. This includes invertebrate pest species.		

Technical Category	Inventory & Monitoring
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Park	Fort Davis NHS		
Project Title	Plant Survey		
Funding Source	Regional Science	Amount	\$9,025
SWSO Coordinator	Jerry McCrea	Park Project Manager	Allen Morris
Project Start Date	FY 1995	Expected End Date	FY 1997
Status	This project is being accomplished through 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 2-year study; work began in the latter half of Calendar Year 1995.		

Technical Category	Inventory & Monitoring
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Park	Southwest Region (former)		
Project Title	Parks Bibliography Projects		
Funding Source	Servicewide I&M Program Funds	Amount	\$272,600
SWSO Coordinator	Jerry McCrea	Park Project Manager	Park's Resource Management Specialist
Project Start Date	June 1994	Expected End Date	June 1997
Status	A cooperative agreement with the University of Idaho has resulted in the creation of an automated bibliographic database for 36 of the parks in the former Southwest Region. Pro-Cite was the software used for this project. (The final report was issued and mailed to the parks in January 1997).		

Technical Category	Threatened & Endangered Species
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Park	Fort Bowie NHS		
Project Title	Bat Survey		
Funding Source	Regional Science	Amount	\$2,000
SWSO Coordinator	Linda Dansby	Park Project Manager	Dr. Scott Altenback
Project Start Date	Fiscal Year 1996	Expected End Date	Fiscal Year 1998
Status	Conduct a bat survey of all abandoned mine openings in order to make an appropriate decision regarding design of closure.		

Technical Category	Vegetation
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Park	Bandelier NM		
Project Title	Resource Data Collection		
Funding Source	Regional Science	Amount	\$10,000 (FY 1995) \$13,000 (FY 1996)
SWSO Coordinator	Jerry McCrea	Park Project Manager	Brian Jacobs
Project Start Date	FY 1995	Expected End Date	FY 2000
Status	A crew was hired to conduct a series of restoration germination experiments, designed to determine whether piñon-juniper slash and/or litter have allopathic effects on grass-seed germination and the amount of viable seed in the soil that is available for germination. Depending on the outcome of the study, up to 10,000 acres of the park could be revegetated using the results of this study.		

Technical Category	Vegetation
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Park	Capulin Volcano NM		
Project Title	Ecological Restoration of Disturbed Land		
Funding Source	Regional Science	Amount	\$5,000
SWSO Coordinator	Jerry McCrea	Park Project Manager	John Batzer
Project Start Date	FY 1995	Expected End Date	FY 1997
Status	A mixture of forb and grass seeds was purchased to provide a mixture of necessary vegetation to the areas that are under rehabilitation. Included in this mixture are 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 slope. These areas will be prepared prior to seeding; upon completion of seeding operations, mulch-type matting will be put in place to prevent seeds from being washed away. Work has been delayed due to several pending construction projects. Completion of the final phases is anticipated in FY 1997.		

Technical Category	Water Resources
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Park	Pecos NHP		
Project Title	Water Quality Condition Assessment		
Funding Source	Water Resources	Amount	\$15,000 (WRD) \$15,000 (Park) \$ 500 (Highlands University)
SWSO Coordinator	Sam Kunkle	Park Project Manager	Bobbi Simpson
Project Start Date	FY 1995	Expected End Date	FY 1997
Status	Preliminary results were presented at a park water resources workshop in May 1996, to update park and Washington Office WRD staff. Ninety-five percent of field sampling was completed in 1996. A final report is due in the spring of 1997.		

Technical Category	Wildlife
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Park	Buffalo NR		
Project Title	Neotropical Migratory Bird Initiative		
Funding Source	Regional Science	Amount	\$10,000
SWSO Coordinator	Jerry McCrea	Parks Project Manager	John Apel
Project Start Date	FY 1994	Expected End Date	Completed
Status	Research was conducted to determine the effects of hazard fire management on breeding neotropical migrants. The results showed that mowing did not increase species richness, but that burning of fields and forests did increase diversity and abundance of several neotropical species. A second study used artificial nests to examine nest depredation rates in riparian forests. The final reports were received in 1996.		

Technical Category	Wildlife
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Park	White Sands NP		
Project Title	Oryx Fencing		
Funding Source	NRPP	Amount	\$142,000
SWSO Coordinator	Jerry McCrea	Park Project Manager	John Ford
Project Start Date	FY 1992	Expected End Date	Completed
Status	This project was completed in early May 1996, and is the culmination of several fencing projects. At this point, the park is completely fenced, except for the park entrance and one road-crossing. The White Sands Missile Range had volunteers install a cattle guard at the latter site.		

APPENDIX C

SOUTHWEST CLUSTER PARKS

ALFL	Alibates Flint Quarries National Monument, Texas
AMIS	Amistad National Recreation Area, Texas
BAND	Bandelier National Monument, New Mexico
BIBE	Big Bend National Park, Texas
BITH	Big Thicket National Preserve, Texas
CAVO	Capulin Volcano National Monument, New Mexico
CAVE	Carlsbad Caverns National Park, New Mexico
CAGR	Casa Grande Ruins National Monument, Arizona
CHAM	Chamizal National Memorial, Texas
CHIC	Chickasaw National Recreation Area, Oklahoma
CHIR	Chiricahua National Monument, Arizona
CORO	Coronado National Memorial, Arizona
FOBO	Fort Bowie National Historic Site, Arizona
FODA	Fort Davis National Historic Site, Texas
FOUN	Fort Union National Monument, New Mexico
GICL	Gila Cliff Dwellings National Monument, New Mexico
GUMO	Guadalupe Mountains National Park, Texas
HOPI	Hohokam Pima National Monument, Arizona
LAMR	Lake Meredith National Recreation Area, Texas
LYJO	Lyndon B. Johnson National Historical Park, Texas
MOCA	Montezuma Castle National Monument, Arizona
ORPI	Organ Pipe Cactus National Monument, Arizona
PAIS	Padre Island National Seashore, Texas
PAAL	Palo Alto Battlefield National Historic Site, Texas
PECO	Pecos National Historical Park, New Mexico
PETR	Petroglyph National Monument, New Mexico
RIGR	Rio Grande Wild and Scenic River, Texas
SAGU	Saguaro National Park, Arizona
SAPU	Salinas Pueblo Missions National Monument, New Mexico
SAAN	San Antonio Missions National Historical Park, Texas
TONT	Tonto National Monument, Arizona
TUMA	Tumacacori National Historical Park, Arizona
TUZI	Tuzigoot National Monument, Arizona
WABA	Washita Battlefield National Historical Site, Oklahoma
WHSA	White Sands National Monument, New Mexico

APPENDIX D

BIOLOGICAL RESOURCE DIVISION (BRD) / NPS - BUREAU INFORMATION NEEDS (BIN)

A. Central Region BRD / BIN List:

*(Montana, North Dakota, Minnesota, Wyoming, South Dakota, Colorado, Nebraska, Iowa, Kansas, Missouri, *New Mexico, *Oklahoma, Arkansas, *Texas, Louisiana)*

- A systems approach to the management of non-indigenous plants
- Livestock grazing effects on natural systems in national parks
- Erosion processes, effects on resources, and erosion control
- Large-mammal ecology
- Ecology of wildlife diseases
- Regional ecosystem planning and management
- Determination of the effects of impoundments and diversions on NPS areas
- Prairie-dog ecosystem studies
- Grassland bird ecology and conservation in national parks of the great plains
- Population trends and habitats of neotropical migratory birds in national parks
- Herpetofauna status and surveys

B. Western Region BRD / BIN List:

*(Washington, Oregon, Idaho, Nevada, California, Utah, *Arizona)*

- Vessel Management Plan research needs in Glacier Bay National Preserve
- Fishery and aquatic ecosystem research needs

*States located in the Southwest Cluster

FUNDING GUIDELINES / NATURAL RESOURCE FUND

PURPOSE OF THE NATURAL RESOURCE FUND

The Natural Resource Fund (formerly the Regional Science Base), has averaged \$200,000 to \$250,000 per year over the last several years. This money is Intermountain Region ONPS base funding. The Southwest Cluster receives its allocation of the fund based on Southwest Parks Natural Resource Management Assessment Program (NRMAP) information. Rather than assume that all parks have equal needs, we see the principal purposes of the Natural Resource Fund as:

- Providing funds for projects and technical support efforts that have multi-park or regionwide benefits.
 - Stimulating 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).
 - Addressing unforeseen environmental or resource management crises that require immediate attention.
 - Providing technical support and expertise to parks and the Directorate beyond the capability of individual parks.
- Addressing resource management issues that can be solved or mitigated in less than 2 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 Natural Resource Fund.

CONNECTION TO RESOURCE MANAGEMENT PLANS

The Washington Office announced that, beginning in FY 1994, no Servicewide natural resource funds will be distributed to a park unless it has an approved RMP. We will work with parks to get quality RMPs completed and approved as soon as possible. We require that all projects receiving natural resource 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 field area 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).

- Park and/or project is part of a special-emphasis effort or focus by the SWSO Intermountain Region or the Washington Office.
- A commitment exists for long-term support from park or other sources (if needed) after pilot funding concludes.
- The workload for SWSO 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.

For additional information on funding criteria and guidelines, consult the Intermountain Region Special Emphasis Program Allocation System publication 1997.