

Z10W-1125



United States Department of the Interior

NATIONAL PARK SERVICE
Zion National Park
Springdale, Utah 84767

IN REPLY REFER TO:

A-2615 (Zion-S)

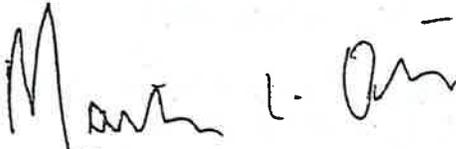
February 9, 2001

COPY

Memorandum

To: Director, Intermountain Region
From: Superintendent, Zion National Park
Subject: Superintendent's Annual Report
Reply Due: February 9, 2001

Enclosed is the requested subject report for Zion National Park for the fiscal year 2000.


Martin C. Ott

Enclosure

GENERAL MANAGEMENT

The year 2000 was celebrated by the completion of the transportation system related construction projects and the implementation of a new shuttle system. On May 23, the system was initiated with a ribbon cutting ceremony. Members of congressional delegation, local, state and regional dignitaries were in attendance for this historic day. After a full season of operation, the system exceeded park staff expectations and received over 90% approval ratings from the visiting public.

Another milestone for Zion was the completion of the General Management Plan. The GMP/EIS was completed after 4 ½ years of dedicated effort. The draft document was distributed to the public in late 1999, and public review was completed in February 2000. Public comments were analyzed, the park staff and DSC completed a final review, and the final product was completed in late August. The GMP establishes a framework for addressing the park's visitor carrying capacity by developing zoning strategies and desired future conditions park-wide. It also addresses wild and scenic river designations, boundary adjustments, research natural areas, and wilderness management. The plan calls for several follow-up implementation plans such as specific carrying capacity studies, a wilderness management plan, river restoration studies on the North Fork of the Virgin River, and an air tour management plan.

Zion was host to the 2000 Cluster Superintendents conference on April 10 and also hosted the annual board meeting of the National Trust for Historic Preservation.

After over 30 years of government service, Superintendent Don Falvey retired on July 1. Don was instrumental in the success of the planning and implementation of the transportation system for Zion, and the completion of the General Management Plan. On June 25, Martin C. Ott entered on duty as the newly appointed superintendent of Zion.

As a result of the worst fire season since 1988, the assistant superintendent was called on a total of five major fires spending over 45 days on incidents in three different states.

CONCESSIONS

Amfac Parks & Resorts, Inc. Concessions Contract

The facilities and services provided by Amfac Parks & Resorts within Zion National Park were fully satisfactory this year.

Amfac has adopted a pro-active role in introducing new environmental measures in anticipation of new legislative mandates for NPS concessionaires. For example, overnight guests were offered the option of having their sheets changed daily or not requesting clean linens every day. The program was well accepted by guests.

The Castle Dome Café addition and renovation was completed in June in time for the start-up of the new transportation system. The previously existing snack bar would not have accommodated the concentrated number of shuttle riders at the lodge shuttle stop. The café renovation is impressive and is meeting the increasing needs of the visitors. Revenues were down in the dining room and although café sales were up over the old snack bar sales, total food and beverage revenues were down. Lunch covers in the dining room were apparently impacted by the transportation system. Amfac occupied a desk at the new visitor center in order to accommodate walk-in reservations and to facilitate information for guests who were allowed to drive as far as the lodge during the shuttle season.

The gift shop received a new layout and display cases. The lodge lobby restrooms were tiled, and the ceilings were lowered. All guestrooms and hallways in motel buildings A and B were re-carpeted. Motel porches and balconies were repaired. The halls and recreation room were renovated in the Box Elder Dormitory. All sidewalks were repaired and dead lawn areas were hydro seeded. A wood chipper was purchased with special account funds so that downfall and hazardous trees around inhabited areas could be removed to reduce fire hazard.

Canyon Trail Rides Concessions Contract

The facilities and services provided by Canyon Trail Rides within Zion National Park were fully satisfactory this year. Mr. Mangum operated under another one-year extension to his contract.

Mr. Mangum once again spent more capital on trail maintenance than is required by the contract. The holding corral near Zion Lodge was removed and will be replaced by a pipe rail fence which will be more appealing and in keeping with the historic district.

CTR started the season operating a desk at the new visitor center, but determined it was more cost-effective to continue desk operations at the lodge.

Zion Natural History Association Concessions Permit

The services provided by the Zion Natural History Association under a concession permit to sell film within Zion National Park were fully satisfactory this year. The Association no longer sells stamps.

Zion Natural History Association moved into the new visitor center in May that increased its sales area from approximately 800 square feet to over 2100 square feet.

Park Transportation, Inc. Service Contract

The park awarded the service contract for operation of the new shuttle system to McDonald Transit Associates, Inc. on January 28, 2000. The system manager was on duty in February to begin the process of setting up the organization and to begin hiring.

The shuttle began actual operation on May 23, and the ribbon cutting ceremony occurred on May 26 with members of the congressional delegation, other dignitaries and local, state and regional constituents in attendance. The park hosted an open house in the old visitor center lobby and served punch and cake. A barbecue was held in the evening for invited guests.

Actual boardings for the first season, May 23 to October 29, were 1,552,113. There is no measure at this time for the average number of times an individual boards the shuttle. PTI operated for 34,091 hours of service.

The system received a high approval rating from park visitors throughout the summer. PTI was flexible and adaptable in responding to the needs of both the park and the visitors.

ADMINISTRATION

Budget

The ONPS budget for fiscal year 2000 was \$4,895,000 with \$133,000 being set aside as fee enhancement (no-year) funding. After the following adjustments our final total was \$4,863,600:

- \$48.0 permanent decrease for Fee Collection Operations
- \$40.4 one time decrease for PCS moves
- \$28.0 one time decrease for Reutilization Program
- \$26.0 one time increase for Concessions Management Salary
- \$14.0 one time increase of Contingency Funding for CISD/SAR Investigation
- \$45.0 one time increase for Special Development Training

This was accountable in 250 accounts and 11 different fund sources. Breakout by fund source is listed as follows:

• 01) ONPS	\$4,730.6
• 01) SEPAS	130.3
• 01) Volunteers in Park	5.8
• 01) Tunnel Operations	251.7
• 01) Commercial Filming	1.5
• 01) Incidental Business Permits	3.2
• 01) Minor Search and Rescue	3.4
• 01) Major Search and Rescue (17 events)	46.0
• 04) Fee Enhancement (No-Year)	133.0
• 05) Construction (Includes Equipment Replacement)	9,139.4
• 06) Reimbursables	224.2
• 25) Recreation Fee Demonstration	2,598.7
• 26) Donations (Includes Kolob)	114.8
• 34) Quarters (Includes Kolob)	184.4

- 44) Federal Lands Highway Program 2,585.6
- 45) Transportation Fund 1,441.7
- 68) Concession Franchise Fees .9
- 85) Fire Program 1,073.9

Total fiscal accountability for 2000 was \$22,669,100.

Contracting/Procurement/Property

<u>CONTRACT #</u>	<u>Contractor</u>	<u>Dollar Amount</u>
• CX1590-A-0001 Trash, solid waste removal	Camco Disposal	\$22,166.54
• CX1590-AO-0003 Supply & Application of bituminous material for roadway/switchback & canyon	Crown Asphalt	\$44,000.00
• CX1590-AO-0004 Furnish & install/ construct car wash	Royce Industries	\$63,621.05
• CX1590-AO-0005 Supply & application of bituminous material Watchman, yard, bus maint.	Ashdown Brothers	\$166,110.95
• CX1590-AO-0006 Install split rail fence at new visitor center	Apache Enterprises	\$9,500.00
• CX1590-AO-007 Tunnel spring adit repair	MCO Mine Services	\$110,000.00

• 1590-00D031 Employee gate at south entrance.	Beehive Parking	\$21,779.65
• CX1590-AO-009 Supply ½ inch hot mix for upper canyon road.	Western Rock	\$71,000.00
• CX1510-AO-0001 Re-roofing Winsor Castle	Charles Sivley	\$18,018.00

In September of 2000 we set up one year with renewal options (up to five years) for contracts for the following services:

- Elevator maintenance
- Alarm monitoring
- Trash collection

Document's
Synopsis of Work – FY 2000
Contracting/Procurement/Property

<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>\$FIGURE</u>
Purchase Orders & Third Party Drafts	1166	\$1,119,702
GSA Orders	47	\$ 17,593
GPO Orders	22	\$ 30,314
Credit Cards	1056	\$ 445,909
GSA Vehicle charges	12	\$ 279,083
Transfers of Property From Nellis	2	
Transfers of Property Between Agencies	7	
Requests For Quote	18	
Reports of Survey	6	
Cert. Of Unserviceability	8	

Information Management

Zion National Park has gone through a very dynamic period during CY/FY 2000. Coming into this timeframe with 4 file servers and 61 workstations, the enhancements were as follows:

- 7 workstations to the Headquarters Building
- 3 workstations to Research & Resource Management
- 1 server and 8 workstations in Zion National Park's new visitor center, connected to ZNP's local area network (LAN) via fiber optic
- 4 workstations in the new Maintenance office
- 3 workstations in the Procurement/Contracting areas of the old Maintenance offices

Other achievements for the park include a dedicated frame relay circuit from the Kolob Canyon District to Zion HQ and a dedicated frame relay circuit to Salt Lake City for accessing Utah's Bureau of Criminal Investigation and the National Crime Information Center.

Human Resources

Staffing

Permanent Employees

ZION 106
CEBR 4
PISP 7

Vacant Permanent Positions

ZION 9
CEBR 1
PISP 1

Term Employees

ZION 8
CEBR 0
PISP 1

Seasonal Employees

ZION 58
CEBR 8
PISP 5

A total of 10 Merit Promotion Vacancy Announcements; 30 Recruitment Bulletins; and 15 Delegated Unit Announcements were issued by the Human Resources office.

Employee Development

Compass I and II training was made available to all employees. Compass I addresses mission comprehension, agency orientation, and individual development planning. Compass II addresses five additional universal competencies, resource stewardship,

fundamental values, NPS operations, communication skills, and problem solving skills. These career planning and training kits have been issued to each division.

Diversity Training

This training was held in-park for supervisors and managers (March 21-23, 2000) as part of mandatory supervisory training. Twenty-five employees attended.

Administrative Review

At the request of the park, Henry Gause, Contracting Officer at Lake Mead National Recreation Area and Charlotte Munson, Personnel Officer, Columbia Cascades Support office, performed an on-site review of the administrative division functions. The purpose of the review included: 1) an assessment of how well the division was functioning following the decision to lapse the Administrative Officer position about four years ago; and 2) review of workloads, grades and staffing levels in the branches of personnel, contracting and budget.

Payroll Audit

A payroll audit was performed on all federal wage employees at Pipe Spring National Monument (PISP), at their request. It was verified that these employees had been paid under the wrong wage survey. Since the Zion Human Resources office services Pipe Spring NM, they were inadvertently paid under the UTAH wage survey. At the request of PISP wage employees, it was verified that their location should be included under the Nevada wage area. This resulted in approximately \$65,000.00 in back pay.

INTERPRETIVE DIVISION

Role and Function of the Interpretive Division

The role of this division is varied and far-reaching. Division personnel are involved in both personal services program (ranger programs and staffing/operating the information desk at the main canyon visitor center) and non-personal services (park guide and map, handouts, site bulletins, bulletin boards, wayside exhibits, etc.)—all aimed at educating park visitors to help them understand and appreciate park resources and values; and to understand and accept the role each has in helping to preserve the park for future generations.

Toward that end, the staff is challenged to not only inform and interpret park resources to the public, but also to build support for park and service management policies and decisions through effective one-on-one communications, outreach effort, formal programs, and media relations. Providing information that helps visitors think about their personal safety and well being is another responsibility. This is critically important, especially for the tens of thousands of backcountry users and climbers. The I&VS

Division plays a key role in the writing and production of hiking information, as well as passing on critical information to hikers.

A number of challenges have been presented to the division with the implementation of the new visitor center and transportation system on Friday, May 26, 2000. Because of the flow of visitors, some of our interpretive programs experienced a downturn in attendance. Some new and innovative ways of interacting with the public were tried. One successful addition to the program was the presentation of ranger-guided shuttle bus tours. Three tours were given each week to full capacity. Because of the success of the shuttle tours, they will be expanded to include daily tours next season. An informal outdoor program was implemented three times a week on the lawn at the lodge. Other ways of helping our visitors to have a more positive experience are being explored.

In 1998, the division staff established these seven goals and expectations for ourselves:

It is the goal of this division that every visitor will:

- Feel satisfied that they were afforded a quality experience.
- Have the opportunity to learn about and understand at least one of the major resources for which the park was established.
- Know that they have been to a national park and how Zion fits into the fabric of treasures that make up the national park system.
- Assume their responsibility to be stewards of park resources and minimize their impacts on them.
- Have a safe visit.
- Support the NPS mission (through compliance with park regulations, sharing their concerns with others and park management, and through their vote/influence on national policy).
- Enjoy themselves, feel refreshed and re-energized, and experience the "recreation" of mind, body and spirit.

Following is our report for the year 2000:

Personnel

Chief I&VS Denny Davies, GS-13 (left in July 27, 2000, to accept the position of CEBR Superintendent)

Assistant Chief I&VS Tom Haraden, GS-12 (Acting Chief 7/30-11/27,00) GS 13

Lead Park Ranger Bob Showler, GS-11

Interpretive Specialist Christi Carmichael, GS-09

Park Ranger (Education Coordinator) Sandy Groves GS-09 (replaced Kelly Connor in April, 2000)

Park Ranger Frank Hayde, GS-09

Park Ranger Kean Mihata, GS-09

Curator Mark Herberger, GS-11 (replaced Steve Floray May 23, 1999)

Secretary Janis Kali, GS-05

In 2000, there were a total of eight front-line seasonal interpretive positions, two long-term volunteers, and one new volunteer. One volunteer worked two days a week in the library.

Program Emphasis

- Reorganize scheduling to maximize visitor services (8:00 a.m. - 7:00 p.m. visitor center desk hours during the "peak" season—down one hour per day from former years) as a result of reduced staffing and effects of inflation. This change, however, allowed the addition of a daily hike.
- Continue to focus personal service interpretation on the thematic approach, while encouraging innovation in interpretive techniques. Staff training and coaching were conducted to develop more effective ways to communicate to park visitors who we are, what we do, why we are here, and how the visitor is part of protecting this (and all) national parks. In 1998, we used 12-year seasonal Steve Dobell half-time as interpretive coach for the rest of the staff. Feedback on his assistance has been extremely positive, and we plan to continue his role.

Interpretive Attendance and Visitor Response

Visitor Center or Program	Attendance
Zion Canyon Visitor Center	284,717 (Old VC closed 4/23. New VC
Patio Talks (4/day)	10,313 uncountable)
Hikes (2/day)	1,827
Evening Programs (2/day)	19,525
Shuttle Tours	1,110 (started in July)
Interpretive Patrols	1,489
Kolob Canyons Visitor Center	61,000
Talks	1,052
Interpretive Patrols	3,869
Information Mail Outs	6,080
Information Phone Calls	10,170 (calls do not include calls and mail out from BC or Zion VC desks or Kolob)

Response to the 2000 interpretive programs was very positive. The new ranger-guided shuttle bus tours given three times a week were very successful.

Site Bulletins and Other Printed Media

Efforts continued to improve, simplify, and consolidate several site bulletins. The division is responsible for the production of many pieces of park information on specific uses and/or park resources.

International visitors will soon have translations available in Spanish, German, French, Japanese, and Italian. These brochures will be in 12-page newspaper format and will include all the core information found in the standard park guide mentioned above plus some other useful text such as a self-guided shuttle tour. These international language brochures are a substantial improvement over our existing ones. The project is funded through fee demonstration.

Also in newspaper format is a new edition of the Zion Backcountry Planner. This 8-page publication will include information that visitors could heretofore obtain only verbally at the information desk or through non-NPS guidebooks. Inclusion of this new information will help to better prepare certain backcountry users and streamline the permit process.

Assistant Chief of Interpretation Tom Haraden is organizing and teaching an NPS publications training workshop in February 2001. This training will provide participants with the necessary skills for producing quality NPS publications. Response to the training was swift and eager.

Non-personal Services

Tom Haraden is working with Harpers Ferry Center staff on the development of a Parkwide Wayside Exhibit Plan. Outdated exhibitory, much of it in poor condition, will be replaced with new exhibits, which will incorporate consistent design elements and updated information.

Tom Haraden, along with Dave Karaszewski, planned a new way-finding system, which was put in effect to help visitors use the shuttle system. This included signs, publications and travel information stations.

New audiovisual equipment was installed in the visitor center to provide three videos to the public. Two TV monitors were installed to operate a 3-4 minute geology video and a backcountry video. Highly technical equipment, a video projector, a Sencore VSB Player, amplifier, speakers, and decoder system were installed to play a front country video continuously on a large screen.

One Transportation Information Station (TIS) has been installed in the Watchman Campground, which works along with an already existing station on the east side of the park. These stations provide updated park information and shuttle information to visitors as they enter Zion National Park. Two more stations are presently being constructed-- one will be located in the town of Hurricane and the other in the town of Mt. Carmel. These stations will provide updated park, shuttle, and road condition information to visitors at a distance of 20 miles or more before entering the park.

Junior Ranger/Educational Outreach Programs

A new education coordinator and assistant coordinator was hired this year. The education coordinator, Sandy Groves, has worked 14 years for the NPS in eight parks

throughout her career. She arrived in late April and immediately began preparing for the 2000 summer season of the Junior Ranger program. Seasonal Park Ranger Maria Frangelli became the new assistant coordinator in early May. Maria is a veteran ZNHA Junior Ranger and outreach instructor, having worked with the programs since 1997.

The Junior Ranger Program ran from Memorial Day weekend until Labor Day weekend with 1,420 children participating. The program was offered seven days a week, with 2 ½ hour sessions given twice daily. Junior Ranger instructors included four full-time and two part-time ZNHA employees, who together totaled 2,150 hours. ZNHA also sponsored a volunteer instructor (through the Student Conservation Association Program) who contributed 450 hours and was a great asset to this year's program.

A total of 1,440 students participated in both the spring and fall Outreach Program. The Outreach Program was reduced this year, as the park was still without an Education Coordinator or Assistant Coordinator during Spring Outreach in March and April. Fortunately, two veteran Junior Ranger instructors, Shauna Stratton and Maria Frangelli (who was later hired as the assistant education coordinator), were willing to fill in for the month of April and presented programs to 3rd and 4th grade classes. Without their assistance, Spring Outreach may not have been possible.

Curatorial Management

Zion National Park's museum collection consists of over 205,000 natural and cultural items. The collection is inherently valuable for the information that it provides about processes, events, and interactions among the area's cultures, individuals, and environments. The park's museum items are a source of cultural evidence and scientific information that document and support Zion's resource management and interpretive programs. Unfortunately, decades of budget restraints and staff shortages took their toll upon collections accountability and preservation. Beginning in the late 1990s, Zion began an ambitious task of upgrading its curatorial operations in order to comply with the NPS Standards-of-Care. That commitment has continued through 2000 with significant accomplishments.

In an attempt to visually organize museum operations, we developed an in-house Museum Management Action Plan beginning with an outline of curatorial "goals" to focus upon for the coming year(s). The list of 27 projects and tasks comes from a variety of sources including GPRA, park and division goals, outlines developed by the previous staff, routine museum SOPs, experience with museum operations, input from park managers and support office personnel, and from development of our new Human History Museum.

We initiated mechanisms to professionalize overall curatorial operations and to increase awareness of the park's collections. Through advertisement and access procedures, over 106 in-park and out-of-park researchers utilized the collections during 2000. We began to research, enter data, and update "old" loans, deaccessions, and other information gaps, including 280 recataloged records.

Collection's storage improved with the purchase of two standard museum cabinets, one geology cabinet, and one doublewide special collections cabinet with \$8,000 through fee demonstration funding. Archival storage was reorganized and fitted with new open shelving units. Further work proved successful with approval of another fee demonstration program for archival cataloging and management. The \$40,000 project will continue into 2001.

A museum partnership between Zion National Park and the Paiute Tribe allowed the park to attain a significant ethnology collection consisting of baskets, pottery, beadwork, and personal artifacts. The 100 objects are the first ethnology items to be cared for within the park's museum collection. Another significant accession included the original surveying equipment used by Leo Snow. Snow conducted some of the original land surveys of this region in the early 1900s and his favorable report was instrumental in President Taft proclaiming the area a national monument in 1909.

One major project dominated our curatorial efforts during 2000 – continued development and coordination of Zion's new human history museum. The design concept entered its revised phase with selection of artifacts, exhibit layout, graphics, and American Indian text. Funding for exhibit design, fabrication, and installation continues as a part of the park's new visitor center/transportation system with assistance from Harpers Ferry. A second element of the human history museum includes renovation of the old VC lobby into the new museum. Funding for this phase has been approved through the fee demonstration program. The Denver Service Center is providing design and management assistance for the project, while park staff will concentrate on providing day labor for the actual renovation. The new museum is scheduled to open in late winter of 2002.

Beyond development of the new museum, the highest percentage of curatorial efforts centered on assisting the park's Resource Management & Research Division with various cultural resource programs. Ten RMP project statements were completed along with 6 PMIS and SEPAS installments. NAGPRA collections were researched, and recataloged along with participation in consultation and meetings. Other interdivisional partnerships included collection permit training and review, completion of curatorial aspects of cultural resource reports and inventories, assisting the archeological field school, coordinating cataloging with researchers, and orientation and information on collections access and use.

Although duty-stationed at Zion, the park's museum curator continued to serve Pipe Spring and Cedar Breaks National Monuments by providing direct curatorial management. We were also able to assist Bryce Canyon National Park with a variety of routine and technical museum issues. Day-to-day operations at Zion were supplemented by the services of three staff volunteers who assisted in cataloging over 400 items, annual inventories, and updating records.

Interpretive Planning

The interpretive staff continued to be involved in the planning for the new visitor center and transportation system until its inauguration on May 26, 2000. Focus of the exhibits is to provide information about commonly asked visitor questions and assisting with visitor orientation.

Public Information Officer

Division Chief Denny Davies continued to handle PIO duties until he left the park to assume the position of Superintendent at CEBR on July 27, 2000. Tom Haraden and Bob Showler, with Frank Hayde as backup, have handled the duties of PIO from that time. There were a number of significant media contacts this year, including two fatalities and the inauguration of the new shuttle system. The 2002 Winter Olympics will probably involve a significant increase in media contacts.

Special Events

Christi Carmichael and Bob Showler coordinated the National Audubon Society's annual Christmas bird count. Twelve parties counted individuals and species of birds between Grafton and the East entrance of the park. A total of 74 species were counted.

The entire interpretive staff was heavily involved in the planning and execution of the inauguration of the Zion canyon transportation system and the dedication of the new visitor center.

VIP Program

In 2000, 139 volunteers contributed a total of 22,354 hours of assistance across the board to the entire park staff (not just the Interpretive Division). The VIP budget for the year was \$5,500.00 for the very low cost of \$0.24 per hour contributed. To pay for those services at the GS-5 rate would have cost about \$253,941—savings of over \$248,576. These two volunteer programs continue to be valuable additions to park operations. They also play the strong role of giving prospective employees park experiences they would have difficulty achieving without these options.

Zion Natural History Association

Zion Natural History Association underwent one of the most important transitions in its history when the doors of the new Zion Canyon visitor center opened Memorial Day weekend, 2000. The new ZNHA bookstore consists of 2,000 square feet of sales space and is one of the most beautifully designed and well-stocked bookstores in the national park system. Vauna Lewis was named center manager of the new bookstore and Sonja Sweeten is assistant manager. The ZNHA board of directors approved an organizational structure change, which converted Joann Hinman's position of business manager to director of operations. As director of operations, Joann Hinman now directly supervises

each of ZNHA's center managers, including Vauna Lewis in Zion Canyon, Joel Israel at Kolob Canyons/Cedar Breaks, Susan Garcia at Pipe Spring, and Vivian Page at the Utah Travel Council outlet in Salt Lake City. As executive director, Lyman Hafen has responsibility for the entire ZNHA operation and answers to the 11-member board of directors. During FY 2000, ZNHA employed a total of 31 people, including part-time employees.

In FY 2000, ZNHA continued its successful operation of five interpretive sales sites. The visitor center outlets at Zion Canyon, Kolob Canyon, Cedar Breaks, Pipe Spring, and Salt Lake City, had combined gross sales of \$1,743,218, up 4 percent over 1999.

ZNHA also continued its support of the Junior Ranger Program in Zion National Park. This very popular program for children 6 to 12, operated from Memorial Day to Labor Day, seven days a week and reached nearly 2,000 children. ZNHA provided four full-time and two part-time employees for the program. ZNHA also provided funds for the park's outreach program in which park naturalists travel to local schools for their presentations. The association continued to fund the position of ranch hand at Pipe Spring National Monument, and aided the monument's living history programs through the purchase of costumes and supplies for the livestock and gardens.

The association supported scholarships to Dixie College and Southern Utah University and continued its support of NPS resource management programs. It made donations to the Project Learning Tree program, to Washington County School District's History Fair, and to the rebuilding of the historic schoolhouse that was burned by vandals at Mount Trumbull on the Arizona Strip.

With the move to the new visitor center, ZNHA did little new publishing in 2000. A 16-page booklet on Wildflowers of Cedar Breaks National Monument was published. There was preliminary work done on producing a Zion Park Shuttle Guide, a project that will be completed in 2001. The cover for the book "The Zion Tunnel" was redesigned, and the book will be reprinted in 2001. The Association funded the printing of 600,000 copies of the Zion Visitor Map and Guide, which is the newspaper-guide distributed to almost every vehicle entering the park. ZNHA also printed many free site bulletins provided to visitors to enhance their enjoyment of Zion National Park.

The ZNHA Board of Directors reviewed its strategic plan at its 2000 retreat at Zion Lodge. The Board now has as one of its highest priorities the charge to work closely with Zion National Park to develop a field institute. Board member Joe Sharp heads the committee that will research the concept and work with Zion National Park administrators to determine the best way to proceed.

RESOURCE AND VISITOR PROTECTION

Fee Management

The cost of collection program continued to grow with two additional collection stations needing additional fee staff for operation. A summary of some notable events follows:

- Revenue collections of \$7.4 million
- Increase of entrance fee from \$10 to \$20
- Begin use of credit card payments
- Begin sales of National Park Pass (#1 sales area in the service)
- Visitation of 2,454,248 (752, 612 vehicles & 6,033 buses) at main park and 164,121 (37,245 vehicles) at Kolob Canyons
- Opened operation of River Entrance Station and a second East Entrance Station
- Implementation of video security at all collection points
- Support of the shuttle system through entrance contact information and parking assistance
- Tunnel operation handled 24,514 oversize vehicles
- 62,700 campground sites occupied
- Support to resource management projects, wildland fire, EMS, SAR, CISM

The Zion transportation system was dedicated May 26, 2000. The Zion Canyon Scenic Drive was closed to all traffic except the park shuttle buses, which provided stops for passengers to get on and off along the way. Comments proved to be mostly positive in nature with many visitors expressing a better experience overall. Fee management personnel were able to adjust to different traffic patterns and were able to provide additional information about the transportation system.

Resource/Visitor Protection

There were slight increases in some trackable categories when compared with 1999 statistics, but when compared with previous years, a general downward trend in recordable offenses continued. This decline may be partly attributable to both the new transportation program eliminating the congestion problem along the main canyon, as well as decreased coverage hours by the patrol staff. Two patrol vacancies due to transfers/resignations and another ranger attending basic academy at FLETC during the season attributed to the lower case numbers below.

There were two fatalities in the park this year, one traumatic and one non-traumatic. The EMS cases are broken down as follows:

- 165 total NPS EMS cases
- 22 Advanced Life Support Cases
- 4 Advanced Cardiac Life Support Cases
- 48 Significant Basic Life Support Cases

- 91 Minor EMS cases
- 2 EMS saves
- 50 ground NPS ambulance transports

The park played host to several training sessions for NPS and other agencies, including the annual law enforcement refresher, APCO (association of public communication operators) training course, wilderness training and Leave No Trace training. The park also conducted numerous outreach training sessions including technical rescue, Leave No Trace, CPR, emergency vehicle operations, EMT-Basic, Basic OAS Safety, and numerous fire courses.

An MOU for interagency law enforcement assistance was finalized with the Town of Springdale Police Department. This MOU will allow for emergency assistance from either agency during both emergencies and routine calls for assistance. MOU's with the Springdale Fire District on structural fire and emergency medical services were revised during this period as well.

2000 R&VP Workload

Visitation - 2.54 million
 Incidents - 2,562

Law Enforcement Incidents

Incident Type	1999	2000	% change
Citations	1,114	415	-62%
Warnings	719	765	+6%
Arrests	29	33	+13%
Drug Violations	41	17	-58%
DUI	13	11	-15%
Alcohol Violations	82	35	-57%
Resource Violations	110	77	-30%
Weapons Violations	10	16	+60%
Vandalism	16	12	-25%
Burglary	1	0	-100%
Agency assists	38	44	+15%
Larceny	117	45	-61%
Visitor assists	482	468	-2%
SAR	17	31	+82%
EMS	141	191	+35%
Total CIRs	3,264	2,562	-21%

Fire Management

The 2000 fire season was one of the most active seasons in 50 years for the Intermountain Region, as a result of a dry spring and fall and a high temperatures all across the nation during summer. Park Headquarters received 11.8 inches of precipitation in 2000 compared to the 75-year average of 15 inches. Lava Point received 14.68 inches. February and October were the wettest months with peak rainfall at 2.36" and 3.71" respectively. June and July were the hottest receiving less than 1 inch combined.

Zion NP responded to 113 fire incidents in 2000, including both in-park and off-park assists. The grass and fuels were extremely dry, which contributed to continual red-flag warnings and restrictions implemented by both state and federal agencies. The Stage II restrictions prompted many organizations to close trails and enforce no smoking and campfire ordinances.

Fire use activities in the park included one natural ignition managed for resource benefits at the end of the fire season. After growing to three acres and determining the complexity of managing the fire, it was converted to a wildfire, whereupon it was declared out at 32 acres. Zion employees responded to 81 off-park support fires. Due to the national memorandum restricting the Department of Interior from managing fires for resource benefits, all other ignitions in the park (except one incident) were treated as suppression fires.

The Lee Valley Prescribed Burn was implemented prior to the memo issued after the Cerro Grande incident. Lee Valley was a very successful operation incorporating: the Zion Fire Crew, Boise Smokejumpers, Zion Fire Use Module, Cedar City BLM engines, an ENGB from GRCA, and BRCA National Park.

The Cable Mountain Fire was the largest suppression action in the park for the 2000 season. It was started by lightning on the evening of August 3 along with 11 other ignitions, which were either suppressed or extinguished naturally. At the height of the fire fighting efforts 80 people, two helicopters, and five air tankers were employed with the support from the Forest Service and BLM, as well as local AD crews. The fire was declared out on August 13, having burned 72 acres. Total cost to date is approximately \$128,117 (or about \$1,779 per acre).

The Zion Fire Use Module assisted the following NPS agencies: ZION, BAND, BRCA, CAVE, CEBR, GUAD, GRCA, & MEVE. They responded to 38 support actions, assisted with 10 prescribed fire ignitions, assisted 19 interagency incidents (2 WFURBS, and 17 suppression actions), constructed 484 chains of line, conducted 3 preps for WFURBS, and assisted in 3 hazard fuel reduction projects.

Backcountry

Some of the most dramatic visitation increases occurred in the slot canyons. This was the third season that we required permits for all technical slot canyons (as opposed to just requiring permits for canyons that feed into the Narrows). Part of the increase in use for canyons like Behunin and Pine Creek could be attributed to visitors' increasing understanding of the permit requirement.

There was a decrease in the number of overnight climbing permits. Much of this decrease occurred during the fall. The fall of 2000 was unusually cold and rainy. It is also possible that some of the decrease in climbing use was caused by the mandatory canyon shuttle system in place through the end of October.

Backcountry Visitor Use Statistics

(Numbers in parenthesis are the percentage increase over 1999/1998 figures)

	<u>2000</u>	<u>1999</u>	<u>1998</u>
Number of Permits	6,947 (30%/76%)	5,358	3,950
Number of Users	23,875 (42%/100%)	16,835	11,963
Visitor Use Nights	14,687 (32%/36%)	11,252	10,925
Average Group Size	3.4 (10%/13%)	3.1	3.0

Types of Permits

Back Country Camping	2,618 (35%/40%)	1,938	1,874
Narrow Canyon Day	2,910 (46%/180%)	1,990	1,039
Narrow Canyon Overnight	1,051 (38%/123%)	761	471
Overnight Climbing	371 (-45%/-34)	669	566

Breakdown into Specific Areas

Narrows Day	640 (33%/124%)	710	434
Narrows Overnight	989 (39%/128%)	710	434
Subway Day	1,389 (36%/146%)	1,022	565
Pine Creek Day	317 (106%/346%)	154	71

Orderville Day	192 (12%/170%)	171	71
Keyhole Canyon Day	139 (184%/infinite)	49	9
Hop Valley & La Verkin Overnight	1,141 (143%/2020%)	470	378

KOLOB DISTRICT OPERATIONS

Total visitation in 2000 was 167,309, a decrease from 176,947 in 1999. Even though the total visitation number is down, the number of visitors using the trails, backcountry permits and the total fees collected increased.

Coordination with resource management continued in supporting several volunteer groups from the American Hiking Society and the Wilderness Volunteers to work on the Horse Ranch Mountain area exotic plant eradication. This is a continuing program to control the scotch thistle and mullein in this area. Another volunteer group from the American Hiking Society worked the La Verkin Creek drainage to control scotch thistle, mullein, and tamarisk. The Kolob Canyons staff was able to continue exotic plant eradication using mechanical and chemical means in Hop Valley, LaVerkin Creek, Timber Creek, Taylor Creek, and Camp Creek with 495 scotch thistle, 2,352 mullein, 66 tamarisk and 33 Russian olive removed.

The Kolob Canyons staff completed numerous small trail maintenance projects on the Timber Creek Overlook Trail, Taylor Creek Trail, and Hop Valley/LaVerkin Creek Trails. The yearly campsite monitoring in LaVerkin Creek was completed along with trail monitoring.

An air quality monitoring station was installed at the Kolob Canyons District under a cooperative agreement with NPS and the University of California Davis with weekly checks required. The staff also continued with the ozone-monitoring project near the Timber Creek Overlook. The Kolob Canyons staff also assisted with the mapping of plant communities, Goshawk surveys, Peregrine Falcon surveys, sound monitoring and archeological site restoration.

Interpretation

In 2000, 140 short talks were presented to 777 visitors. Both of these are up from 1999. These programs included topics on botany, geology, and wildlife. Guided hikes were presented on Saturday mornings, May through September. These hikes began at the Taylor Creek trailhead and ended at the Larson Cabin. They were about two hours in duration. Approximately 275 visitors joined us for an average of about 10 visitors a hike.

Roving interpretation was again a strong point in 2000. 3,869 visitors were contacted on 352 roves. School outreach programs were also very strong and well received by all. During the spring, an ecosystems program was developed and presented to 5 local

schools. Programs were presented to 1st, 2nd, and 3rd grade classes totaling 924 students in 36 classes. Fall outreach was also quite successful. An animal adaptations program was presented to 4th graders in 4 local schools. Sixteen classes totaling 400 students were visited in the fall of 2000. A combined total of 52 classes and 1,324 students were reached with the Kolob Canyons school outreach program in 2000. Over 250 Junior Ranger badges were distributed in 2000. Acceptance of the program was good, and appropriate changes were made to improve the program. Printing of the new program is in progress and will be ready for distribution in 2001.

Boards were changed and updated monthly. They ranged from trailhead information to interpretive information on wildlife, safety, and ecosystem dynamics. The Taylor Creek Trail Guide was rewritten and updated. It is currently in Zion Canyon awaiting approval and printing.

Calendar year 2000 saw the implementation of the Trakker permit system, both at headquarters and at Kolob Canyons. Kolob Canyons staff issued permits and input all District Backcountry permit data into the new Trakker program. To facilitate the installation of Trakker, the Front desk was switched, Fees taking over the ZNHA side of the Visitor Center and ZNHA going over to the old fee desk. This gave Fees additional room for a new computer and screen, also allowing visitors to encounter Rangers immediately upon entering the VC.

Law Enforcement/Emergency Services

The Kolob Canyons Law Enforcement Staff reported a total of 104 of case incidents in 2000. This number is up from previous years and may in part be attributed to the addition of a commissioned ranger in FY 2000. These cases ranged from automobile burglaries, vandalism, alcohol and drug violations to numerous natural resource and traffic violations.

Kolob Canyons District staff reported 103 backcountry patrols covering 1,385 miles of trail. In addition to the use of commissioned rangers for backcountry patrols, Kolob Canyons used VIP's, SCA's and other non-commissioned staff to help patrol the backcountry whenever possible.

Kolob Canyons reported 12 BLS Medicals, 9 minor SARs and 2 major SARs in 2000. All were up from previous years. The Kolob Canyons SAR and EMS cache is now sufficient to handle all basic medicals and all but the most technical SARs.

Bruce Winslow was tasked with coordinating a wilderness workshop for park staff. Greg Kroll, former NPS representative at the Carhart Wilderness center, conducted the workshop in March 2000 with approximately 40 persons attending. Kolob Canyons is represented on the Park Wilderness Committee. The Kolob Canyons staff continually works with Scout groups to ensure an enjoyable visit and compliance with park regulations and Leave No Trace principles.

Bruce Winslow attended 10 monthly Roundtable meetings to give park information and conduct LNT training for adult leaders. Three additional LNT training's were conducted upon the request of Scout units. The Plateau District staff also assisted in a roundtable meeting in St George, UT to ensure a continuing dialog with a large use group.

Maintenance

Kolob Maintenance currently has one permanent and one seasonal position. This year was an accident-free year for our operation.

Projects completed during the year were as follows:

- Erected storage building for resource operation
- Installed electrical system to a new air quality monitoring station. This was done with an agreement with University of California at Davis and the resource management division in the main canyon.
- Emergency egress project for the visitor center was accomplished with Fee Demonstration funds. Carter Enterprises completed this project.
- Removal of an excess trailer from the housing area was accomplished by using it for a structural fire training exercise for Zion structural fire brigade and the volunteer New Harmony fire department.
- Acquired a backhoe from excess property that allowed us to complete maintenance of roads and ditches that would normally have been done by the crew from the main canyon.
- Added a new coral mix to ¼ mile of trail to alleviate a mud and erosion problem.

MAINTENANCE

Buildings and Utilities

Zion averaged 83% occupancy in the permanent housing and 86% occupancy in the seasonal housing in FY00. Minor upgrades were accomplished in three permanent houses to make them ready for new occupants, and total interior rehabilitation was completed on permanent quarters #35 and #2. Quarters #2 is on the historic register and was rehabbed with 106 compliance. The backcountry cabin at Fire Pit Knoll was wired for 24 volts and a trailer mounted photovoltaic unit installed to provide power for lighting, a water pressure pump and other low amperage electrical needs.

A portion of historic building #79 at the maintenance yard was converted from an equipment shed to maintenance offices under the guidance of the Zion Cultural Resource personnel, as well as the regional cultural architect. This project met all of the cultural compliance guidelines and received an award from the Utah Heritage Foundation.

In a joint effort, crews buried 4,100 feet of irrigation pipe from the Watchman housing area to the new visitors center to transport and pressurize Flanigan ditch irrigation water

to use in the visitor center landscaping, bus maintenance building area and Watchman campground.

A backup power generator with an automatic transfer switch was installed for the administration building to provide power to the dispatch office during power outages. A 2,000 square foot shade structure was designed and constructed next to the greenhouse for the resource division vegetation program.

Zion maintenance assisted the Kolob maintenance personnel with drawings and specifications on the basement egress project that was accomplished by contract. This Fee Demo project called for the addition of an exterior door for the existing visitor center basement.

Roads and Trails

A large portion of the maintenance crew's efforts at Zion was directed to the new transportation system. Some of the work included widening and adding a turn lane to the Watchman intersection; building an overflow parking area for the new visitor center; paving, chipsealing, and striping the south entrance and Watchman Road complex; hauling rock and fill materials for the shuttle stops and the east entrance project; and delineation work at Canyon Junction to help curb parking problems. Crews also installed numerous new signs for the transportation system and rehabbed the old dump station for employee parking.

In a joint effort, maintenance crews constructed two campground host sites in Watchman campground. The work consisted of the installation of water, sewer, and electrical lines. Crews also accomplished all of the grading and landscape work. Picnic tables and fire grates were installed to complete the project.

Zion maintenance crews crack-sealed, patched, chipsealed and striped 3.5 miles of roadway from the river bridge to the long tunnel. An additional 5 miles of road at Cedar Breaks N.M. was also striped. The crew also chipsealed and striped the Pipe Springs N.M. road and parking area.

A new car wash facility and a new welding shop were completed. The car wash facility was completed by contract. The welding shop work was accomplished by day labor using Zion maintenance crews and materials.

Maintenance crews removed the old bridge at Weeping Rock and installed a new 30' bridge. The abutment on the north end and the approach were reconstructed, as were 200' of concrete trail leading to the Weeping Rock shuttle stop.

This year the park had two back-to-back, six-person SCA crews, which included a crew leader for each crew. These young people worked directly with the backcountry trail leader. The first crew's goals were to complete a 2,000 foot trail re-route in Telephone Canyon and completely prune, grade and install water bars on a two-mile section known

as the Rim Route. The second crew's primary job was to repair badly eroded and potted out sections of concrete trail above Scouts Lookout. These tasks were completed, and we look forward to a crew of SCA's next year.

One mile of boundary fence was completely rebuilt at Cedar Breaks National Monument. Zion maintenance crews accomplished this work.

RESOURCE MANAGEMENT AND RESEARCH

Budget

The Resource Management & Research Division programs and projects were carried out with total funds of \$1,072,056 in FY2000. This was comprised of \$531,321 in ONPS funds, and \$355,100 in fee program funds; these were further leveraged through various partnerships and in-kind matches which resulted in project funding of \$175,200 received through grant writing, \$10,020 in requested donations from the Zion Natural History Association, and \$515 in private donations.

Special Project Fund List

<u>Project</u>	<u>Source</u>	<u>Funds</u>
General Management Plan	WASO-DSC	\$ 9,500
GIS Metadata Project	IMR-GIS	5,200
Desert Tortoise Inventory	IMR-Nat Res	12,000
Cable Mountain Condition Assessment	CRPP	5,000
Treatment of Stabilized Archeological Sites	CRPP	24,100
Paleontological Survey	WASO-Geo Res	1,200
Wetlands/Riparian Inventory	WASO-Water Res	16,000
Visibility Monitoring	WASO-Air Res	4,000
Native American Graves & Repatriation Act	IMR-Cult Res	4,000
Peregrine Falcon Monitoring	WASO- NRPP	38,000
Exotic Plant Management	IMR-Nat Res	10,000
Bacterial Water Assessment	WASO-Water Res	22,200
Virgin River Restoration Planning	WASO-Water Res	<u>24,000</u>
		\$175,200
Water Res. & Water Rights	Fee Demo	85,000
Park-wide Re-vegetation	Fee Demo	167,000
Visitor Center Landscape/Re-veg.	Transp. Fee	53,100
Watchman Archeological Site	Fee Demo	<u>50,000</u>
		\$355,100

Staffing

The division conducted operations with 9 permanent employees, 5 term employees*, 13 seasonal employees, 1 intermittent employee, 2 paid interns, 4 Student Conservation Association employees, and 129 volunteers. Use of volunteers continues as an important means to not only accomplish project work, but to provide fulfilling opportunities for the public to participate in park management and to provide student interns with practical experience in resources management. Resource Management utilized the most park volunteers – over 20,000 volunteer hours were contributed for vegetation management projects, alone.

In 1999, the division pioneered the use of the Washington County Prison Work Crew for various vegetation management projects. The success of the program has grown, as the crew was employed two days per week for the entirety of the field season, March through mid-November. The crew was again utilized for assistance on vegetation projects, but also by the landscape architect on projects at the new visitor center and campgrounds, and other for projects in grounds maintenance.

Permanent positions

Division Chief	GS-13
Assistant Chief	GS-12
Archeologist	GS-11
Biologist (GIS)	GS-11
Biologist (Wildlife)	GS-11
Botanist	GS-11
Hydrologist	GS-11
Park Ranger (Special Projects)	GS-11
Support Assistant	GS-06

Term positions

Archeologist	GS-09
Horticulturist	GS-09
Lead Biological Science Technician	GS-07
GIS Technician*	GS-07

* Two people held this position at different times in 2000

Cultural Resource Management

Inventory and Site Documentation

Intensive pedestrian inventory was conducted on approximately 6,000 acres, supported by funding from the Fire Management Program (FirePro). These field investigations focused on areas within the park that have been identified for hazard fuels reduction through management-ignited fires and mechanical techniques. A total of 70 new sites were documented and evaluated for National Register eligibility during the field investigations. Fifteen previously recorded sites were revisited and documentation updated. Geo-spatial data were collected for each site and entered in the GIS cultural data layer. Site condition assessments were conducted at 85 sites. As required by the National Historic Preservation Act compliance process, Assessment of Effects forms were completed for each project that could impact National Register eligible or listed properties. Mitigation measures were developed and implemented to avoid effects to significant resources. Data on site location, function, chronology, affiliation, and condition were entered into the NPS service-wide ASMIS database. Reports, field notes, site records, and all artifacts collected during fieldwork were archived in the Zion Museum Collections. These investigations have helped to meet the park and service-wide GPRA goals to better manage cultural resources through programs of site inventory, condition assessment and increased site databases.

The following archeological reports were submitted to the Utah State Historic Preservation Officer, to fulfill Section 106 consultation requirements under the National Historic Preservation Act, and to enlarge the statewide database.

Betenson, Matthew
2000 Archeological Survey of the Lee Valley Burn Unit. Report on file, Zion National Park, Springdale, UT.

Bourcy, Bruce
2000 Lava Point Park Boundary Hazardous Fuels Reduction Archeological Inventory. Report on file, Zion National Park, Springdale, UT.

Christianson, Nikole
2000 Wildcat West Burn Unit Archeological Survey. Report on file, Zion National Park, Springdale, UT.

Hansen, Britt
2000 Archeological Inventory of the Coalpits Wash Burn Unit. Report on file, Zion National Park, Springdale, UT.

Rademaker, Kurt

2000 Archeological Inventory of the Clear Creek Prescribed Burn Unit. Report on file, Zion National Park, Springdale, UT.

Other project-related field investigations were conducted, resulting in the documentation of one new site. These following report and Assessments of Effect forms were completed to document these investigations:

Ferris, Dawna E.

2000 Archeological Investigations for the Grafton Contact Station, Trail, and Bridge Report on file, Zion National Park, Springdale, UT.

AEF-00-01 Zion Lodge Storage Tank and Electrical Transformer

AEF-00-02 Zion Lodge Snack Bar Enlargement

AEF-00-03 Installation of Air Particulate Sampler, Kolob Canyons

AEF-00-04 Watchman Campground Road Modifications

AEF-00-06 Middle Parking Lot Expansion-Zion Lodge

The Utah Heritage Foundation recognized the conversion of the open bay storage shed into park maintenance offices during their Annual 2000 Heritage Award in October. The conversion was designed to replicate historic external architecture for the maintenance area and shops, a National Register of Historic Places District. The project was highlighted during an awards dinner held in Salt Lake City. The park received a certificate that was framed and delivered to the maintenance division, who were responsible for the project construction. The project served as an excellent example of adaptive use of a historic building and collaborative efforts between park staff, the Intermountain Region historic architect – Denver, and the Utah Division of State History.

Site Condition Assessments and Stabilization

SEPAS funding supported site condition data being collected at 94 sites. Site condition assessments were completed at each site and the data entered in the ASMIS database. Stabilization activities were completed at seven sites, to ensure that erosion and visitor-related effects did not effect site integrity. Of the 338 sites currently contained in the AMIS database for the Park, 188 are now evaluated as being in good condition, helping to meet the park and service-wide GPRA goals for site condition.

A final report of data recovery and stabilization activities at two sites in the Kolob Canyons was completed:

Betenson, Mathew

2000 Archeological Investigations at Camp Creek, Kolob Canyons District. Report on file, Zion National Park, Springdale, UT.

Site Monitoring and Protection

Park staff and volunteers monitor site conditions, visitor use, and related effects at 25 of the most heavily visited archeological sites in the park. These include sites that are available for public use under the Park Site Disclosure Policy and those that receive visitation, but that are not formally open for public use. Data are collected on a regular basis at these sites (e.g., monthly, biannually, or annually), and more frequently if necessary. Based on monitoring data, special signage (e.g., ARPA, site etiquette, safety warning) was placed at six sites. An anti-vandalism wayside exhibit was installed at the Southgate Petroglyph Site. Social trailing was "brushed out" by volunteers at two of the sites.

Memorandum of Agreement

The park entered into the following Memorandum of Agreement with the Utah State Historic Preservation Officer to streamline Section 106 consultations:

2000 MOA for Irrigation Ditches and Small Water Diversion Features in Zion National Park, Washington County, Utah

Research

Obsidian artifacts were collected from selected sites within the park and obtained from the Museum Collections for non-destructive analysis to determine the likely source location of the obsidian. A total of 40 samples were submitted for sourcing, resulting in the identification of two primary obsidian sources for the park artifacts: Wild Horse Canyon in the Mineral Mountains of central Utah and the Panaca Summit region, near the Nevada/Utah border.

Geomorphological stream terrace studies were conducted in Parunuweap Canyon, under a Cooperative Agreement with the Desert Research Institute, University of Nevada, and the Nevada Bureau of Mines.

A research design was prepared to direct data recovery activities at 42Ws 126, evaluated to be at risk of further visitor-related impacts because of its location overlooking the Watchman campground and the new visitor center:

Ferris, Dawna E.

Research Design for Data Recovery and Stabilization of an Ancestral Puebloan Site (42Ws 126) in Zion National Park. Report on file, Zion National Park.

Archeological Field School

In June of 2000, the park conducted data recovery and initial site stabilization at a damaged Ancestral Puebloan (Virgin Anasazi) site, overlooking Watchman campground.

The data recovery was accomplished through an archeological field school, under a Cooperative Agreement with the Desert Research Institute (DRI) of the University of Nevada.

The field school comprised a component of Desert Research Institute's Nevada Science Teacher Enhancement Project, funded by a National Science Foundation grant and several Nevada school districts. The program involved high school teachers and their students in scientific investigations, working with researchers under field conditions. Twenty-one participants (5 teachers/16 students) received 15 hours of classroom instruction in archeological method and theory, before arriving at the park in June. During the three-week long field school, they assisted with the excavation of a previously vandalized site (42 Ws 126) and with field inventories, under the direction of professional archeologists from DRI and the park.

Fee Demonstration funding supported heritage education related to the Archeological Field School. More than 250 park visitors joined small group site tours, offered twice daily during the site excavation. An SCA volunteer archeologist led each site visit, describing the Virgin Anasazi material culture and the progress of the excavation. A "House Rules" bulletin, containing information on archeological site etiquette and ARPA information, was given to each participating visitor. A final excavation report and long term interpretation plan for this site will be completed and implemented in FY 01.

Native American Graves Protection and Repatriation Act

In July, park staff met with affiliated Indian tribes to discuss cultural affiliation and disposition of American Indian human remains contained in park museum collections. Representatives from the Hopi, Zuni, Northern Ute, Paiute Indian Tribe of Utah, and Kaibab Paiute Tribes were in attendance. A Core Tribal Committee (CTC) was formed by the participating tribes, to serve in an advisory capacity to the park, during the NAGPRA process. The park made a preliminary finding for cultural affiliation, but reconsidered that finding following a November NAGPRA meeting that was held with members of the CTC in Page, Arizona. The park has a draft NAGPRA Disposition Plan that will be finalized in 2001 pending tribal input. It is anticipated the park will meet with the NAGPRA National Review Committee in 2001 to discuss the park's cultural affiliation determination in order to proceed with repatriation and reburial plans. At present, the park and the tribes have agreed that the human remains will be reburied at an identified location within park boundaries.

NEPA Compliance

The following project-related NEPA screening and analysis documents were prepared in FY 00: These documents are on file, RM&R Division, Zion National Park, Springdale, UT.

Administrative Determinations of NEPA Compliance

AD-00-007 Construction of Recreation Building at Zion Lodge

Categorical Exclusions

CEC-00-01 Installation of IMPROVE (Particulate) Sampler in Kolob Canyons
Developed Area

CEC-00-06 Construction of Lodge Transfer Facility, Zion Visitor Center

Environmental Assessments

EA-00-01 Environmental Assessment for Data Recovery, Stabilization, and Interpretation of an Ancestral Puebloan Site (42Ws 126) in Zion National Park, Washington County, Utah. FONSI signed June 9, 2000 by Regional Director.

EA-99-07 Revised Environmental Assessment for Reconstruction of a Water Diversion on Shunes Creek. FONSI signed May 3, 2000 by Regional Director.

RM&R has directed the preparation of an Environmental Assessment (EA-00-02) for PacifiCorp's proposed reconstruction of a 34.5kV power transmission line to 69kV capacity. The existing power line crosses the southern portion of the park and provides service to the communities of Virgin, Rockville, and Springdale, as well as park facilities. Public scoping for this project was initiated on July 24, 2000, with a mailing to request issue identification and comments. Comments were also accepted via the internet. A public information workshop was held in Springdale on August 23, 2000. The comment period for scoping closed on September 1, 2000.

Park staff has worked with JBR Environmental Consultants, a third-party contractor retained by PacifiCorp, to prepare the project EA. A preliminary EA is anticipated to be released for public review and comment in the spring of 2001.

Park staff also provides technical advice and assistance for NEPA compliance to CEBR and PISP, as requested.

Water Resources

The year was very dry, with a very small spring runoff where peak flow in the North Fork of the Virgin River reached only 300-380 cubic feet per second (cfs). The maximum discharge from summer storms was only 207 cfs.

River Channel Widening at the Sentinel Slide:

In the spring of 2000, the Federal Highways Administration completed a project to widen and stabilize 400 feet of the channel of the North Fork of the Virgin River where it lies between the Zion Canyon Scenic Drive and an active landslide. The project was needed to prevent future flood damage such as occurred in September 1998 from a 4500 cubic

foot per second flow. In order to reduce water velocities and bed scour, the channel was widened by 20 feet and rock drop structures were constructed. About 22,000 cubic yards of slide material were removed and the disturbed soils were re-vegetated by park crews using over 1,400 plants grown in the park nursery. The park hydrologist provided technical guidance and review on engineering plans for the project and field oversight with the assigned FHWA inspector.

Shunes Creek Diversion

The park issued a Revised Environmental Assessment and a FONSI for the reconstruction of a stream diversion on Shunes Creek in the southern part of the park. Construction plans for the preferred alternative were also prepared. While construction was on hold pending resolution of some legal issues, the water right owner stated the intention of moving the point of diversion downstream outside of the park, which would restore 0.6 mile of native fish habitat inside the park.

Proposed Determination of Water Rights for the Park

In November, the Utah State Engineer proposed to determine the federal reserved and state appropriative water rights for the park based on the water rights settlement agreement signed by the park, state, and counties in 1996. This will be acted on by the district court, and pending the resolution of any substantive objections received from other water users, will result in the legal recognition of water rights for the park, and the protection of essentially natural flow conditions in all major streams in the park.

Water Quality

In order to document water quality conditions where visitors wade or swim, 377 water samples were collected and analyzed for fecal coliform concentrations. A sub-sample of positive cultures was analyzed for bacterial DNA to determine the probable origins of the contamination. Laboratory results are pending.

Geological Resources

A cooperative project with the Utah Geological Survey continued for the mapping the geology of all USGS quadrangles containing portions of the park. The five quadrangles covering the southern part of the park are essentially complete, though difficulties in the digitization have delayed their finalization. Fieldwork was conducted on the seven quadrangles covering the northern part of the park. The Utah Geological Association published the *Geology of Utah Parks and Monuments*, which includes a 31-page description of the geology of Zion and a 15-page description of CEBR.

Air Resources

A particulate sampler was installed at Kolob Canyons as part of the national IMPROVE network. It will be the only station representing the Great Basin region. Continued

human development in the region may pose future air chemistry and visibility concerns for protected landscapes, including Zion National Park. The park also conducted passive ozone sampling again this summer, as a means to develop a qualitative database on ozone levels and screen for any significant ozone events or problems. No exceptionally high events were recorded in FY2000.

GIS Program

During FY2000, the GIS program completed projects for numerous park programs and functions. Project work implemented by the park GIS Specialist and GIS Technician included (and not limited to) the following:

- National Wetlands Inventory and Riparian Vegetation GIS database, tabular summaries and maps
- Phase 1 Metadata development for the park's GIS database
- Wilderness boundary GIS database
- Final GMP revisions and prescriptive zone acreage reports
- Peregrine Falcon Eyrie's 25 year GIS database
- Mexican Spotted Owl Protected Activity Center GIS boundary refinements
- Wildlife bird and mammal survey/census point locations GIS database refinements
- Paleontological GIS/GPS database updates
- GPS training and support to FIRE and RM&R program technicians
- Field biology, GPS, and GIS support to the I&M Vegetation map project (including backcountry helicopter compliance and planning)
- Hardcopy map production for Inholdings, Fire Plan, Wilderness, GMP, Cultural Resource Surveys and other projects
- Aviation Overflight Impact Analyses and maps
- Initial planning for the development of the parks centralized GPS database
- Hardware/Software upgrades, trouble shooting and maintenance
- General GIS and GPS database maintenance
- Respond to outside NPS data requests

Partnerships

In coordination with the Interpretation Division, vegetation staff are developing an education component to the native plant restoration program. Through a grant from the National Fish and Wildlife Foundation, volunteer participation is increasing locally and through VIPs with a minimum two-month commitment. The program is called Zion Partners - a group dedicated to native plant restoration in Zion. In FY00 we had over 20,000 hours contributed by volunteers.

The Park continued to be an active member of the Grafton Heritage Partnership Project (GHPP). Numerous meetings were held to discuss a proposed contact station and bridge that would be constructed using funds (ISTEA) received from the Utah Department of Transportation (UDOT). The unstaffed contact station would provide information on the

Canyon Transportation system and the bridge would connect the contact station with the Grafton town site. In support of the proposal, the park contributed support services by our landscape architect for design and engineering, archeologists for Section 110 survey, hydrologist for river-bridging hydrologic and geomorphologic issues, and Threatened and Endangered plant and animal surveys in accordance with Section 7 of the Endangered Species Act. Due to additional stipulations requested by UDOT that made the project cost prohibitive, as well as other contributing factors, a decision was made by the GHPP not to pursue either the contact station or the bridge. At present, the GHPP is repackaging the proposal for other Grafton related projects in hopes of retaining the available funds.

Vegetation Management

With a complete staff turnover in 2000, the vegetation staff reorganized and re-examined priorities, while carrying on the vision and scope of predecessors.

Native Plant Restoration

Former Horticulturist Betsy Galbraith spearheaded full operation and production of the Zion Plant Restoration Center. The greenhouse produced over 19,000 plants. A 2,000 square foot shade house was constructed to acclimatize plants to the outside environment following germination and propagation in the greenhouse, and to store them until planting. Plans for a headhouse were completed, and construction is currently underway. The structure will include areas for an office, a volunteer work area, and for equipment and material storage.

Vegetation crews completed re-vegetation projects at the east side entrance station, Sentinel Slide river channel project (see water resources above), and several areas associated with the newly-completed transportation system based on plans and specifications designed by the park horticulturist. In addition, vegetation staff provided daily maintenance to the new visitor center native plant landscape/restoration area covering about 10 acres. The horticulturist was heavily involved with Denver Service Center and park landscape architects in the design and specifications for the project. The horticulturist also provided daily oversight to the contract landscaping firm and worked with the USDA Plant Materials Center and other suppliers to assure high quality plant stock and to resolve other quality control issues.

Invasive Weed Management

The exotic plant management crew eradicated over 1,400 acres infested with saltcedar, Russian olive, scotch thistle, bull thistle, knapweed, white top, woolly mullein, and other target species. Most of the eradication work was accomplished through non-base funding, supporting temporary field technicians and volunteer expeditions. Over 900 acres were inventoried for weeds and mapped for future management action. In February 2001, a final report will be submitted highlighting accomplishments, recommendations, and documentation efforts. A GIS base layer of weed infested areas inventoried and treated will be created by May 2001.

Wildlife Management

Similar to the vegetation staff, the wildlife program experienced significant changes with the transfer of the biologist to the US Fish and Wildlife Service in September 2000. However, the biologist was present for most of the field season, providing continuity in the wildlife program until late in the season. Emphasis continued on monitoring, inventory and protection of critical habitat for threatened, endangered and rare wildlife. Monitoring of small mammal populations and grazing by large ungulates on prescribed burn sites was continued to assess post-burn wildlife responses to fire.

Peregrine Falcon

The peregrine falcon was removed from the federal Threatened species list in 1999. As a condition of de-listing, monitoring of species population status was required. Zion National Park has one of the longest and most complete monitoring records of peregrine falcon yearly nesting and recruitment in the western United States. As such, continuation of this monitoring program is important to the park and crucial to understanding the population status in a broader region. In 2000, 17 eyries (nest sites) were occupied by reproducing pairs of falcons. The number of young observed in these eyries totaled 31. Weekly updates to inform staff and the public regarding springtime peregrine nest site selection and applicable cliff closures were issued. As nest sites were selected, the weekly bulletins were used to re-open cliffs for rock-climbing. See RM&R database for specific nesting statistics.

Mexican Spotted Owl

The spotted owl is listed as a federal Threatened Species. Monitoring was continued in 2000 for owl nesting and related activities in known Protected Activity Centers, as well as additional survey in potential habitat. Funding was secured from the service-wide Natural Resource Preservation Program (NRPP) to support both peregrine and spotted owl survey and monitoring work for 2000. In December of 2000, critical habitat designations, as provided for in the Endangered Species Act, were proposed for the Mexican spotted owl, via Federal Register notice by the US Fish and Wildlife Service, including the entirety of Zion National Park. See RM&R database for specific nesting statistics.

Desert Tortoise

A small, isolated population of desert tortoise is known to exist on park and BLM lands adjacent to the town of Springdale. In an effort to determine the status of the population, a contract was issued to the Utah Division of Wildlife Resources to survey the area. Several tortoises were located and numerous burrows and other signs. However, because of the hot, dry summer limiting the activity of tortoises, the survey likely was compromised to some degree. Because the tortoise is a federal Endangered Species and

in the proximity of population development in Springdale, further survey is indicated to better understand the population size, age class structure, and habitat extent.

Mule Deer

Mule deer in the vicinity of the nature center, visitor/transportation center, and Watchman and South campgrounds presented safety and management concerns in 2000. While deer in this area have become familiar with and are unafraid of humans, deer were much more aggressive this season than in previous years, apparently focusing on human food. The extremely hot and dry summer may have contributed to this behavior, but that is unclear given the availability of irrigated vegetation in this area. Several documented incidences of deer removing garbage can lids and extracting plastic bag liners containing food were observed. Additionally, deer chased children in the campsites and in one case, a deer bit a child on the back of the neck. Deer are regularly seen in and among people in this area, even allowing humans to touch them. This poses a safety problem, especially as it concerns rutting behavior of males and fawn protection by females in the fall and spring, respectively. In these instances, aggressive behavior could result in injury to visitors. Clearly, the density of deer in this area is artificially high supported by irrigated vegetation and apparently to some degree, the attraction of human food. Removal of a small number of deer, targeted toward the seemingly most "tame", is necessary.

Aviation Management Issues

Air Tour Planning – Aircraft Overflights

In April of 2000, Public Law 106-181 was signed into law, requiring the NPS and the Federal Aviation Administration to work together in developing Air Tour Management Plans (ATMP's) for parks with aircraft tour overflights. Zion National Park was specifically mentioned in the 1987 National Parks Overflight Act as a priority for restoration of natural quiet, as affected by aircraft impacts. Zion, therefore, is recognized service-wide as a priority for air tour management also.

Sound Monitoring

In preparation for air tour management planning, additional sound monitoring was initiated to build upon work done in 1995 and 1998. The current monitoring is being conducted under an NPS contract with the acoustic engineering firm Wyle Labs, for identifying acoustical characteristics of the natural soundscape and air tour overflights of Zion. Using Zion GIS data and staff expertise, twelve seasonal monitoring sites were selected throughout the park, in a variety of acoustical zones characterized by terrain and vegetation. These sites were monitored for a month-long period in October 2000 to collect natural soundscape and intrusion sound level data representative of autumn conditions. The sites will be monitored again for one-month periods during the spring and summer of 2001 to provide a representation of the seasonal variations in the sound environment within the park. Similarly, one long-term monitoring site was installed in the autumn of 2000 and will operate continuously for one year. The year-long

measurements will quantify the full extent and severity of air tour noise intrusions. Once the natural soundscape has been characterized, the impact of noise intrusions can be assessed. Characterizing the soundscape, both natural ambient and anthropogenic impacts, is critical to future decisions facing park management, including the Air Tour Management Plan and evaluation of several proposals within the region for new municipal airports.

St. George Municipal Airport

The City of St. George continued its planning for construction of a replacement for the existing municipal airport; an effort began about six years ago. This culminated in publishing a Site Selection and Airport Master Plan followed by release of a draft Environmental Assessment for the new airport. While the EA was developed and released by the City of St. George, this development would be a federal action under the jurisdiction of the Federal Aviation Administration (FAA) and therefore, FAA is the approving authority. As part of the EA, a Noise Analysis was also published after the National Park Service, Washington City, and several environmental organizations raised concern over noise impacts to their various interests. It is important to note that the NPS concerns relate to protection of the park sound environment, flight routes over the park and the resultant aircraft noise. The NPS did not protest the need for, nor the location proposed for the new airport.

The National Park Service (ZION and WASO) commented extensively on the draft EA and Noise Analysis via letters to the FAA and the City during the public comment process, pointing out a number of material weaknesses, questionable methodology and inaccuracies in the analyses. Following a meeting, which was held at the park between the FAA and NPS to discuss NPS concerns with the analyses, the NPS formalized these concerns again, along with suggested analytical and remedial techniques, in a letter to the FAA requesting a revised Noise Analysis on October 16, 2000.

On January 30, 2001 the FAA responded to the NPS letter of October 16, 2000 refuting NPS concerns, concluding that no further noise analysis was necessary, that a "constructive use" of national park lands was not indicated by the first-issued Noise Analysis, and therefore, no mitigation was necessary under Section 4f of the Transportation Act. The FAA letter did not demonstrate that any new examination of the original analysis was made, rather it simply restated the original conclusions, which NPS argued had been flawed in the first place.

Immediately upon receipt of the FAA response of January 30, we were informed that the FAA had signed a Record of Decision for the EA on the same day, approving the St. George Airport project. An NPS response, if any, is pending as of February 2, 2001.