

GENERAL MANAGEMENT

The notable events of the year 2000 (dedication of a new visitor center and transportation system, completion of the park's general management plan, and a change in superintendents), made the year 2001 seem somewhat uneventful in comparison.

In partnership with the National Parks Conservation Association (NPCA), a park business plan was completed during the summer season. The ten-week planning process resulted in a plan that will help the park define future operational and management strategies to best care for and preserve the intrinsic values of the park.

The park shuttle system and visitor center received some "fine tuning" attention during the year, but in the main, served the public in the manner intended. Final planning for the new Human History Museum was completed, and the facility has a planned opening for mid-summer of the year 2002. The facility will also include a revised and updated park orientation film—an interpretive service absent but much requested at the new visitor center.

A very successful Intergovernmental Personnel Act (IPA) agreement with Utah State Parks was completed in late December. Rob Quist, park manager at Coral Pink Sand Dunes State Park served a one-year detail assignment at Zion working for the divisions of Interpretation and Resource and Visitor Protection. A reciprocal agreement detailed Assistant Chief of Interpretation Tom Haraden to state parks to help develop a system-wide interpretive program. Mr. Haraden's detail will be completed in early summer of the year 2002. The cross training and exchange of perspectives that are a fundamental part of IPA assignments have been of considerable benefit to both agencies.

ZION-1125



United States Department of the Interior



NATIONAL PARK SERVICE
Zion National Park
Springdale, Utah 84767

IN REPLY REFER TO:

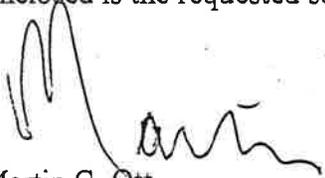
A2615 (ZION-S)

February 14, 2002

Memorandum

To: Director, Intermountain Region
From: Superintendent, Zion National Park
Subject: Superintendent's Annual Report
Reply Due: February 15, 2002

Enclosed is the requested subject report for Zion National Park for the fiscal year 2001.

 
Martin C. Ott

Enclosure

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.

The 16 percent decrease in annual park visitation and the events on September 11 had a direct impact on Amfac services and occupancy. Most international tour groups canceled their reservations after the incidents on September 11. Revenues were not as adversely impacted as they might have been due to rate increases granted based on the comparability studies performed by the Concessions Division. For example, while total room occupancy fell by 1.24 percent and group room sales fell 8.77 percent, room revenue increased 6.33 percent. Food & Beverage sales fell only 2.57 percent because the revenue generated in the Café made up for a substantial decrease in Dining Room sales. Retail sales fell 7.3 percent. The total combined revenue for the property fell .04 percent.

Amfac received two environmental awards this year because of their pro-active role in implementing significant environmental measures: the Travel Industry Association Annual Environmental Award and the Department of Interior Environmental Achievement Award.

Special Accounts projects completed this year included the design and construction of the employee recreation hall, replacement of the motel exterior and employee dining room doors, the tinting of the windows in the café and lodge which resulted in considerable energy savings, and a new dishwasher and dishwasher heat exchanger in the kitchen. The kitchen garbage disposal was replaced and a new ice machine was purchased for the employee dining room.

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 was completed to the satisfaction of both the National Park Service as well as Mr. Mangum. Mr. Mangum built a small wrangler shack within the perimeter of the holding corral. The Concessioner paid for the construction and built it according to National Park Service specifications. The structure was designed with the idea that it could be completely removed in less than 24 hours if necessary. Phone lines and electrical lines were installed by the Concessioner.

While the numbers of regular one-hour and three-hour rides declined 8.29 percent and 4.82 percent respectively, overall revenue for this operation increase 15.81 percent due in part to a rate increase granted by the National Park Service, but mostly because of the increased number of Red Rock Ride trips that the Mangums provided this year.

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. There were additional sales items added to the inventory this year, but after consideration, sales were discontinued due to conflicts with the concession contract.

Parks Transportation, Inc.

The shuttle began operating on April 2 this year and service was ended on Oct 28. There was discussion about extending the shuttle season through November, but due to budget restraints, the decision was made to continue the April through October schedule.

There were 2,128,733 passenger boardings this year, which includes 208,295 boardings on the town loop, 1,913,494 boardings on the park loop, 5,066 charter boardings, and 1,878 wheelchair boardings. PTI operated 44,226.88 hours this season versus the 45,106 hours projected in the 2001 Implementation Plan.

A reverse osmosis water softening system was added to the facility for an additional cost to the park of \$15,400. The system greatly reduced spotting on the windows, which was one of the major visitor complaints last year.

The Interpretive Bus Tours was so well received last year that the frequency was increased this year to three times a week in the spring and fall and daily during the rest of the season.

A bus and trailer caught fire on August 22 due to the faulty factory installation of a hydraulic line in the engine compartment. All passengers were evacuated safely, but the equipment was a total loss. All buses were pulled from service for immediate inspection. Nine were found to have the same problem and were repaired by PTI and returned to service by the first week in October. The equipment was still under warranty so Eldorado National will replace the equipment.

The shortfall in the revenue collected from the transportations fees and the amount owed on the service contract was in excess of \$1.2 million.

Visitor satisfaction and comments were mostly positive again this year with some suggestions for improvement.

ADMINISTRATION

The administrative division continues to function as a team with branch chiefs in budget, contracting and human resources.

Administrative Personnel in FY01 were as follows:

Budget Analyst –	GS12
Budget Analyst –	GS09
Administrative Technician -	GS05
Office Automation Clerk -	GS04
Information Specialist -	GS11
Computer Specialist -	GS09
Human Resource Officer	GS12
Human Resource Specialist	GS09
Human Resource Asst (VACANT)	GS07
Personnel Actions Clerk	GS05
Contract Specialist	GS12
Purchasing Agent	GS06
Supply Technician	GS06
Admin Support Technician	GS06

Budget

The ONPS budget for fiscal year 2001 was \$5,467,000 with \$400.00 being set aside as fee enhancement (no-year) funding. This will finalize the use of our fee enhancement dollars. This year the park received a \$535,000 base increase in support of the Transportation System and a \$94,000 base increase as part of the Natural Resource Challenge program. This is also the final year that the park will receive a funding supplemental for the Concessions Management Specialist position.

After final adjustments and additions throughout the year funding was accountable in 265 accounts and 10 different funding sources. Breakout by fund source is listed as follows:

• 01) ONPS	5,550.6
• 01) SEPAS	277.4
• 01) Volunteers in Park	5.8
• 01) Tunnel Operations	205.5
• 01) Commercial Filming	3.3
• 01) Incidental Business Permits	4.5
• 01) Minor Search and Rescue	4.9
• 01) Major Search and Rescue	51.1
• 04) Fee Enhancement (No-Year)	.4
• 06) Reimbursable	157.1
• 22A) National Park Pass	2,004.4

• 25) Recreation Fee demonstration	2,558.1
• 26) Donations (Includes Kolob)	39.6
• 34) Quarters (Includes Kolob)	221.2
• 45) Transportation Fund	1,510.9
• 68) Concessions Franchise Fees	4.2
• 85) Fire Program	2,729.8

Total fiscal responsibility for FY2001 was \$15,151,100.

Contracting/Procurement/Property

Advance acquisition plans were prepared for nine “proposed projects,” for projects over \$25,000.00.

Prepared bid documents, conducted bid openings, awarded, and administered the following contracts:

Contracts:

CX 1590-01-0001 – Maintenance service for elevator – one-year contract with renewal options up to five years. Awarded to Thyssen Dover Elevator \$2,500.00.

CX 1590-01-0003 – Alarm monitoring of systems throughout Zion – one-year contract with renewal options up to five years. Awarded to Mountain Alarm \$3,420.00

CX 1590-01-0004 – Trash collection –one-year contract with renewal options up to five years. Awarded to Camco Disposal \$21,780.64.

CX 1590-01-0005 – Museum “design” work by A & E. Awarded to Campbell & Associates \$30,013.00. (Short selection process utilized to facilitate need for expediency for design work to begin)

CX 1590-01-0006 – “Design” for Watchman campground – phase 2 – Awarded to Sear-Brown \$12,844.00. Architect & Engineer contract.

CX 1590-01-0007 – “Design” for emergency service building – Awarded to Campbell & Associates \$39,138.00.

CX 1590-01-0008 – “Design” work for rehab of nature center – Awarded to Campbell & Associates \$3,841.00.

Completed contract for Tunnel Spring project at Pipe Spring, negotiating final price so no claims would be filed.

Cooperative Agreements:

CA 1590-A-004 - Purgatory Work Agreement

CA 1590-A-005 – Utah State University (Ameri-corps work crew for Zion) \$18,000.00

CA 1590-A-006 – Utah State University (Ameri-corps work crew for Cedar Breaks)
\$12,000.00

Request for quotes:

Helped Capitol Reef with a painting contract.

Developed card key system for South Entrance, issued over 370 keys (Beehive Parking Technologies)

Payments:

Administered and processed invoicing, pay estimates for the bus shuttle service – processed payments number five through seventeen for a total of \$2,681,540.69.

Site manager for payments on purchase orders, agreements, third party drafts.

Lease of building:

Assisted in the development, site survey, and application for office space/lease at Cedar City for the Zion Helitack/Fire Module/Kolob Fire team. Application was submitted February 14, 2001 – walk-through July 3, 2001, building accepted July 16, 2001.

Administrative Retreat:

Organized location, reserved facility, contacted facilitator, and made arrangements for the Administrative Retreat. Robert McKeever was the facilitator for the retreat that was held April 18 and 19, 2001 in Mesquite, Nevada.

Fleet Management:

Assisted in developing different proposals for managerial strategies for fleet management.

Contacted several GSA lease contractors. Developed different scenarios for lease options. Prepared cost comparison sheets on all aspects of vehicle leasing.

Obtained specifications, requirements for vehicles in advance, and utilized year-end money to purchase several vehicles.

Purchase of Vehicles:

Maintenance Division: Utility Truck, extended cab pick-up

Chevy S-10 vehicles purchased at year-end.

Ranger division: Dodge Dakota

Helitack Crew – six-pack

Business Plan Coordinator:

Attended workshop at Rocky Mountain National Park. Coordinated with students on setting up office work area and logistics in arriving at Zion. Attended weekly meetings and telephone conference calls for status updates of the business plan.

Drafted memo on business plan and prepared documents for explaining program.

Assisted with detail work sheets/interviews with divisional chiefs. Worked extensively with editing, rewriting plan, worked with printer on editing and finalizing the product.

Attended final workshop in Washington, DC and presented the business plan.

Property:

Supply Technician initiated completed property inventory. Finalized and submitted "special" report on bus property inventory.

Information Management

Zion's information management network continues to grow. In addition to the current site responsibility, we added a new satellite area in Cedar City for our fire management operations. We also began the process for converting to Lotus Notes. A second permanent computer specialist was hired to assist with our growing information management program.

SEPAS funding was provided in FY2001 for the following items:

1. Upgrade Network Capabilities - \$4,900
This project allowed us to purchase an additional RAID 5 external disk array and add a wireless network connection to our Greenhouse operation.
2. Upgrade Kolob Canyons Computer Network - \$3,600
This project allowed installation of server backup system and RAID 5 disk array.

Human Resources

Staffing

Permanent Employees

ZION 111

CEBR 4

PISP 6

Term Employees

ZION 8

CEBR 0

PISP 0

Seasonal Employees

ZION 90

CEBR 9

PISP 8

A total of 15 merit promotion vacancy announcements; 31 recruitment bulletins; and 22 delegated unit announcements were issued by the human resources office.

Permanent Employees Hired:

Zion - 21 CEBR - 0 PISP - 0

Term Employees Hired:

Zion - 6 CEBR - 0 PISP - 0

Seasonal Employees Hired:

Zion - 34 CEBR - 8 PISP - 11

Employee Development

OWCP Training for Supervisors and Program Assistants

08-01/01 9:00am-11:00pm and 1:30pm-4:00pm Two sessions

This was basic overview of OWCP for COP, supervisory responsibilities and how to complete the necessary forms.

NEPA/106 Workshop

04/03/01 – 04/05/01

Zion was selected to host one of the regional workshops on National Environmental Policy Act (NEPA) and National Historic Preservation Act-Section 106 compliance. There were two workshops, the first for folks that had attended a similar class in the past three years(a refresher) and the second was a 2.5 day workshop for folks that have never had this type of training before or recently. There were significant changes to the regulations and interpretation of regulations recently, as well as issues of the new Director's Orders and the NPS Management Policies affected by or affecting our management of compliance processes.

Retirement Workshop

02/27/01 and 02/28/01 Two sessions each from 8:00am to 12:00pm

This was a four-hour workshop stressing the need for saving, especially through the TSP. Other subjects discussed were new TSP options, Roth IRA; investments for college savings; mutual funds; insurance needs; income tax tips; wills and trusts and other subjects pertaining to a comfortable retirement.

Administrative Retreat

Our Administrative team coordinated a 3-day retreat in Mesquite, NV. We arranged to have Bob McKeever from Lake Mead facilitate this conference. We had a number of agenda items that were recommended. We also tasked ourselves with developing a division "Purpose Statement."

Classification

The Dispatch positions were audited and upgraded to GS-6s; Ecologist; GS-408-11; Resources Careers Benchmark used; reclassified Administrative Technician at PISP, GS-303-07; redescription of Natural Resource Specialist (Wildlife), GS-401-07/09; reclassified Supply Technician, GS-2005-06.

Employee Relations

We had a total of 13 employee relations issues:

- Leave abuse
- Sexually explicit material printed on government computer
- Sexual harrassment
- Grievance against supervisor
- Informal grievance/aggressive behavior/safety hazard

- Written warning/improper conduct
- Misuse of government vehicle
- Written warning/AWOL
- Poor performance
- Written warning/(2 employees-conduct)
- Written warning/improper computer access
- Domestic violence of LE personnel/MSPB hearing

Diversity Recruitment

A recruitment fair at Tuskegee University was coordinated with Rick Delappe. Rick came back with many applications to be used park-wide for seasonal positions. Some parks have also used the applications gathered at this recruitment.

Position Management Plan

A position management plan for Zion National Park was developed. Coordination was done with each division's current organization and possible needs for the future in relation to organizational structure. A policy was developed on how Zion will handle recruitment, staffing and position management options.

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 (ranger programs and staffing/operating the information desk at the Zion Canyon Visitor Center) and non-personal services (*Zion Map and Guide*, handouts, site bulletins, bulletin boards, wayside exhibits, website 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.

With the implementation of the shuttle system came a new visitor flow pattern. The interpretive division has been adapting to these changes. Some new and innovative ways of interacting with the public were undertaken. The successful ranger-guided shuttle tours were expanded to one per day during the main visitor season. An outdoor ranger talk was implemented at the Temple of Sinawava to reach the visitors that congregate at the end of the shuttle route. 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:

1. Feel satisfied that they were afforded a quality experience.
2. Have the opportunity to learn about and understand at least one of the major resources for which the park was established.
3. Know that they have been to a national park and how Zion fits into the fabric of treasures that make up the National Park Service.
4. Assume their responsibility to be stewards of park resources and minimize their impacts on them.
5. Have a safe visit.
6. 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).
7. Enjoy themselves, feel refreshed and re-energized, and experience the "recreation" of mind, body and spirit.

Following is our report for the year 2001:

Personnel

Chief I&VS Ron Terry, GS-13 (arrived February 11, 2001)

Assistant Chief I&VS Tom Haraden, GS-12 (Acting Chief Interpreter, GS-13, until February 10, 2001) (detailed to Utah State Parks starting in April 2001)

Supervisory Park Ranger Bob Showler, GS-11

Interpretive Specialist Christi Carmichael, GS-09

Park Ranger (Education Coordinator) Sandy Groves GS-09

Park Ranger Frank Hayde, GS-09

Park Ranger Kean Mihata, GS-09

Curator Mark Herberger, GS-11

Secretary Janis Kali, GS-06

In 2001, 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

1. Reorganize scheduling to maximize visitor services. This included adding scheduled guided shuttle tours to provide one per day during the peak season. A new ranger talk was initiated at the Temple of Sinawava to reach the visitors that congregate at this very busy location in the park.
2. 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 2001, 15-year seasonal Steve Dobell served half time as interpretive coach for the rest of the staff.
3. The park became one of the first to institute the new Message Project standards in our publications program. This effort began the process of providing all printed information in a standard format to improve agency recognition within the public at large.

Interpretive Attendance and Visitor Response

Visitor Center or Program	Attendance
Zion Canyon Visitor Center	There is no means to count visitor center attendance.
Patio Talks (4/day)	12,692
Hikes (2/day)	2,237
Evening Programs (2/day)	16,715
Shuttle Tours (1/day)	4,205
Interpretive Patrols	170
Kolob Canyons Visitor Center	
Talks	1,052 (including hike numbers)
Interpretive Patrols	1,305
Information Mail Outs	6,080
Information Phone Calls	10,170 (these numbers do not include calls and mail-outs from BC or Zion VC desks nor Kolob)

Response to the 2001 interpretive programs was very positive.

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. New site bulletins included one for motor coach tours and one for school visits during the spring and fall. An existing fish site bulletin was upgraded and the 2001 version of the Free Fee Day Entry Card was produced.

Foreign language translations were produced in Spanish, German, French, and Italian. These brochures are 12-page newspaper format and 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. The project was funded through the fee demonstration program. A twelve-page *Zion Map & Guide* in newspaper format was produced for the 2001 summer season. A winter version of the newspaper was also produced. Also in newspaper format is a new edition of the *Zion Backcountry Planner*. This 8-page publication includes information that visitors could heretofore obtain only verbally at the information desk or through non-NPS guidebooks. Inclusion of this new information serves to better prepare certain backcountry users and streamline the permits process.

Assistant Chief of Interpretation Tom Haraden has organized and taught an NPS publications training workshop in February 2001. This training provided participants with the necessary skills for producing quality NPS publications.

Non-Personal Services

The park is working with Harpers Ferry Center staff on the development of a Park-wide Wayside Exhibit Plan. Outdated exhibits, much of it in poor condition, will be replaced with new exhibits, which will incorporate consistent design elements and updated information. Phase one of the project is completed and phase II research and writing is in progress.

Twelve new bulletin boards were installed for backcountry trails and in the main canyon. These boards were utilized to provide park, hiking, and safety information for park visitors.

The lack of a comprehensive park orientation program at the visitor center was an issue for many visitors. To address this interpretive need, the focus of the program being planned for the auditorium at the Human History Museum was changed from cultural history to a comprehensive program. This program will be in place in the auditorium in 2002.

A new program announcement board was developed and installed behind the information desk at the visitor center. The existing information desk was inadequate in size and not well designed for functionality. An addition to the information desk was designed and installed to address the shortcomings of the existing system.

One Transportation Information Station (TIS) was installed in the town of Hurricane and one at Mt. Carmel Junction. These are additions to the stations existing at Watchman Campground and on the east side of the park. These stations provide updated park information and shuttle information to visitors up to 20 miles before they enter the park.

Educational Outreach and Junior Ranger Program

The **Educational Outreach Program** reached a total of 4,073 students. These students participated in the spring and fall Zion Outreach Program, as well as other special on-site and off-site environmental education programs presented during the year. The Zion Outreach Program is offered every year to elementary schools in Washington County and within a 50-mile radius of Zion National Park. These programs focus on environmental themes and meet the science standards for Utah State's core educational curriculum. All programs included pre- and post-visit materials and an in-classroom presentation by the park's education staff. A total of 131 outreach programs were presented to 3,030 students this year. The education staff consisted of Education Coordinator Sandy Groves (NPS) and instructor Maria Frangelli, whose position for the outreach program is funded by the Zion Natural History Association. Janis Kali (NPS) provided additional assistance this year.

The outreach staff also presented a number of special on-site and off-site programs. In the fall, we participated in the Iron County Water Fair where we presented eight programs to just over 200 5th grade students, and in the spring we took part in the Washington County Water Fair and presented seven programs to 203 students. We also presented 24 special on-site programs to 640 students. Ron Kay from interpretation and Caroline Rhoads from resource management both assisted in presenting some of these on-site programs.

The **Junior Ranger Program** at the Nature Center ran from Memorial Day weekend until Labor Day weekend, with 1,453 children (6 - 12 years old) participating. The program was offered seven days a week, with 2 1/2 hour sessions given twice daily. Staffing for the program included Education Coordinator Sandy Groves and Seasonal Park Ranger Maria Frangelli who serves as assistant coordinator. Additionally, there were four full-time ZNHA employees, Danielle Deane, Shirley Bartschi, Mario Johnson, and Marna Bastian. ZNHA also sponsored a volunteer instructor, Anne Baker (through the Student Conservation Association Program), who contributed 450 hours to the Junior Ranger Program.

Our summer Junior Ranger Program continues to offer a unique national park experience for children that is well received by both Junior Rangers and their parents. As one parent put it, "This is the most creative super program we've ever seen. We have visited 15 national parks and this is the only one that has the "class approach" here! It is exciting and cool! I am so impressed with the quality of the teachers and the program!! I am a teacher and I recognize the outstanding teachers here!! Awesome!!" Another parent wrote, "The Jr. Ranger Program was the best one we saw this summer (Bryce - Grand

Canyon). Our 11 yr. old grandson was eager to go back for the afternoon session. Your staff did a terrific job. Thanks.” Even one of the Junior Rangers wrote to thank the park for the program. She wrote, “This was a really good camp. I enjoyed it very much and I want to come back to Zion just to come to this program....”

About 2,500 children participated in our year-round Junior Ranger program. This program consists of a self-guided booklet for children 6 to 12. Children complete activities in the booklet, participate in a ranger-guided program, or explore the visitor center exhibits. An activity sheet is available for children under 6 years of age.

Curatorial Management

Zion National Park’s museum collection consists of 205,643 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.

During FY 2001, curatorial staff continued to promote the collections as a valuable information, research, and interpretive resource. Target audiences included both NPS and non-NPS researchers, local individuals and institutions, park employees, and other Zion National Park partners. Through advertisement and access procedures, over 88 in-park and out-of-park individuals utilized the collections during the fiscal year. Their interests included historical research into events and individuals, “Great (railroad) Lodges of the West”, Mission 66 structures, archeological excavations, vegetation analysis, and “place names”. Establishing a professional rapport within local communities resulted in several significant accessions including Union Pacific memorabilia, historic photographs, and an NPS stamp collection. Museum staff continued to catalog a Southern Paiute ethnology collection of over 100 items. Another curatorial task centered on upgrading museum records. Pre-ANCS+ loans and de-accessions were researched, reconstructed, and records entered into the computer program.

During FY 2001, three volunteers and one student intern provided nearly 500 hours of service for curatorial operations. Their work resulted in the elimination of the biology backlog, organization and addition of scientific nomenclature to the herbarium collection, completion of the annual inventory, and an initial survey and organization of the park’s historic black & white photo collection. The initial survey of the photo collection included sorting thousands of historic images and creating a subject index. Photocopying, cross-referencing, and indexing over 300 images into a hands-on file were completed.

Recreational Fee demonstration funding provided the mechanism to continue with our paper archives cataloging project. Archivists from the Western Archeological Conservation Center reviewed and sorted the collection, packaged it, and transported 45 linear feet of material back to WACC for cataloging. The project will continue into fiscal

year 2002. ANCS+ funding provided new computer equipment including a color printer, scanner, and digital camera.

One major project dominated our curatorial efforts during FY 2001 – continued development and coordination of Zion's new Human History Museum. The design concept entered its final phase with completion of the design package. Over 100 graphics were selected, over 100 artifacts have been secured including incoming loans from other sources, and the entire text including labels and captions was finalized. Additional Recreational Fee demonstration funds were successfully applied for in order to meet the scope of the renovation project and the park's special projects supervisor began to oversee the project. Installation of exhibits will take place in early June of 2002 with a scheduled opening set for later that month.

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. RMP Project Statements were reviewed along with completion of 5 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. Management operations received considerable curatorial-related input in order to develop the park's business plan. Research into museum operations, staffing, and project time estimates highlighted the need for additional FTEs in order to accomplish the curatorial workload. The curatorial staff also assisted the resource and visitor protection division with research into historic trends and incidents, and with a special law enforcement investigation/evidence case

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 for those park units. Curatorial staff was also able to assist Bryce Canyon National Park with a variety of routine and technical museum issues.

Interpretive Planning

The interpretive staff continued to be involved in the planning for the new Zion Human History Museum. This museum will be located in the lobby of the old visitor center. The opening for the new museum is scheduled in mid-June 2002.

Phase II of the park's wayside exhibit plan is still in the planning stage.

Public Information Officer

Tom Haraden and Bob Showler, with Frank Hayde as backup, handled the duties of PIO until the arrival of the new chief of interpretation/PIO in February 2001. There were a number of significant media contacts this year, including two fatalities, several search and rescue operations, and numerous wildland fires. Over 350 public information contacts were completed. 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. Twenty-five people counted individuals and species of birds between Grafton and the east entrance of the park. A total of 76 species were counted.

VIP Program

In 2001, 166 volunteers contributed a total of 19,526 hours of assistance across the board to the entire park staff (not just the interpretive division). The VIP budget for the year was \$5,800.00 for the very low cost of \$.29 per hour contributed. To pay for those services at the GS-5 rate would have cost about \$221,034—a gain to the nation of over \$215,234. The park also utilized the Student Conservation Association volunteer program. These two volunteer programs continue to be valuable additions to park operations. They provide prospective employees with park experiences they would have difficulty obtaining without these options.

Zion Natural History Association

The ZNHA continued under the direction of an eleven-member board of directors. Dr. Wayne Shamu of Hurricane, Utah was the board president. Lyman Hafen continued as the Executive Director with responsibility for the entire ZNHA operation. Joann Hinman continued as Director of Operations with supervisory responsibility over four center managers. Vauna Lewis continued as bookstore manager at the visitor center. During FY 2001, ZNHA employed a total of 26 people, including part-time employees.

In FY 2001, 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 \$1,607,507, down 4.92 percent from 2000.

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 1,500 children. ZNHA provided funding for

four full-time instructors and one SCA volunteer 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 APPL convention in St. George in March.

New publications produced by the association included a *Zion Canyon Shuttle Guide* and a children's coloring book. The association funded the printing of 600,000 copies of the *Zion Map & Guide*, which is the newspaper-guide distributed to almost every vehicle entering the park. They also funded the printing of 150,000 copies of the winter *Zion Map & Guide* as well as 50,000 copies of the *Zion Backcountry Planner*. 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 2001 retreat at Boulder Lodge in Boulder, Utah. The board signed a Memorandum of Understanding with Zion National Park to start the Zion Canyon Field Institute. Board member Joe Sharp heads the field institute committee, which is working with Zion National Park to determine the best way to proceed.

RESOURCE AND VISITOR PROTECTION

Fee Management

2001 Visitation – 2,056,615 compared to 2000 Visitation – 2,454,248 - down 17%.

2001 Revenue - \$6,576,985 compared to 2000 Revenue - \$7,401,811 - down 12%.

We were the number one seller of National Park Passes for the second year in a row. We sold 43,131 of the passes for a total of \$2,156,600.00. 6,902 of these National Park Passes were the result of upgrading other park entrance receipts (\$161,176.00). We are in full compliance with national directives in providing upgrades and customer service.

We upgraded our cash register keyboards to decrease mistakes particularly with credit card sales. As a result, we have had a 10% decrease in overages/shortages. The indirect result was reduced time spent making corrections for both the remitters and the budget office.

PC Anywhere was installed at Kolob. This enables access to the Advantage Software in the fee office to complete their remits. It also simplifies overall accounting, statistics

collection, and summation of revenue totals. We also installed backup power units at all entrance stations so that all collection points can continue to function during power outages. We opened a new employee lane at the South Entrance station that seems to have been a great success for all employees.

Traffic was successfully managed at the South Entrance during busy times when the visitor center parking area was full. This was necessary during most summer weekends and holidays due to the closing of the overflow parking lot, which was in use the previous year. This was accomplished by utilizing a combination of scheduling, supervisors, and overtime expenditures to cover personnel.

Contributing personnel to assist on major incidents supported Wildland Fire, SAR, and EMS operations in the park. Many of these major events could not be accomplished successfully without the assistance of fee personnel.

Two Interior vehicles were purchased to replace two GSA vehicles per the superintendent's vehicle plan. We also purchased new computers and installed new office furniture to better utilize the small fee management workspace.

Periodic contact was maintained with the Bryce Canyon Fee Program to maintain consistency in operations. This included several meetings where both parties discussed issues and concerns.

Personnel

The fee manager position was left vacant during this period in an attempt to review the program during the summer months. During this time, the chief of operations was assigned to acting fee manager and oversaw the entire operation, as well as his regular duties. In addition, a new GS-9 Fee Supervisor/Park Ranger was hired and trained.

In an effort to provide career development opportunities and support the superintendent's initiative for Zion workforce integration, fee management detailed 6 of the permanent staff out to 3 different divisions (interpretation, fire, and administration) on 3-month cross-training assignments. Each of the divisions paid for a seasonal to back-fill the permanent positions. Even though this left a less experienced workforce, it provided career training/enhancement opportunities to the staff. This also improved the relationship with other divisions in the park. The division also benefited by hiring and training new seasonals to fill in whom we later hired into regular seasonal and permanent positions.

Campground personnel were integrated with the rest of the fee operation at the stations and tunnel, where in the past, they have been kept strictly on campground operations.

In order to enhance staff skills in serving the public, fee management hosted two customer service training sessions that the entire fee staff attended. The training was

open to all divisions and other area parks (attendees included maintenance, administration, rangers, CEBR, and BRCA).

Other training included a 40-hour supervisory training attended by all three field supervisors, wildland fire training for 4 VUA's (fee collectors), orientation and operational training, and miscellaneous other training topics.

A field supervisor participated in an outreach program for workforce diversity recruitment at Tuskegee, Alabama, which prompted an award for diversity recruitment. A number of staff received a variety of awards for various accomplishments during this time.

External Reviews

Numerous audits were performed during the year. Some concentrated on operations, others on accounting, as well as fee demonstration projects.

The Inspector General audit closeout indicated Zion had the best fee operation that they had seen after reviewing several other park areas in the process.

We participated in the McKinsey study that was a review of the fee programs across the nation. It was directly related to addressing Congress for the purpose of getting the Fee demonstration Program into permanent legislation. Reviewers were pleased with our program.

A program review was performed by region at the request of the superintendent. A few changes have been recommended and will carefully be addressed during 2002.

National Issues

Fee staff attended annual National Park Service Reservation System (NPRS) training in Cumberland, Maryland and participated in the new contract negotiations for the NPRS. They also played a key role in the writing of the Fee Fraud SOP Revision for NPS-22. We are one of a few parks that are in full compliance with the SOP.

The park had three free days over the Veterans Day Weekend at the direction of the Secretary of the Department of Interior.

Safety and Security

Cooling vests were purchased and hours reduced that staff worked at the tunnel due to heat exhaustion problems, which occurred last year. This seemed to be well received and was effective.

Other safety accomplishments included the restriping of the outgoing traffic lane at the south entrance to slow traffic down and move it away from the kiosk door, the addition of slow signs to entrance stations and tunnel locations, the addition of stop signs at Watchman to improve pedestrian safety around kiosk, the installation of a security camera and panic alarms at the Kolob Visitor Center, and the relocation of all safes into the remit room with an added security camera and motion detector.

Resource Management

One of the staff participated in the Interdivisional Resource Rehab crew spending two weeks rehabilitating backcountry campsites.

The campground staff worked on a project to remove Russian thistle plants in and around Watchman Campground. They initially coordinated a ½-day weed pulling venture with resource management staff and followed up with over 40 hours out hand pulling over 20,000 Russian thistles.

An additional qualified seasonal was made available to finish up with archaeological monitoring when a seasonal in resource management left them empty-handed.

Canyon District

The district ranger stated that 2001 was the most productive and successful period in his five years at Zion. Significant strides in all program areas were accomplished. Rangers responded to a near record number of complex search and rescue incidents, including the fatality on the Canyon Overlook Trail, a short haul off of Angel's Landing, and several other technical evacuations. These operations were carried out in a manner that was not only professional and safe, but in two cases were recognized with awards. A similarly heavy EMS workload was handled in the district with several lives saved by rangers.

All commissioned rangers actively participated in the aftermath of the terrorist attacks against this country. Four Zion staff (to include the assistant superintendent) were activated shortly after the September 11 attacks and were dispatched to Washington, D.C. for two weeks or more. Other commissioned personnel have since been detailed to recreational areas with dam sites or icon parks identified as terrorist targets since September 2001.

Visitor and resource protection operations were enhanced by a proactive bike patrol program, which dedicated a ranger each day to high visitor use areas during the summer season. During this time we also maintained a daily presence on district trails in addition to road patrol activities. Proactive efforts led to a record number of arrests and drug cases. Our continued liaison with the concession reduced the number of law enforcement incidents there. Significant investigations were completed, which include fatalities, a felony methamphetamine distribution case, several internal investigations, and ending an

ongoing car clout problem in the park with the arrest and conviction of two individuals. Resource protection efforts included increased monitoring of archaeological sites and a successful hunting patrol operation in the fall.

Resource management operations included dealing with ongoing wildlife incidents and working closely with the division of resource management. The district supported wildland fire operations, detailing two rangers as helicopter crewmembers, and providing others as firefighters.

Canyon district rangers were active in the community, supporting public safety personnel there on an ongoing basis, including a successful bicycle safety day, special events and parades. The district hosted a variety of training sessions attended by other parks and outside agencies.

A ranger attends all safety committee meetings, and the division continues to fully support the safety program at Zion. The result was no lost-time incidents and no significant accidents.

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

- 119 NPS EMS cases
- 29 advanced life support cases
- 9 advanced cardiac life support cases
- 47 significant basic life support cases
- 43 minor EMS cases
- 2 lives saved by EMS
- 30 ground NPS ambulance transports
- 6 helicopter ambulance transports
- 31 search and rescue incidents
- 3 lives saved by SAR

The park played host to several training sessions for NPS and other agencies, including the annual law enforcement refresher, wilderness training, and Leave No Trace training. Numerous outreach training was also conducted, including Technical Rescue, Leave No Trace, CPR, Emergency Vehicle Operations, EMT-Basic, Basic OAS Safety, and various fire courses.

A MOU for interagency law enforcement assistance was initiated and/or reinstated with the Town of Springdale Police Department, and the Washington and Kane County Sheriffs Offices. This MOU will allow for emergency assistance from either agency during both emergencies and routine calls for assistance.

2001 R&VP Workload

Visitation – 2,056,615
Ranger Incidents – 4,261

Law Enforcement Incidents

Incident Type	2000	2001	% change
Citations	415	749	+45%
Warnings	765	1,315	+42%
Arrests	33	63	+48%
Drug Violations	17	93	+80%
DUI	11	13	+15%
Alcohol Violations	35	90	+62%
Resource Violations	77	138	+45%
Weapons Violations	16	33	+52%
Vandalism	12	14	+15%
Burglary	0	0	0%
Agency assists	44	57	+23%
Larceny	45	66	+32%
Visitor assists	468	507	+8%
SAR	31	31	0%
EMS	191	119	-35%
Total CIRs	2,562	4,261	+39%

Plateau District

Some of the most dramatic increases occurred in the slot canyons. This was the fourth 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, Mystery, and Pine Creek canyons could be attributed to visitors' increasing understanding of the permit requirement and exposure through use.

The staffing indicated below reflects the increased workload backcountry permits operations has experienced for an effective and efficient operation.

Staffing

Cindy Purcell – District Ranger PFT GS-11
Patrol:
Cody Cole – Patrol Supervisor PFT GS-9
Vid Walker – Lava Point Seasonal GS-5

Ryan Ballentine – Fire Pit Knoll Seasonal GS-5
Matt Walls – Fire Pit Knoll Seasonal GS-7

Permits:

Ray O'Neil – Permits Supervisor PFT GS-9
Marcia Gilles – Lead Permits Temporary GS-7
Jill Sheesley – Ranger GS-5
Julie Hancock – Ranger GS-5
Rosie White – LE Ranger GS-5
Katie Lyons – LE Ranger GS-5

SCA/Volunteers:

Alex Stegall – SCA (12 weeks)
Zack Hambelton – SCA (12 weeks)
Annette Werderich – SCA (12 weeks)
Brian Raper – VIP
Nick Jorgenson – VIP
Renee Ferris – VIP

District Incident Summary

- 11 weapons violations on KT road
- 3 wildlife incidents; spotlighting, possession, molesting
- 2 damage to government property/BC signs
- 2 natural resource damage; KT road and Virgin River
- 12 dog violations in the backcountry
- 5 incidents of driving off roadway
- 9 drug/alcohol cases on KT road
- 4 incidents of theft from vehicles parked at trailheads on KT road
- 1 case of credit card fraud
- 1 DUI arrest
- 314 vehicle license, driving, equipment violations on KT road
- 1 warrant arrest
- 14 visitor assistance calls
- 6 open container violations
- 3 minor in possession of alcohol and/or controlled substance
- 2 livestock trespass/grazing violations
- 14 closure/trespass violations
- 8 camping violations: 3-East Rim, 4-KT Road area, 1 Subway
- 16 BC permit violations: 13 Subway, 2 Orderville, 1 East Rim
- On staff: 2 Park Medics, 5 EMT's, and 1 First Responder
- 5 completed Canyonlands SAR training
- 5 completed Rigging for Rescue
- Coordinated EMT-B refresher for all park EMS staff
- 8 EMS cases in BC
- 5 technical rescues
- 6 non-technical rescues
- 4 searches

Resource Protection

- Patrolled over 3,000 miles of trails and canyon routes
- Dismantled a total of 30 fire rings
- Removed 50 graffiti panels
- Removed an estimated total of 150+lbs. of trash
- Inventoried exotic plants and provided eradication assistance
- Collected annual campsite monitoring data on all designated campsites
- Performed trails clearing and project work
- Completed Subway rock-cairn route and Cable Mountain rehab project with interdivisional work crew
- 40 hours spent with the archeological survey crew
- Conducted Peregrine Falcon monitoring for climbing restrictions
- Ten district personnel obtained Red Cards
- Provided a canyoneering safety training for all staff
- Conducted and documented archeological site data
- Leave No Trace Master status achieved by lead education employee
- Initiated human waste disposal program in the Narrows
- Worked with Access Fund to improve climbing route access trails with clean up
- Developed backcountry trip planning and education displays in visitor center

Backcountry Visitor Use Statistics

During the 2001 season, Zion National Park issued 7,358 permits to 25,699 people who spent 14,166 nights in the backcountry. This was a 6% increase over the number of permits issued during the 2000 season.

1998 was the first year that permits were required for all of the park's technical canyons. There have been no significant changes in permit requirements since 1998. The cost of permits did decrease from \$5 per person per night to \$5 per permit from the 1999 to the 2000 season. 2000 was the first year that there was a fee for overnight climbing permits.

There have been a number of changes in permit requirements over the last 20 years. Once those changes have been accounted for, it appears that we had a 100% increase in backcountry use from 1980 through 1990, and another 100% increase from 1990 to 2000. 1997 was the first year that the park charged for permits.

We issued 1,282 permits in June 2001. This was the busiest month ever for Zion's backcountry beating June 2000 by 116 permits. The busiest month during the 1998 season was July. 586 permits were issued then.

We only issued 25 permits during December 2001. This was the lowest permit total for any month in the last four years.

In 2001, November was a busier month than March. 387 permits were issued in November 2001. 137 permits were issued in November 2000. This was a 182% increase.

General Backcountry Use

(Numbers in parenthesis are the percentage increase/decrease over 2000/1999 figures)

	<u>2001</u>	<u>2000</u>	<u>1999</u>
Number of Permits	7,358 (6%/27%)	6,947	5,358
Number of Users	25,699 (7%/35%)	23,875	16,835
Visitor Use Nights	14,166 (-4%/21%)	14,687	11,252
Average Group Size	3.5 (3%/12%)	3.4	3.1

Types of Permits

Back Country Camping	2,519 (-4% /23%)	2,618	1,938
Narrow Cyn Day	3,437 (15%/42%)	2,910	1,990
Narrow Cyn Overnight	934 (-11%/19%)	1,051	761
Overnight Climbing	433 (14%/-35)	371	669

Specific Areas

Narrows Day	646 (1%/25%)	640	482
Narrows Overnight	870 (-12%/18%)	989	710
Subway Day	1,399 (1%/27%)	1,389	1,022
Pine Creek Day	417 (24%/63%)	317	154
Keyhole Cyn Day	268 (48%/82%)	139	49
Mystery Cyn Day	215 (50%/62%)	143	81
Behunin Cyn Day	120 (56%/63%)	77	45

Southwest Desert	173 (-12%/35%)	196	113
Hop Valley & La Verkin Overnight	1,032 (-10%/54%)	1,141	470
Virgin River Boating	35	11	

Communication Center

The communication office established an Emergency Medical Dispatch (EMD) program and all dispatchers attended the required training.

A second operation station (radio console) was purchased and will be functional by the spring of 2002. This second station will allow a dispatcher to be dedicated to an incident allowing the primary dispatcher to continue with day-to-day operations.

All permanent dispatch positions were upgraded to the GS-06 (from GS-05) after an audit recognized the increased knowledge and skills needed for these positions.

The office increased its security by installing a double-locked "dutch" door with window. A security camera and intercom were installed at the front door of the headquarters building, along with an additional camera in the fee counting-remittance station.

During the summer, a second seasonal position was hired and funded by FIREPRO dollars, which assisted with the record year of wildland fires in many years. Scott Cooper was detailed to the Zion Helitack for one pay period. Erik DeGroat and Karen Fleming backfilled numerous shifts for fire management and both assisted on wildland fires in the park. David Holmes ended a 3-year commitment in December serving as the NPS representative on the Great Basin Dispatch Steering Committee.

Fire Management

The implementation, interpretation and data calls for the National Fire Plan dominated fire management activities in 2001. The new directives in the National Fire Plan focused fire management activities on fuel treatments. Along with the implementation of fuels project came new staffing levels for all agencies and a heightened accountability reporting system to Congress. This, on top of transfer of key fire management staff, created a huge workload for the staff.

The National Fire Plan added many positions to Zion. An 8-person helicopter module along with a 120-day contract helicopter was funded and stationed at Cedar City, Utah. Due to the hiring competition of fire resources among agencies, seasonal positions were not filled. The park developed a detail program for Zion Staff to obtain skills as a helicopter crewmember and fill out the module. Detailers were given 40 hours of

helicopter training and served on the module for two weeks. At the end of the season the detail program was open to all NPS personnel. The program placed 10 employees through the program. The helicopter program supported 20 fires with 250 hours of flight time.

Additional positions included a Wildland Urban Interface (WUI) Prescribed Fire Specialist and a Fire Education and Information Specialist. Subsequently, the WUI Fire Specialist position has been vacated. Other vacancies continued in the fire program throughout the year. The Fire Use Module leader left the program in July and the Fire Management Officer was vacated in May and filled in September. We can expect the quick turnaround of new positions and trouble getting full performance employees within the agencies to continue for another year or two.

The Zion Fire Use Module assisted the following NPS agencies: BITH, BRCA, CEBR, GOSP, GRCA, PIPE, LAME and ZION. They supported the following fires: 5 wildland Fire Use, 13 Wildland Suppression Fires, 7 Prescribed Fire execution. They completed preparation of 5 prescribed fire units for 868 chains and worked on 3 hazard fuel units for 27 acres. They worked 145 shifts on various assignments as a crew and 54 shifts related to single resource or details.

A new operations center was located at the Cedar City Airport for the Helicopter and Fire Use module. This will be a temporary office for the Helicopter Module until the new Air Operations facility is built by BLM, scheduled for completion in the spring of 2002. The Fire Use Module will eventually move into the fire operation center expansion by the USFS in Cedar City, scheduled for 2003.

In 2001 there were two lightning fires in the park that helped us to restore approximately 1,100 acres of fire dependent ecosystem in Zion National Park. The Langston fire was managed as a fire use fire for 700 acres, and the Wypopits fire was under a confinement strategy for 595 acres. An Interagency Fire Use Team managed the Langston fire for 14 days during its most active burning period. The fire began on August 16 and was declared out in October. The Wypopits fire was managed as a wildfire in confinement strategy managed by park staff.

Zion had the highest number of fire starts recorded this season at 36. There were 7 fire use fires and 29 wildfires. The park supported 51 support actions to interagency fires both in and out of state.

Fuel reduction continues along the park boundaries. Over 1,600 piles were created to be burned this winter, thinning along the boundary. Burn units have been identified and funding secured. An Environmental Assessment (EA) was contracted out to cover 13 hazard fuels, wildland urban interface projects. A finding of no significant impact is expected to be signed by the spring of 2002 so the projects can be implemented.

Fire Effects Monitoring

Five new plots were installed at Bryce Canyon NP (3 black sagebrush and 2 mixed conifer) and 10 new plots were installed at Zion in the mechanical Wildland Urban Interface project area of Blue Creek. Plots were re-sampled at Great Basin NP, Golden Spike NHS, Lake Mead NRA, Bryce Canyon NP, Arches NP, and Zion NP. Approximately 55 plots were re-read.

Data has been entered into the Fire Monitoring Handbook (FMH) Software. The data has been discussed with fire and resource managers evaluating objectives and plans. Data was presented at the Fire Conference 2000 in San Diego CA from Zion NP and Bryce Canyon NP in poster presentations. Data was also presented at the George Wright Society Conference from Bryce Canyon NP in a poster presentation.

Kolob District

The year 2001 again proved to be an exciting year for Kolob Canyons personnel. The Kolob Canyons staff performed well as a team to accomplish projects in all disciplines, hence all projects and activities identified in the FY01 divisional operations plan were completed.

Total visitation in 2001 was down 7.2% from 2000 numbers. Fees collected, visitor center count, and numbers of backcountry permits issued were also down slightly. A total of \$240,158 in fees were collected in 2001. 152,313 people visited Kolob Canyons in 2001.

Fred Hoeger served as the Kolob Canyons District Ranger. Erin Warrem and Becky Johnson each served as protection rangers in 1,040-hour appointments.

Bruce Winslow occupied the permanent GS-07, Bio-Tech position. Bruce accepted a position with the BLM as an Outdoor Recreation Planner in November of 2001. This position has been vacant since that time. We plan to add versatility to this much-needed position by filling it with a commissionable person.

Kodi Schoppmann occupied the permanent GS-303-07 as the Kolob Fee Program Supervisor. Craig Thexton and Kathleen Cook served in Term VUA positions. Jeannie Willard filled the 1,040 position. Kathleen Cook accepted a permanent position with Lake Mead in April 2001. Kim Oldroyd filled the vacant position as a Term VUA in August of 2001.

Richard Fesler occupied the permanent maintenance position and Rick Exell served in the 1,040-hour maintenance position.

All of the Kolob Canyons staff performed well with a team concept approach to attain goals in resource management, backcountry projects, short talks, guided hikes, outreach programs, Junior Ranger programs, bulletin boards, and other projects.

The Kolob Canyons District secured four SCA positions and one VIP in 2001. This was accomplished by being awarded several grants from applications submitted in 2000. Bruce Winslow supervised the VIP and SCA programs.

The district applied for and received another SCA position through the Geologist in the Parks program. Stacey Hartung was hired in this position. She completed a two-year project of recording the geologic story of Kolob Canyons and utilized that material with interpretive skills to create outreach for public schools and in-house interpretive programs. She also conducted guided hikes in Taylor Creek through mid-summer.

Four SCA resource assistants were funded along with living expenses through the NPS Public Land Corps program to work on an eleven-mile section of the LaVerkin Creek trail. Due to challenges in locating candidates in a timely manner, only two positions were filled. This required a modification of projects to exotic plant eradication in the Kolob Canyons and Horse Ranch Mountain areas, maintenance and rerouting of sections of the Middle Fork of Taylor Creek Trail, and the delineation and rehabilitation of the Timber Creek Overlook Trail.

Leo Yan was hired as our park-funded SCA this year. He was teamed with the specially funded SCA's, Joey Beatty and Alex Brooks, to accomplish the needed work on the modified projects.

The VIP and SCA programs allowed for the increase of interpretive programs, resource management projects, and small trail maintenance projects.

Bruce Winslow continued as the Intermountain Region Coordinator of the Leave No Trace Program.

As the IMR Coordinator, Bruce was involved in some pre-Olympic events at Snow Basin Ski Resort in February and March for school groups visiting the venues for the 2002 Olympic Winter Games.

Bruce was a co-instructor for the fifth consecutive year on the Zion Master Course for LNT. Ten candidates completed the five-day course. The yearly LNT trainer course was again conducted in conjunction with an orientation trip for park staff through the Kolob Canyons district. Bruce also attended the BSA National Jamboree in Virginia as part of the NPS contingent for the interagency LNT trails and stations. Materials and travel expenses were paid out of a national LNT account.

The Kolob Canyons staff continually works with Scout groups to ensure an enjoyable visit and compliance with park regulations and Leave No Trace Principles. The district

continued attendance at Cedar Breaks District monthly roundtables to present LNT and park information.

The district also manned a booth at the BSA Scout-A-Rama in Cedar City and assisted the Utah National Parks Council with a LNT Trainer course for 65 participants, which resulted in having at least two LNT Trainers in each BSA District.

Backcountry Operations

Bruce Winslow, Bio-Tech, coordinated with resource management to have several volunteer groups from Americorps 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. Americorps groups also worked the LaVerkin Creek drainage to control scotch thistle, mullein, and tamarisk. The Kolob Canyons staff were able to continue in exotic plant eradication using mechanical and chemical means in Hop Valley, LaVerkin Creek, Timber Creek, Taylor Creek, and Camp Creek with 6,000 mullein, scotch thistle, and tamarisk removed.

Other backcountry work included a trail reroute of about 260 feet in the Middle Fork of Taylor Creek, and the Timber Creek Overlook Trail rehabilitation, which included water bars, delineation, interpretive signs and revegetation between the picnic area and trail.

The yearly campsite monitoring in LaVerkin Creek was completed along with trail monitoring. The interdivisional backcountry work team also spent time in LaVerkin Creek pruning along the trail and rehabilitating a few campsites.

An air quality monitoring was continued in 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, and sound monitoring.

The district provided continued presence on the Park Wilderness Committee. The district also successfully presented the Middle Fork of Taylor Creek project for approval.

The Wilderness Management plan is in the early stages with Kolob Canyons district participation.

2001 marked the second season of using the Trakker software for issuing backcountry permits. It was also the second season that permits were a flat \$5 instead of \$5 per night per person. 1,020 permits were issued for Kolob Canyons district in 2001, down slightly when compared to 2000 with 1,067 permits issued. The number of user nights also decreased from 5,524 in 2000 to 3,957 in 2001. Use of the backcountry overall was down only slightly from 7,147 visitors in 2000 to 6,528 visitors in 2001.

Interpretation

Interpretive short talks and roves were down significantly in 2001 due to shortage of staff and lack of adequate transportation. We had a vacant VUA position from May into August, and the regular fee vehicle was outfitted for protection. Protection rangers urgently needed the extra vehicle; therefore, on many days the VUA's had no transportation to the interpretive area at the top of the scenic drive. VUA's did much informal interpretation at the front desk. Protection rangers handled interpretive duties that included the information desk, short talks, and roves. All staff updated and completed informational and trailhead bulletin boards.

Guided hikes, handled by SCA Stacey Hartung, were down slightly. Guided hikes would have stayed even with 2000 if Stacey's season had been longer than the allotted 2 months.

In 2001, 10 short talks were presented to 132 visitors. Both of these are down drastically from 2000, due to staffing shortages. These programs included topics on botany, geology, and wildlife.

Guided hikes were presented on Saturday mornings in June and July. These hikes began at the Taylor Creek trailhead and ended at the Larson Cabin. They were about two hours in duration. Approximately 60 visitors joined us for an average of about 10 visitors per hike.

Roving interpretation suffered the most from lack of vehicles and staffing shortages. 1,305 visitors were contacted on 147 roves.

Over 200 Junior Ranger badges were distributed in 2001. Acceptance of the program was good, and appropriate changes were made to improve the program. Updates and changes in the Junior Ranger program are in the works for 2002.

Boards were changed and updated monthly. Subjects 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.

Overall, 2001 was a lean year for interpretation in the Kolob Canyons district. With adequate staffing and transportation, interpretation can rebound in 2002 to our previous high numbers.

Public Outreach

The high point of interpretation for 2001 was the school outreach program. This program has expanded greatly in the last few years and has been constantly updated to fit with

current school curriculum and teacher's lesson plans. Acceptance is outstanding with both teachers and students. In 2001, six schools and three separate grades participated in the outreach program. Overall, 46 classes were visited with 1,281 students in attendance. Feedback on the program from students and teachers has been nothing but overwhelmingly positive.

Fee Management

Entrance and user fees collected for 2001 totaled \$240,158.00, a 5% decrease from 2000. Kolob Auto Weekly passes at \$10 and National Park Passes at \$50 had the highest sales.

Bio-Tech Bruce Winslow, and LE officers Becky Johnson and Erin Warrem assisted the fee collection operation at times when staff was severely limited due to fires, training, and vacant positions.

Kolob Canyons fee collection staff accomplished most of their goals for the year 2000. Each of them succeeded in acquiring new skills and expressed satisfaction in individual job performance.

Emergency Services

Kolob Canyons reported 14 BLS Medicals, 3 minor SARs in 2001. Seasonal Protection Ranger Erin Warrem attended the 40 Technical SAR course in Canyonlands this spring. Erin and Craig Thexton (VUA) trained regularly with the Zion Canyon SAR Team. The Kolob Canyons SAR and EMS cache remains sufficient to handle all basic medicals and all but the most technical SARs, which would require more manpower than is present in the Kolob Canyons district.

Law Enforcement

The Kolob Canyons law enforcement staff reported a total of 96 case incidents in 2001. This number is down slightly from 2000. These cases ranged from agency assists to numerous natural resource and traffic violations.

Law enforcement staffing consisted of a district ranger and two seasonal rangers. The addition of a backcountry ranger allowed for much-needed proactive patrols in the backcountry and provided for extended periods of coverage in the frontcountry.

The Kolob Canyons archeological sites in Timber Creek and Camp Creek were monitored on a monthly basis to detect new occurrences of vandalism and looting. The Kolob Canyons archeological sites remained unchanged in 2001.

Kolob Canyons district staff reported 107 backcountry patrols covering 1,403 miles of trail in Kolob Canyons in 2001. 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.

Fire Management

This was again a busy year for wildland fire, and the Kolob Canyons district made personnel available to serve on fires as much as possible.

Fred Hoeger completed the required annual fire safety refresher and initiated task books for Base/Camp Manager, Ordering Manager, Equipment Manager and Receiving/Distribution Manager.

Kodi Schoppmann was red carded and completed S-130 and S-190. She was dispatched to the Langston Mountain fire and assisted with logistics on the Cougar Mountain fire.

Erin Warrem was dispatched to the Cougar Mountain and Langston fires. She also completed S-217 helicopter crewmember, the required yearly fire refresher and completed a two-week detail with Zion Helitack in Cedar City. Becky Johnson completed the annual fire refresher. Craig Thexton was dispatched to the Cougar Mountain and Orten fires as a hand crewmember.

Bruce Winslow participated as a member of a Type II Great Basin Incident Management Team as Supply Unit Leader and secondary duties as FACL, FDUL and LSC3, and participated on fires in Wyoming (Green Knoll), Nevada (Clear Creek), and Idaho (Idaho).

MAINTENANCE

Buildings and Utilities

Zion averaged 88% occupancy in the permanent housing and 90% occupancy in the seasonal housing in FY01. Interior rehabilitation of 75% of quarters #36 was accomplished in FY01 with housing reimbursable funds. The quarters will be completed by January of 2002 and used as a seasonal house in the future. Permanent quarters #46 was converted to seasonal housing after a shower was added to the ½ bath.

The interior of Historic Building #77, used as the auto shop, was rehabilitated. In a joint effort by Roads and Trails and Buildings and Utilities employees, the drywall was replaced and painted, the electrical system, lighting and HVAC were upgraded. The bathroom was replumbed and the wooden roll-up door controls and tracks were repaired.

Plans and specifications for the rehabilitation of the Nature Center were begun with the input of the regional historic architect as well as SHPO.

The new visitor center lighting and cooling systems were fine-tuned and upgraded with the help of NREL. Task lighting was purchased and installed for some NPS and ZNHA employee workstations. Toe fans were installed in the interior wall in an effort to cool down the NPS back offices and the ZNHA book storage. Other upgrades were planned and designed for the towers once funding sources are available.

Rough-in electrical, plumbing and HVAC was accomplished in the new resource division's greenhouse support building. Most of the general construction for this building was let to contract.

A propane system "call out" directive was created primarily for the B&U employees to follow in case of leaks, breaks or other problems relating to the system. The procedure has been incorporated in maintenance. A training session for the dispatch office and the structural fire brigade is scheduled for January 2002. The procedure and safety controls were borrowed from the private industry.

The collection box at the Temple of Sinawava water system was upgraded in the spring. This repair increased the "gallons per minute" collection for the system allowing it to keep up with the peak summer use.

New pressure sensitive tank level controls were installed in the east side water tank. The existing controls had failed allowing the tank level to drop below acceptable levels.

Annual and preventative tasks were completed such as; sewer main cleaning, heating and cooling start-up and shutdown, fire hydrant flow tests, backflow test, pressure-reducing valve maintenance.

Assistance was provided at PISP with electrical upgrades, water pump repairs, and phone system upgrades.

Assistance was provided at Kolob with water system repairs, comfort station upgrades, and the radon filter system testing.

Kolob Maintenance

Kolob maintenance operated in FY01 with one permanent and one seasonal employee. Kolob had another accident-free year in the maintenance program.

Accomplishments:

Acquired a dump truck from the reuse program to be used for snow plowing and dirt and rock removal.

Reorganized the visitor center basement and the maintenance shop after the departure of the Zion Fire Use Module.

Replaced the pumps, motors and controls for the water system storage tank.

Worked with the Utah State Resource Division in an attempt to test and update the radon charcoal filter system.

Assisted with the new recycle program at Kolob.

Repaired two major water line breaks.

Began the bathroom rehabilitation at the visitor center.

Began the planning stage with drawings of the overlook rehab project

Training included: Hazcom, Backflow training, COTR, OWCP training, OSHA, RUWA water conf.

Roads and Trails

In a joint effort by Buildings and Utilities and Roads and Trails, crew efforts were directed at the interior of the auto shop. New lighting fixtures and wiring were replaced, new sheet rock and paint, the roll-up doors were repaired and re-hung, the old vehicle hoist was removed and a new hoist was installed for safety.

The construction of a new horse corral across from Zion Lodge was accomplished with park crews. It was constructed entirely out of pipe and should serve for many years with very little maintenance.

With the help from Ashdown Bros. Construction, a four-mile section of road from Zion Lodge to the Temple of Sinawava was overlaid with 2" of asphalt. This project was badly needed due to the damage that occurred to this section of road by the implementation of the new transportation system. The crew also chip sealed the road from the south entrance to the river bridge. The main park road from the south entrance to the east entrance was centerline striped.

An enormous amount of downed and dead trees were cleaned up and chipped around Zion Lodge and the horse corral.

The maintenance crew assisted Pipe Spring with completion of the Tunnel Spring project by hauling away over two hundred yards of excavated material. The crew also pruned, chipped and cleaned up the old campground area at Pipe Spring.

A complete digital picture sign inventory of all Roads and Trails signs was established.

The historic rock porch at the Cedar Breaks visitor center was completely removed and relayed with new supports added. The old plywood deck was removed and replaced with a more stable concrete surface. This was a day labor project that was accomplished by the Zion trail crew. Another project completed at the Breaks this year was the rehab of 13 campsites. The sites were graded and graveled, new log delineation was installed, and 12 large dead fir trees were removed and cleaned up from the campground for safety purposes.

A new employee entrance lane and gate was established at the south entrance. Park maintenance crews completed the lane improvement; the gate installation was by contract.

The Canyon Overlook Trail received new chain link out on the overlook portion; several railings were replaced and painted.

The fence crew reconstructed 1,500 feet of boundary fence on the Lucile Hawks and Grimshaw boundary on Horse Ranch Mountain. The crew also constructed 500 feet of new lay down fence at Cedar Breaks National Monument.

This year the park had one six-person SCA crew, which included two leaders; they worked directly with the backcountry trail crew. The crew established a base camp at Stave Spring on the east boundary of the park and worked the East Mesa trail complex. The project consisted of pruning, grading, and installing water bars.

Eight new employee-parking areas were established at the Watchman housing area this year, which enabled the residences of the housing area to get personal and park vehicles off the roadway. This made for a much safer environment for vehicle and pedestrian traffic in the area.

SAFETY MANAGEMENT

The superintendent's personal commitment to safety management was implemented in 2001 and is a top goal of the management team. Basic elements include a dedicated safety officer/manager; written Safety and Accident Prevention Program with employee input in its design; identification of employee safety training needs; and renewed safety committees that were given strong management support and visibility.

The three-park area has adopted the safety philosophy of the Dupont Company that was retained by the NPS as safety consultants.

Key programs that are being used and strengthened are safety inspections of all facilities and operations, and incident investigation procedures with a root cause analysis element. In addition, special programs focusing on safety communication and safety behavior are

emphasized. Managers and supervisors have adopted a commitment to safety through setting the example and "walking the talk."

RESOURCE MANAGEMENT AND RESEARCH

As always, it was another busy and interesting year throughout the park and in the Resource Management and Research Division (RMR) programs as well. The transfer of the Wildlife Biologist, Geographic Information Systems (GIS) Specialist, Archeologist and Planner/Natural Resource Specialist left a large void in our operation. These positions were vacant for 4 to 8 months during the visitor and field season, placing an inordinate workload on remaining permanent and term staff. Loss of several fire staff from transfer also impacted RMR operations. Despite this, the bases were not only covered, but new projects were initiated and completed. Vacated positions and lapses presented opportunities for organizational adjustments.

Management and Organization

As mentioned above, some reorganization and job re-description was initiated. To broaden the supervisory and program management experience of the assistant division chief, several natural resource programs were shifted to his oversight. He now supervises the hydrology and vegetation programs, in addition to previous responsibilities for cultural resources and administration. The GIS program was shifted to the responsibility of the division chief.

The natural resource specialist/planning position was re-described to a planning and compliance position to recognize the increased workload in project planning and compliance, changes in NPS policy regarding more rigorous compliance requirements, and to continue implementation of the GMP. The position was graded as a GS-12 to reflect the level of expertise needed to accomplish this work. The position has been advertised.

The GIS specialist position was re-described to reflect the increased knowledge, skills and technological complexities of this function. The position was advertised and filled as a GS-12 to reflect this complexity and to successfully compete for talented applicants.

The wildlife biologist position was also re-described to GS-7/9. We felt that this was an excellent opportunity to develop a young person for an eventual journeyman position, using the NPS Intake Program. A biologist graduating from the NPS Intake program was selected to fill this position.

The archeologist position was advertised during the FY and filled near the close of the calendar year.

The park was fortunate to receive a \$94,000 base increase through the Natural Resource Challenge for monitoring of Threatened & Endangered species and exotic plant management. These funds provide a "secure" source of funds for critical programs that to date had been funded by occasional regional or WASO projects funds, or fee demo to a limited degree. These programs were implemented with the new money, with 100% used for staff or supplies directly involved in these programs. A report on use of the funds was filed with IMRO and WASO.

Program Management

Budget

The division had an operating budget of \$743,831 in FY01, which was an increase from FY00 (\$717,056). This was comprised of \$667,300 in ONPS funds, supplemented with \$66,531 in special project funds applied for through project proposals, and a \$10,000 donation from the Zion Natural History Association.

ONPS Account List

Vehicles	\$ 30,400
Wilderness/Backcountry	69,261
Wildlife	68,377
Vegetation	66,149
Division Chief/Support Assistant	121,938
Geographic Information Systems	67,900
Assistant Division Chief	78,404
Cultural Resources	70,871
Wildlife Natural Resource Challenge	52,000
Vegetation Natural Resource Challenge	<u>42,000</u>
	\$ 667,300

Special Project Fund List

Phase II Metadata Development	\$ 6,700
Parunuweap Tamarisk Eradication	20,000
Canon Grant	8,431
Visibility Monitoring	4,000
Bacterial Water Assessment	21,400
Native American Graves Protection & Repatriation Act	<u>6,000</u>
	\$ 66,531

Staffing

The division usually operates with 9 permanent employees, but this year 4 of those positions – the wildlife biologist, GIS specialist, archeologist, and planner/natural resource specialist became vacant over the course of the year. In addition to our permanents, we utilized 4 term employees, 24 seasonal employees, 2 intermittent employees, 2 Student Conservation Association fellows, and 82 volunteers. Volunteers working in cultural resources, vegetation, and in program administration, contributed 5,152 hours. Use of volunteers continues as an important means to accomplish project work, provide fulfilling opportunities for the public to participate in park management, and provide student interns with practical experience in resources management.

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
Natural Resource Specialist*	GS-11
Support Assistant	GS-06

Term positions:

Archeologist	GS-09
Lead Biologist Science Technician	GS-07
GIS Technician	GS-07

* vacant part of the fiscal year

Natural Resources Management

The park issued 8 research permits for the following subjects: insect fauna, forestland inventory, algal flora, fuels management, amphibians, seeps and springs, vegetation mapping, and lizards. The latter four were continuations of prior research.

Wildlife Management

The wildlife program had many changes in 2001, with one of the most significant being a base funding increase from the Natural Resource Challenge (NRC). Another change was the new biologist hired via the NPS Intake program in May 2001, soon after the start of the summer field season. Fortunately, the wildlife technicians on board had extensive experience working in Zion and the field season went smoothly.

Various types of projects including inventory and monitoring were done this year. The NRC provided needed funding for monitoring sensitive species such as Mexican spotted owls and peregrine falcons. Monitoring of post-burn grazing by large ungulates on prescribed burn sites was done outside of NRC monies. Through the Colorado Plateau Network Inventory Project, inventories were conducted at Cedar Breaks and Pipe Spring National Monuments for small mammals, reptiles, and amphibians. Cedar Breaks was also inventoried for bird species. Finally, in the fall of 2001, a virus went through the mule deer population and killed susceptible individuals, which became a high-profile issue for the park.

Mexican Spotted Owl

Zion has excellent slot canyon habitat for the Mexican spotted owl. This species continues to be federally listed as threatened. Sixteen historic Mexican spotted owl territories were relocated and monitored for pair occupancy in 2001. Of those sixteen territories, fifteen were occupied. Four additional occupied territories were discovered in 2001, increasing the number of known territories by more than one-third. Two fledglings were seen accompanying a parent, but reproduction was very difficult to monitor. Spotted owls nests are usually in the higher parts of narrow slot canyons with little accessibility. However, for the threatened Mexican spotted owls, it is critical to determine pair occupancy and potential nesting frequency in order to gauge productivity.

Peregrine Falcon

Although the peregrine falcon was removed from listing in 1999, the U.S. Fish and Wildlife Service still mandates population monitoring. Zion has conducted over 25 years of monitoring peregrines. In 2001, nineteen historic peregrine territories were relocated and monitored for pair occupancy and fledgling production in 2001. Of those historic nineteen territories, sixteen were occupied by breeding pairs and all sixteen nests produced young. Three additional occupied territories (totaling nineteen occupied territories) were discovered in 2001 due to greater staffing, and one of those new territories produced fledglings. Thirty-three young in seventeen eyries were monitored through the fledgling stage. The success rate of 2.1 young per pair surpassed the U.S. Fish and Wildlife Service recommended goals following delisting of the peregrine falcon.

Southern Colorado Plateau Network Inventory Projects

The Colorado Plateau Network provided inventory monies for parks that had a poor representation of their vertebrate fauna.

Reptiles and Amphibians (Herpetology)

Herpetological inventories were conducted in Cedar Breaks, Pipe Spring, and Zion. Cedar Breaks was found to have no reptiles or amphibians. Pipe Spring and Zion had a wealth of species, 14 and 23 species respectively.

Birds

While Zion and Pipe Spring had a history of being monitored for bird species, Cedar Breaks did not. In 2001, Cedar Breaks had an extensive inventory of birds, locating 45 species. None of the species found were U.S. Fish and Wildlife species of special concern, although a Utah state species of concern, the three-toed woodpecker, was found.

Mammals

Both Cedar Breaks and Pipe Spring were inventoried for mammal species in 2001. At Cedar Breaks, 13 species were captured and included one U.S. Fish and Wildlife species of special concern, the long-legged myotis bat. Pipe Spring had an even higher number of species, due most likely to the presence of water in an arid environment for bats. Nine of the 17 species were bat species, and three were U.S. Fish and Wildlife species of special concern: Allen's big-eared bat, long-eared myotis, and Yuma myotis.

Mule deer

Database

A database was created this year to document the interactions between humans and animals through Human-Animal Interaction Reports at Zion (HAIRZ). This was to document the various negative interactions that visitors and employees were having with habituated animals, especially mule deer. This year, the park received reports of deer pushing past visitors to reach picnic tables and even a deer that kicked a visitor to get food. One deer was destroyed because of its aggressive behavior toward a child. These interactions are not acceptable, and near the end of 2001 and into the next year, the park staff have been working on effectively educating visitors.

Epizootic Hemorrhagic Disease

During the fall, a disease known as Epizootic Hemorrhagic Disease (EHD) hit the lower Zion Canyon deer herd. This disease affected an undetermined number of deer in the Zion headquarters and Springdale area, but did not appear to extend beyond this part of Zion Canyon.

Nine deer, which either died naturally or were put down by park staff, were attributed to EHD from outward symptoms or through lab tests. Fresh tissue and blood samples were collected from seven animals put down by park staff and turned over to a veterinary lab. For five of the seven samples, the test results showed conclusively that EHD was the culprit. In the seventh sample, a closely related disease known as blue tongue was found (the sixth sample did not show any signs of EHD or blue tongue). The lab used a polymerase chain reaction (PCR) test linked to DNA analyses. Seven deer were also found dead with tissues too decomposed to determine cause of death.

The EHD outbreak occurred during the deer-hunting season, raising concern among area hunters, the Utah Division of Wildlife Resources, and the State Veterinarian. The park wildlife biologist worked closely with each office to coordinate press releases to calm public concerns and to meet state wildlife health considerations. Significant cooperation was developed among the three agencies to manage this issue biologically and from a public relations standpoint.

The deer mortality incidents became very controversial when an employee of the Zion shuttle system contractor made accusations that herbicides being used by park staff along Zion Canyon roadways were possibly causing the deer mortality. This accusation instigated investigations by the Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA). A state agriculture inspector, at the request of EPA, came to the park to investigate handling and use of herbicides. His report concluded that park staff handled all applications satisfactorily. Additionally, specific lab testing on deer tissues was conducted for phenoxy-herbicides and other herbicides. These lab results were negative, clearly demonstrating that no herbicide residues were found in the deer sampled.

With EHD going through the herd, the NPS wildlife veterinarian from Fort Collins assisted the Zion staff by linking with the veterinary labs, as well as teaching an animal immobilization course. This was an opportunity for the Zion wildlife biologist to become trained in using tranquilizing guns and learning how to handle tranquilized deer. Subsequently, three deer in Watchman Campground were tranquilized to collect blood samples and survey their general condition, given the EHD situation. One of the three had symptoms of pinkeye disease, a bacterial infection that can be caused by the genus *Moraxella*. This was later confirmed from lab tests. How wide the pinkeye problem exists is undetermined, but a significant outbreak occurred in the Zion Canyon herd in 1993-1994.

Native Fish

The park was an active participant in the Virgin River Resource Management and Recovery Program, a multi-agency program to recover threatened and endangered fish in the Virgin River Basin. Woundfin (*Plagopterus argentissimus*) and Virgin Chub (*Gila seminude*), which have been listed as endangered since the 1970s, are native to the river downstream of the park, and the Virgin Spinedace (*Lepidomeda mollispinis mollispinis*),

which occur in the park, are managed under a conservation agreement to avoid formal listing. Program activities include investigating the habitat requirements of these fishes, monitoring populations, removing exotic species, and restoring stream flow and riparian lands.

Annual Native Fish Monitoring was conducted on the North and East Forks of the Virgin River in October of 2000 and 2001 with the results for Virgin Spinedace shown below.

Year	Virgin Spinedace Density in fish/100 m ²								
	North Fork of the Virgin R.			East Fork of the Virgin R.			North Creek		
	All	Adult	Y-O-Y ¹	All	Adult	Y-O-Y ¹	All	Adult	Y-O-Y ¹
2000	65	21	42	365	67	300	57	15	42
2001	48	30	14	45	41	4	92	39	66

¹ Y-O-Y = Young-of-Year (fish hatched in May-June of that year)

From: Freidell and Curtis, 2002. Virgin Spinedace Population Monitoring Summary, 1994-2001. Utah Dept. of Wildlife Resources, Publication number 02-01.

Once again the Virgin River in the park, and particularly the East Fork, provide some of the most productive native fish habitat in the basin. An overall drop in fish numbers occurred from 2000 to 2001, much of which is attributable to very few young-of-year being produced in 2001. This trend held for most streams in the basin, and is most likely due to very dry conditions and the absence of large flood events. North Creek showed a marked increase in the number of adult Spinedace.

Vegetation Management

Volunteer participation was paramount in the amount of work accomplished in 2001--4,846 vegetation management volunteer hours were logged for the year. The park received a public land corps grant that enabled three Utah State University Americorps crews to work on weed management and native plant restoration for a total of nine weeks. They were critical in accomplishing a huge amount of physical, on-the-ground work. Another crucial component of vegetation volunteerism was Partners in Parks--recruiting local, dependable volunteers to aid in restoration work on a weekly and monthly basis.

In addition to duties in Zion, the park botanist served on the Northern Colorado Plateau Network Technical Committee and the Intermountain Region Weed Action Plan Steering Committee.

Invasive Weed Management

The exotic plant program focused on aggressive treatment of high priority weed species.¹ Consequently, fewer species (15) were treated than in previous years, but treatments of each targeted species were more thorough. The program uses integrated pest management practices, with an emphasis on wise use of herbicides. Volunteers are utilized to control weeds that respond well to manual techniques.

Between monitoring and weed treatments, the exotic vegetation crew and volunteers covered 2,028 acres of the park, the majority of which are drainages infested with tamarisk and Russian olive. Kolob Terrace, the North Fork of the Virgin River, Kolob Canyon, and Horse Ranch Mountain also had high concentrations of priority plant species.

For tamarisk work in wilderness areas, the wilderness minimum tool process was conducted and approved by the Wilderness Committee. Seasonal crews were enlisted for five weeks in the spring and three weeks in the fall to treat tamarisk and Russian olive applying Garlon 4/JLB oil to cut stumps. A thorough inventory of Coal Pits Wash was completed; treatments were focused on the Zion Canyon, Pine Creek, Scoggins Wash, and Coal Pits Wash.

Volunteer crews assisted staff park-wide with manual control of scotch thistle, bull thistle, whitetop, and knapweeds.

Program goals have been set to improve inventory and monitoring of exotics park-wide. The recent addition of a Trimble Geo Explorer III unit improved weed mapping and record keeping of acreage and percent cover. Current documentation includes mapping references, GPS documentation, metadata, photo documentation, percent cover, infestation description, associated native plants, revegetation needs, recommended follow-up, and herbicide documentation.

Revegetation

Seed Collection

Native seed dispersal was incorporated into revegetation efforts in addition to plants raised at the ZNP Native Plant Education and Restoration Center. Much of the seed dispersed in 2001 was older seed, some with reduced viability, so efforts were increased to rebuild the inventory with fresh seed. Currently seed is tediously hand cleaned by volunteers; more efficient methods and tools were researched for future implementation. Natural Resource Conservation Service agency contracts were also investigated for the purpose of increasing several species of indigenous seed for future large projects.

¹ The Alien Plant Ranking System developed by Hiebert and Stubbenbdieck is used to rank priority species in Zion National Park.

Zion National Park Native Plant Education and Restoration Center

Approximately 11,000 plants were produced in 2001. This is down from the previous year due to a shift in objectives--from high quantities of plants to high quality plants grown for a specific project. This new objective will allow staff and volunteers to concentrate on species that may take longer to propagate, but that are ultimately more appropriate for the intended restoration site. It will also reduce the number of plants 'held over' through the winter, which often results in losses.

Semi-annual "Native Plant Give-aways" were initiated. Park residents were encouraged to visit the nursery, consult with vegetation staff, and plant native vegetation in their yards.

Construction of the head house and future vegetation operations center progressed, but was not completed. Operations continued from the resource management office.

Several groups utilized the Native Plant Education and Restoration Center in 2001. The center hosted:

- a youth group from Utah Museum of Natural History in Salt Lake City.
- several high school groups and science clubs including one from Henderson, Nevada.
- several scout troops.
- an Arid Wilderness Site Restoration course sponsored by the Arthur Carhart training center.
- a plant propagation workshop sponsored by the Utah Native Plant Society.

The center also worked with the Utah Native Plant Society in the formation of several heritage gardens in the area.

Restoration Projects

Watchman Campground A & B loops were mowed and weeded numerous times throughout the summer. Previous disturbance coupled with neglect left both loops with an extensive Russian thistle infestation that encroached into nearly every site. Russian thistle is not only unsightly and prickly making the campground unpleasant for paying visitors, it is also a fire hazard, and many hours of labor were expended on fuel reduction. By removing the plant before it could flower, the seed bank, and consequently next year's workload, has been greatly reduced.

Shuttle stops were regularly weeded in preparation for fall 2001 planting. Some planting at the Court of the Patriarchs and the Temple of Sinawava were done in the spring, but due to the regular water needs or spring plantings, the bulk of planting is designated for fall.

The vegetation staff worked with Amfac to plant 333 native plants at the new Recreation Hall. These plants were propagated and raised at the Native Plant Restoration and Education Center. Amfac employees volunteered to water plantings through the summer.

The south entrance islands were weeded and re-planted with native plants.

Restoration of social trails originating from the Pa'rus Trail and the Riverside Walk was accomplished in cooperation with the maintenance division. Plans are underway to work cooperatively on similar projects.

Visitor Center Grounds

Resource management continued to oversee grounds operations during the transition to a native landscape. The bulk of the work continues to be annual weed management, and the staff made significant headway in reducing seed set. Progress was made in other areas as well:

- The irrigation system was altered to accommodate trees, while reducing water to grass and shrub areas.
- Rocks were placed near sprinkler heads in parking lots to deter drivers from driving on them, or, in some cases, sprinkler heads were relocated away from foot and vehicular traffic.
- Wooden stakes, strung with rope to deter traffic from new plantings and requiring daily maintenance, were replaced with sturdier and more attractive metal stakes.
- Bare areas, where initial plantings did not survive, were re-planted or re-seeded.
- Surrounding areas, including the former overflow parking areas, were weeded on a regular basis; consequently, the seed source of many of the more troublesome annual weeds has been reduced, and this should lessen the workload for next year's crew.
- A visitor center grounds SOP was completed.

Because the exotic vs. native battle is not yet under control, resource management will continue to oversee the visitor center grounds for one additional year before the maintenance division takes over.

Physical Resources Management

Water Rights

The fifth Judicial District Court of Utah granted an interlocutory decree on November 29, 2001 adopting the provisions of the Zion National Park Water Rights Settlement Agreement. This decree grants legal recognition of federal reserved water rights for the protection of surface and ground water dependent resources in the park. It is the culmination of a 14-year effort to quantify and protect park water rights through a considerable amount of research into the hydrology of the Virgin River basin, water-related resources and existing water rights, leading to negotiation of an agreement signed

in 1996. The agreement is significant in that it recognizes a federal reserved water right to all waters in Zion National Park dating to the establishment of the park, provides for water users upstream of the park to continue existing uses, and adds a limited amount of new use where the impacts to park waters will be practically immeasurable.

Numerous legal notices for water rights filings were reviewed for the Virgin River and Kanab Creek watersheds around Zion and PISP, and uppermost part of the Sevier River, Parowan Valley, and Coal Creek watersheds near CEBR. Of these, 22 warranted further investigation. There were no new water rights protests this year. The Utah State Engineer held a hearing on a protest filed by the park and BLM in 2000 and responded formally to questions posed by the park about interpretation of the Zion National Park Water Rights Settlement Agreement.

Bacterial Water Quality

A 2-year water quality investigation, with an emphasis on bacterial quality in waters most used by visitors, was completed in 2001. Over two summers 375 samples were collected from 19 locations. A large majority of the samples were from the North Fork of the Virgin River. Twenty percent of the water samples from the North Fork exceeded the state standard of 200 colony forming units/100ml (cfu/100ml) for water-based recreation. This occurred most when the water was turbid from storm runoff (several very turbid samples exceeded 10,000 cfu/100ml). An effort is currently underway to determine whether the source of the fecal contamination was from humans, livestock or wildlife using DNA typing of the bacterial cultures. Smaller tributaries generally had lower bacterial concentrations, but also had a high degree of variability.

Stream Flow Summary

This was the third consecutive year of below normal precipitation, which was reflected in generally low stream flow and a lack of significant floods. Total precipitation for the Zion National Park station for the 2001 water year (October 2000 to September 2001) was 13.81 inches, or about 10 % below the average of 15.42 inches. The year began with above average precipitation in October 2000 then carried through the winter season with typical precipitation patterns, but below average amounts. Spring runoff was very low with a peak discharge of about only 400 cubic feet per second (cfs) in early May. Flows dropped below 120 cfs by May 25. With one exception, the summer monsoon was less active than usual. Only 3-4 small floods occurred during the monsoon with a maximum discharge of 200 cfs or less. The notable exception was a very local, early-season storm that produced a brief, heavy runoff from the expansive slick rock above the Canyon Overlook Trail on May 13, 2001. When two boys tried to cross the cascading water, both were washed down the steep slope; one was able to grasp a shrub and save himself, the other was carried to his death in the Pine Creek Narrows.

Total runoff for the North and East Forks of the Virgin River was 70% and 60% respectively when compared to the long-term average. Base flow in the summer of 2001 was near 30 cfs on the North Fork, which compares to typical summer flows of 55 to 60 cfs, and record low flows of about 25 cfs.

Virgin River Restoration

A study exploring the geomorphic history of the Virgin River and alternatives for restoring a channelized reach of the river in the vicinity of Zion Lodge was completed. This 2-mile portion of the river was channelized in the 1920s and 1930s. The levees and their stone and wire armoring have deteriorated to the point that they must be either reconstructed or removed. The river is no longer able to flow out onto its floodplain, or to have the channel migrate laterally, to the great detriment of the riparian vegetation, particularly cottonwoods. It appears to be beneficial and geomorphically sound to permit the river channel to have a more natural form and function. This should be possible while protecting the historic lodge and Zion Canyon Scenic Drive. Additional studies of potential impacts to native fish, aquatic invertebrates, and cultural landscape studies to determine the historical significance of the engineered landscape of Zion Canyon are planned before conducting NEPA compliance on the project.

Geology

Rock Fall

On October 18, 2001 at approximately 5:35 a.m., a large rock fall from the Shinarump Formation on the Rockville Bench destroyed the home of park employee Jack Burns in the town of Rockville, just south of the park. Fortunately Jack was not hurt, though he narrowly escaped being crushed by a 230-ton boulder that came to rest in his bedroom, within feet from where he was sleeping. Park employees assisted Jack in recovering his belongings and moving into temporary housing in the park. He was further assisted by the local communities (Rockville and Springdale) through benefit fundraising efforts.

Geologic Mapping

Geologic mapping by the Utah Geologic Survey of the 12 USGS quadrangles that include all of Zion National Park and Cedar Breaks National Monument continued in 2001. Field mapping has been completed for 5 of the quadrangles, and draft maps have been delivered for 3 of those. Completion of the maps has been slowed by difficulties in digitizing them. The mapping has included dating of all of the numerous small lava flows in the Kolob Terrace portion of the park. Other notable finds have included the discovery of huge boulders from the Pine Valley laccolith near Kolob Reservoir (a distance of 14 miles from the source) and of interdunal pond deposits in the lower Navajo Sandstone.

Geology Guide

The Utah Geological Association published the *Geology of Utah's Parks and Monuments*, covering all state and National Park Service units in Utah. The writings are suitable for the interested public, school groups and professional geologists.

Air Quality

Visibility and particulates were monitored using an IMPROVE sampler at the Kolob Canyons administrative area. This is part of a state and national monitoring network, and provides the only site in the Great Basin air shed. Monitoring at Bryce Canyon National Park represents eastern portions of Zion and higher elevations. The park monitored for ozone with passive samplers at three sites: Kolob overlook, headquarters, and east entrance. Results will be collected and analyzed by the NPS Air Resources Division.

Cultural Resources Management

Native American Graves Protection and Repatriation Act (NAGPRA)

The park continued its efforts to comply with the requirements of the NAGPRA. Park staff and tribal representatives from the Hopi Tribe and the Paiute Indian Tribe of Utah met with the NAGPRA Review Committee in May to discuss cultural affiliation of the human remains housed in the park. It was the position of the park and the tribes that the human remains could not be affiliated to a modern day tribe due to a lack of archeological context and provenience. The review committee concurred with the proposed determination and commended the park and tribes for their diligent and cooperative efforts. Work will continue in 2002 to select a burial location, suitable to the tribes, for reburial of the remains.

Birch Creek Historic District

A task agreement, *Complete Architectural Documentation for Four Buildings in Birch Creek Historic District*, was developed between the park and private consultant Alyssa Kirkland. Ms. Kirkland is a graduate student with the University of Utah in the architecture program. A matching fund for this work was received from the National Trust for Historic Preservation in the amount of \$2,000. The match came from park ONPS. Work began on this agreement in August with final deliverables due in April of 2002.

In accordance with the agreement, Ms. Kirkland will draft exterior architectural drawings for all four buildings in Birch Creek. Interior renderings will be done for interiors where repair is needed. Specifications for repair and/or replacement of historic materials will be

noted as appropriate. These drawings will guide rehabilitation efforts during Phase II of the project. The Canyon Trail Rides and AMFAC concessions currently use the buildings in Birch Creek.

Watchman Campground Archeological Site (42Ws126)

Archeological investigations in 2001 were conducted and a second task agreement, *Preparation of Archeological Site (42Ws126) for Public Interpretation Phase II – Final Archeological Report*, was drafted and approved. The task agreement is between the NPS and the Desert Research Institute in Reno, Nevada under cooperative agreement, CA-1590-9-0001. The report will provide a scientific interpretation on the findings of the archeological excavation. The excavation work and report write-up is funded through the Fee Demonstration Program for a total of \$108,000.

Archeological Inventories for Prescribed Fire/Fuels Management

Intensive archeological inventory was completed on approximately 2,500 acres, supported by funding from the Fire Management Program (FirePro). These field investigations focused on areas within the park that have been identified for hazardous fuels reduction through management-ignited fires and mechanical techniques. A total of eleven new archeological sites were documented and evaluated for National Register eligibility during the field investigations. Additionally, six sites were revisited; of these two received documentation updates. Condition assessment baseline data or updated information was collected during the site visits, which has been incorporated into the NPS service-wide ASMIS database. Geo-spatial data were compiled for each site and entered into the GIS cultural data layers.

The following archeological report was submitted to the Utah State Historic Preservation Officer for comment and review in accordance with Section 110 and 106 consultation requirements under the National Historic Preservation Act:

Bonnifield, Juanita T. and Matthew J. Betenson

2001 *The Archeological Inventory of the Mystery Burn Unit in Zion National Park, Utah.*

Utah SHPO Report No. U-01-NA-0709n. On file, Zion National Park.

Archeological Site Monitoring

Cultural staff worked with backcountry rangers to orient them to the park's archeological site monitoring program. The purpose of the orientation was to provide site data so backcountry rangers can monitor site impacts and conditions while they are on duty. As part of the orientation, site data was compiled (site forms, site maps, site location

information) along with monitoring forms for each of areas patrolled. Five sites were added to the list of sites monitored throughout the year.

The park continues to utilize volunteers to collect monitoring data from selected archeological sites throughout the park. While the park continues to seek special project funding to support monitoring efforts, site monitoring projects do not compete well. Unfortunately, a summary of 2001 monitoring data is not available to include in this report. No major archeological site vandalism cases were reported this year. A case incident report was filed on an incident in Petroglyph Canyon. Graffiti was reported and subsequently removed by cultural personnel.

National Environmental Protection Act (NEPA)

The park's GMP was completed in FY01, though the Record of Decision was not published in the Federal Register until November. The copies of the final GMP were mailed to the public following the ROD publication. Significant effort was involved in finalizing the plan, incorporating public comments from the draft GMP/EIS and responding to these in the final EIS. DSC drafted the Notice of Intent and Record of Decision, and RMR staff provided significant editing to meet park expectations for these documents prior to publication. The final GMP text, format, photos and other content were edited and returned to DSC.

The National Fire Plan resulted in extraordinary funding for fuels management on federal lands, including Zion and Cedar Breaks. Regional director and staff decided that fuel management projects were outside the scope of existing fire management plans, resulting in a significant compliance workload for new EAs at Zion and CEBR. These were initiated via contract, but the park was responsible for public scoping, processing public comments, reviewing contractor's drafts, providing technical information, etc. This was a completely unanticipated workload, which was exacerbated by depleted staff in RM&R and fire management. A draft FONSI is currently under park review.

The compliance and planning was completed for the Shunes Creek water diversion, which involved two environmental assessments and a fair amount of controversy over a two-year period. The regional director signed the Finding of No Significant Impact. Subsequently, the water right holder was convinced (by external organizations and media attention) to relocate the water right's legal point of diversion and the diversion structure outside of the park, which will allow the former point of diversion inside the park to be restored and the land to become part of the Zion recommended wilderness. Our staff hydrologist did an excellent job, shepherding this issue through myriad problems and controversies to a highly beneficial conclusion.

Work continued on the Utah Power/PacifiCorp power line reconstruction project's environmental compliance. Staff reviewed a number of draft documents and analyses prepared by PacifiCorp's contractor. Staff spent a significant amount of time in the field with PacifiCorp staff to identify potential alternative alignments and discuss engineering

and environmental aspects of each. Division chief organized meetings with the proponents, park staff, Springdale and Rockville city councils/managers, BLM, UDOT, and others to coordinate planning and compliance. The initial public scoping for the project has been completed through direct mailings and an open house at the Springdale Town Hall.

The park provided assistance to Cedar Breaks National Monument in drafting an environmental assessment for construction of a pedestrian trail between the campground and Visitor Center. A FONSI was approved and signed by the Intermountain Regional Director for this project. The work was completed using day-labor assistance from CEBR and Zion maintenance staff.

As part of the park's administrative record, Environmental Screening Forms and Categorical Exclusion Forms were completed for the following:

- CEC-01-01 ROW for PacifiCorp 34.5kv Power Transmission
- CEC-01-02 Sand Bench Corral
- CEC-01-03 SR1 Repave – CEBR
- CEC-01-04 Inventory Study Plan for Vascular Plants and Vertebrates
- CEC-01-05 Eradicate Tamarisk
- CEC-01-06 Trail Section Reroute – Middle Fork Taylor Creek

National Historic Preservation Act Compliance (Section 110/106)

Assessment of Effect Forms (AEF)

The following is a list of Assessment of Effect Forms prepared that address potential impacts, determinations of effect, and mitigation to cultural resources. The park solicited review and comment from the Utah State Historic Preservation Officer and received approval for the following:

- | Number: | Description: |
|--------------|---|
| 01-001-AEF | Construct Canyon Trail Rides Wrangler Shed |
| 01-002-AEF | Convert Mission 66 Visitor Center to Human History Museum |
| 01-003-ZION | Birch Creek Rehabilitation (ongoing) |
| 01-004-ZION | Construct Emergency Services Building (ongoing) |
| 01-005-AEF | Mystery Prescribed Fire |
| 01-001-CEBR | Route 10 Maintenance and Repair |
| 01-002-CEBR | CEBR Visitor Trail- Pedestrian Trail Construction |
| 01-003 -CEBR | CEBR Visitor Center Porch Rehab |

Geographic Information System (GIS) Program

GIS specialist position was vacant for most of the fiscal year. A GIS technician filled in during the absence of the permanent program manager. Following is a list of GIS accomplishments:

- Phase II Metadata development for park's GIS database
- Updated GIS database for 25 years of peregrine falcon eyrie observation for breeding pair occupation and fledgling rate success
- Cultural Resource Database GIS updated
- GPS training and support in data dictionary development for RMR technicians and biologists
- GIS support to I&M Vegetation map project, including quality control review
- Project maps for prescribed and spontaneous fires
- Hard copy map production for fire program, cultural resource surveys, and wildlife GIS databases
- Development of Vegetation Program's Exotic Plants Location/Eradication GIS Database
- General GIS and GPS database maintenance
- Respond to outside NPS data requests
- Hardware/software upgrades, troubleshooting and maintenance

External Issues and Programs

The division chief continued as the NPS representative on the administration committee of the interagency Virgin River Resource Management and Recovery Program. He attended monthly meetings in St. George and Salt Lake City. Tasks involved production of the interagency recovery program plan, environmental assessment, contract RFP's, review of land and water rights purchase documents, etc. The park hydrologist serves on the program's technical committee with specialists from partner agencies. As such, he is involved in contact administration and project planning, site evaluations, permit reviews, restoration projects and a number of other activities. Some are within the park, others are external, but bear on our management of park resources.

Issues regarding the St. George Airport became intense during the course of the year, involving review and comment on the FAA's draft and revised environmental assessments, negotiations over sound issues with FAA and City of St. George, providing information to support WASO and regional level discussions with FAA, and a great deal of correspondence at the park, region, and WASO levels. The FAA avoided or discounted most NPS concerns in their Final EA, which resulted in a Grand Canyon Trust lawsuit against the FAA, which is still pending.

The division chief initiated contact with the City of Mesquite, Nevada to gain access to the Mesquite Airport planning process. The city has invited Zion to participate.

The division chief served on the Colorado Plateau Natural Resource Advisory Committee, with primary responsibility to assist in the development of the CESU work plan and allocation of its research funds, coordination of cluster-wide natural resource issues such as pinyon-juniper management, Native American harvest of wildlife, harvest of peregrines under falconry permits, and coordination between parks and networks for the service-wide Inventory and Monitoring Program. The I&M program start-up and development for 34 parks has been a huge undertaking and a significant workload. However, FY01 saw the start of field work in parks throughout the cluster.

The division chief worked with the Southwest Science Foundation in development of their plans to construct a planetarium and science center near Virgin, Utah. He provided input on laboratory and residential facility needs, opportunities to coordinate with park programs, and night sky protection discussions with Virgin Town Planning Commission.

The division chief worked with Grand Canyon Trust, University of Utah, and Brigham Young University to conduct a "Zion Park Bio-Region Conference," inviting natural resource experts from the region to discuss the internal and external pressures affecting Zion park resources and to develop concepts for regional land management to foster long-term protection of the park.