

ZION NATIONAL PARK

The SENTINEL

INFORMATION & ACTIVITIES

SPRING - SUMMER 1990

ZION NEEDS YOU!

Picture this: A ranger-led hike in Zion National Park in the year 2090.

"Welcome to Zion and the Gateway To The Narrows Trail. Before we begin our hike today, let's make sure we have everything we need. Does everyone have their special eyewear and clothing for protection from the sun's ultra-violet rays? And the air seems a little extra thick today so let's put on our gas masks, just in case."

OR IT COULD BE LIKE THIS:

"Welcome to Zion and the Gateway To The Narrows Trail. Before we begin our hike today take a deep breath. That's Class One air you're breathing, some of the cleanest in the country, and believe it or not, it's getting cleaner every year."

Which would you prefer? We are now at a point where either scenario has a 50-50 chance of happening. "Well, what is the Park Service doing about it?" The answer lies not just with the Park Service but with the people of the world. ("Uh-oh, they're not talking about...") Yes! Global warming, acid rain, ozone depletion, hazardous waste, full landfills, air pollution, groundwater pollution. ("STOP! We came to Zion to get away from all of that.")

Ah, yes. Pristine Zion. An island in the sky. How could such a remote place possibly have to worry about all those environmental issues? Let's see how these issues affect not just your home, but your Zion, too.

GLOBAL WARMING:

Normally the greenhouse effect keeps our planet warm. Greenhouse gases, carbon dioxide (CO₂) and methane, are found naturally in the atmosphere and act as a heat trap, like a car on a sunny day. Sunlight reaches the earth's surface, and the gases allow just the right amount of heat to radi-

ate back into space. Problems arise when there is an increase in the amount of greenhouse gases and other pollutants. Where do these extra gases and pollutants come from? They come from burning fossil fuels and from heating with coal, oil, natural gas and wood. The destruction of forests (trees release CO₂ when cut down and burned), and wide spread use of chemicals, such as chlorofluorocarbons (CFCs), also add to the problem. More gases and pollutants mean LESS heat can escape, causing an increase in temperatures around the world. An increase of 3-8 degrees average is possible by 2090 and could cause extensive heat waves, droughts and coastal flooding as the sea level rises.

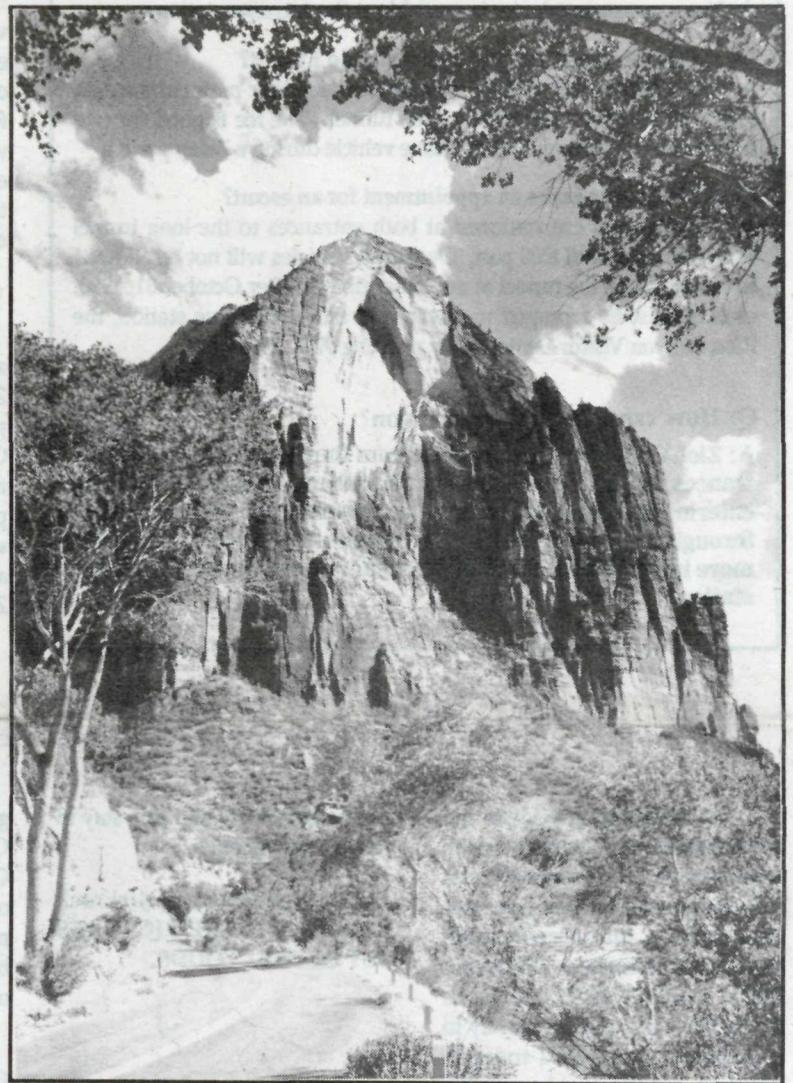
So what would this do to Zion? Plants adapted to certain conditions would die from higher temperatures and lack of moisture. Animals adapted to specific areas would die or be forced to move into areas with different food or maybe no food at all. The already hot summers would be hotter!

OZONE DEPLETION:

Ozone occurring naturally, in a part of the atmosphere called the stratosphere, is GOOD. It forms a layer that protects us from the sun's ultra-violet rays.

Ozone found at ground level, a by-product of burning fossil fuels, is BAD. Let's deal with good ozone first. Without this ozone layer we would be boiled lobsters! The problem is that certain chemicals are drifting up to the ozone layer and breaking it down. Chlorofluorocarbons (CFCs) are the main culprit. The intensity of the sun's ultraviolet radiation shatters the CFCs, releasing the chemical element chlorine. One chlorine atom can destroy 100,000 ozone molecules.

Continued on pg 3



Red Arch Mountain - just one of the massive Navajo Sandstone formations along the Zion Canyon Scenic Drive.

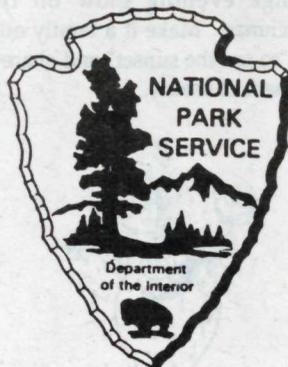
MESSAGE FROM THE SUPERINTENDENT

Welcome to Zion National Park, a spectacular place of beauty and wonder. To limit the impact of over two million visitors a year, we need your help. Please take care of your national park while you are here. Pick up litter and watch wildlife from a distance without feeding them. Tour the park safely and with sensitivity for other visitors and for the plants and animals whose home this is.

We hope that Zion's beauty and fragility will inspire you to care for the whole environment of the planet we share with every living thing.

Do you have any concerns or ideas for improving your national park? Let us know what you enjoyed about Zion, too. Please drop a note to: Superintendent, Zion National Park, Springdale, Utah 84767.

Harold L. Grafe, Superintendent



recycled paper

FOR A SAFE & PLEASANT VISIT

TAKE A MOMENT TO INFORM YOURSELF ABOUT:

- Safe hiking policies
- Exposure to sun and cold
- Precipitous trails
- River safety/flash floods
- Loose rock
- Park regulations
- Weather conditions
- Wildlife

Detailed information is available at visitor centers.

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EMERGENCY?

8:00 A.M. TO 5:00 P.M. - (801) 772-3256
AFTER HOURS - (801) 772-3322 OR (800) 624-9447

RESTRICTIONS ON LARGE VEHICLES IN ZION

ESCORTS

Q: Which vehicles require an escort to pass through the Zion-Mt. Carmel Tunnel?

A: Any vehicle wider than 7 feet, 10 inches OR taller than 11 feet, 4 inches OR longer than 40 feet (50 feet including a trailer) requires a tunnel escort.

Q: Is there somewhere I can measure my vehicle?

A: Yes, a measuring device is available at the entrance stations.

Q: Is there an escort fee, and where should I pay it?

A: Yes, a \$10 fee per vehicle must be paid at either park entrance on Highway 9 before proceeding to the tunnel. The fee is good for two trips through the tunnel for the same vehicle during a 7 day period.

Q: Will I have to make an appointment for an escort?

A: No, Rangers are stationed at both entrances to the long tunnel from 8:00 a.m. until 8:00 p.m. Oversized vehicles will not be allowed to pass through the tunnel at any other time. (After October 31, 1990, escorts must be arranged in advance at either entrance station, the Zion Canyon Visitor Center, or by phoning 772-3256).

Q: How can I reach Zion Canyon?

A: Zion Canyon can be reached from the east or south Park entrances, as the map on the last page shows. Please note: When entering or exiting the park's east entrance you will be passing through the tunnel, which may require an escort. If you need more information, check at the visitor center or park entrance station.

TUNNEL ESCORTS

The Zion-Mt. Carmel Tunnel on Route 9 was completed in 1930. Today many buses and R.V.s are too large to stay in their lane while passing through the tunnel.

While still considering alternative long-term solutions, Zion has established a year-round escort service. The tunnel is open throughout the year, but oversized vehicles must have an escort to ensure their safety and the safety of other motorists. We apologize for the delays that many visitors will encounter during these escorts. The fee charged covers the actual cost, which is not funded in Zion's appropriated budget.

PARKING RESTRICTIONS

In 1989 growing visitation and numbers of large vehicles led Zion to address the congestion in parking areas along the Zion Canyon Scenic Drive. There are now parking restrictions in two places. To give visitors in large vehicles access to these restricted areas, there is shuttle service from Zion Lodge (see parking box).

PARKING

Q: May I drive my vehicle the whole length of the Zion Canyon Scenic Drive?

A: Yes.

Q: Are there places I cannot drive or park my vehicle?

A: Yes. Vehicles over 21 feet long are prohibited from entering or parking in the Weeping Rock Parking Area. This is due to the small turn-around space. Also, these vehicles may not park at the Temple of Sinawava (end of the Zion Canyon Scenic Drive) between 9:00 a.m. and 5:00 p.m.

Q: Does this mean I can't see the Temple of Sinawava?

A: No. You may drop off your passengers at the designated loading/unloading area at the Temple and drive back to the south end of the Lodge and park. Then ride the shuttle back to the Temple, or wait at the Lodge until ready to pick up your passengers.

Another option is to initially park in the Lodge's designated area for oversize vehicles. Then you and your passengers may ride the shuttle through the canyon.

A third option is to visit the Temple of Sinawava before 9:00 a.m. or after 5:00 p.m. You are permitted to park there during those hours.

Q: Where do I get tickets for the canyon shuttle?

A: You may purchase them at the Zion Lodge, adjacent to the oversize vehicle parking and shuttle bus stop.

MAKING THE MOST OF YOUR TIME

The following tips, ideas and information will help you plan your time in Zion National Park. It is not unusual for first-time visitors to feel a bit overwhelmed; after all, Zion contains 229 square miles! It would be difficult to see it all! For many visitors the key to a successful visit is NOT trying to see it all, but thoroughly enjoying what they DO see.

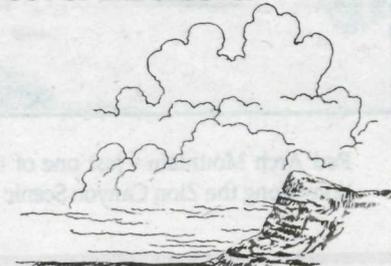
- Don't miss the **SCENIC DRIVE!** This 13 mile round trip drive up Zion Canyon to the Temple of Sinawava views some of Zion's most famous scenery.

- Is there any better way to experience Zion than to **TAKE A WALK OR HIKE?** See your park map for details on the length, difficulty, time required and location of each trail in Zion.

- Remember to stop by a park **VISITOR CENTER** before your hike to get current trail and weather conditions. Detailed information regarding trails is also available on your park map. Guidebooks, information, NPS activity schedules, etc., are available at the two park visitor centers. NPS activity schedules are also posted on all bulletin boards.

Have a wonderful and safe stay in YOUR national park.

- Lie down on a slickrock lounge and **MAKE PICTURES OUT OF THE CLOUDS.**



- **BICYCLE** around the park. Take pride in conserving energy and protecting the clean air in Zion. Safety tips are available for cyclists near the South Entrance Station and at the Zion Canyon Visitor Center. For suggestions on where to ride, see page 7.

- **OBSERVE THE MULE DEER** browsing throughout the canyon in early morning and twilight hours. Always pull safely off the main road in designated pull-outs before stopping to watch or photograph these Zion residents. Don't get too close to them, and **NEVER FEED ANY WILDLIFE.**

- **BECOME A JUNIOR RANGER!** The Junior Ranger Pro-

gram is held at the Zion Nature Center, Tuesday through Saturday. Children six through twelve years old are welcome at either the morning or afternoon session, or both! See more details on page 11, or inquire at the visitor center.

- **KEEP A RANGER FROM GETTING LONELY!** Join a National Park Service ranger-led activity!

- **WATCH THE SUNRISE** illuminate the West Temple with a veil of pink light, or catch the last orange evening glow on the Watchman. Make it a family outing "to see the sunset" and share a moment of beauty.



- **LOOK DEEPLY** into a cactus flower and watch a pollinator at work! Opuntia (prickly pear) and other cacti of Zion have spines. Avoid close encounters!

- If it's hot, select a safe spot to **COOL OFF IN THE VIRGIN RIVER.**

- **ADOPT A TRAIL.** Bring along a bag and collect litter as you walk.

- **ASK A RANGER A QUESTION.** Ask him or her another one.

- **COUNT THE STARS** and sleep under them. Take a ride on the Milky Way!

- Full moon or close to it? **BECOME A NIGHT OWL.** The moonlight brightly illuminates the canyon walls, and deep shadows create excellent photo opportunities. Grab your camera, a tripod and a cable release, and head for an open area with a clear view of the west side of the canyon. Or, take pictures in your **m e m o r y.** Take a night hike!



- **LEARN A TREE'S NAME.**

- **LEARN SOMETHING NEW ABOUT ZION!** Purchase a bird, flower, mammal or geology guide at the visitor center to help identify new things.

- **SLOW DOWN** and let Zion come to you. Pack a picnic, grab a good book and some sunscreen. Find a peaceful spot on a boulder or overlook, and soak up the sunshine, scenery and tranquility.

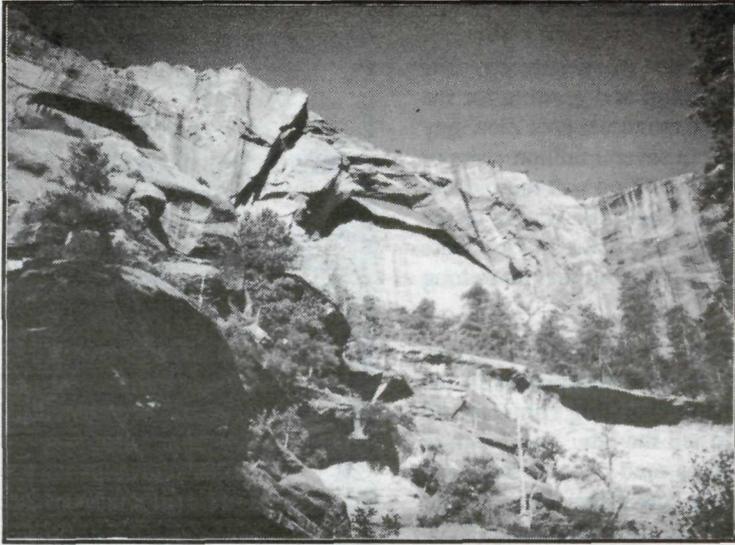
- **WALK FOR 50 MILLION YEARS!** Learn about the geology of Zion and life 200 million years ago as you walk up the Watchman Trail through time.

- Rainy weather? **GRAB A RAINCOAT AND A RAINBOW,** smell the sweet scent of wet sage and pine. Count new waterfalls cascading off the canyon walls. Join us in the visitor centers and enjoy our displays. Watch the rain while having lunch at Zion Lodge.

- **OBSERVE THE BIRD LIFE** along the Virgin River or listen for bird calls as you stroll up the many side canyon trails. Ask for a free bird list at any of the visitor centers.

- **MAKE A NEW FRIEND!** Share a smile.

BEYOND ZION CANYON



Kolob Canyons

Whether you're interested in a short scenic drive or a pleasant walk, visit the Kolob Canyons in the northwestern part of Zion National Park. These spectacular narrow canyons are composed of towering vertical cliffs of Navajo Sandstone, whose brightly colored, orange-red walls give the Kolob a striking singularity.

Kolob Canyon Visitor Center is located off Interstate 15 (Exit 40), 40 miles from the south entrance of Zion Canyon. A five mile drive climbs from the visitor center

along the western edge of the six "finger canyons" which cut into the high-country plateau called the Kolob Terrace. A picnic area is located at the end of the drive. A guidebook, keyed to the numbered stops along the drive, is available to introduce you to the area's ecology, history and geology.

Several trails offer a closer look at the Kolob's special beauty. The popular Middle Fork Trail winds back and forth across Taylor Creek for about 2.7 miles to the Double Arch Alcove. The cliffs tower 1500 feet above in these nar-

row confines. Forests of pine, fir and maple provide welcome relief from the hot summer sun.

The La Verkin Creek trail begins at Lee Pass and leads to the impressive Kolob Arch. Though some hikers do the 7.2 mile walk to the Kolob Arch in a day, it is perhaps better enjoyed as an overnight trip.

Check the park brochure and interpretive announcements for more details regarding the trails and programs offered. Turn on AM radio 1610 as you approach the area for current information.

NEARBY PARKS

Cedar Breaks National Monument

A gigantic multi-colored amphitheater is being slowly scooped from the western edge of the rolling green alpine meadows atop southern Utah's high country. Within the steep-walled ravines, rain and wind, snow and ice have eroded the limestone into many fantastic shapes and colors.

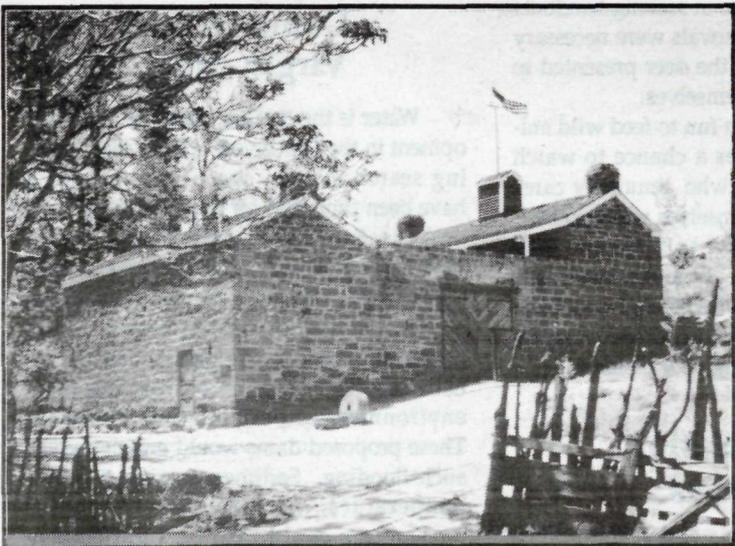
The name "Cedar Breaks" is derived from the early settlers' use of the term "breaks" for badlands and their mistaken use of "cedar" for the junipers growing near the base of the cliffs.

With its 10,350 ft. (3,155 meter) elevation, Cedar Breaks is cooler than Zion. The travel season extends from mid-May to late October, depending on the weather. At other times, check road conditions before driving to the monument. (Hint: It's a cross-country ski paradise in Winter!) The cool temperatures and alpine forests are a welcome respite from the desert heat.

The famous Cedar Breaks wildflower display begins as soon as the snow melts, and reaches its peak during July and early August. The monument contains

majestic stands of pine, fir, spruce and quaking aspen, but the bristlecone pines are of special interest. Among the oldest living things on Earth, small stands of these twisted ancient beings still tenaciously grow on the relatively poor limestone soil along the rim of the amphitheater. Find out more about these elderly trees at the Cedar Breaks Visitor Center.

The visitor center has exhibits about plants and animals and the formation of the amphitheater. A park ranger is on duty daily to answer your questions and suggest places to see and things to do.



Pipe Spring National Monument

Located off highway 389 in northern Arizona and approximately 65 miles southwest of Zion, Pipe Spring offers visitors an interesting and educational journey back to the "Old West." This small, little-known gem of the National Park System is rich with Native American, early explorer, and Mormon pioneer history and lore. A much-valued natural spring on the edge of the dry, but fertile, Kaibab Plateau, its story of human occupation reaches back as

far as 500 AD when the Anasazi (a Navajo term for "the ancient ones") created a small settlement. Much later, the Southern Paiutes called the area home and survived well in spite of the harsh environment. In 1776, the first people of European descent came to northern Arizona. Two Catholic priests, Fathers Dominguez and Escalante, tried to reach California from New Mexico. Although they never reached California, Escalante's writings opened the way for many to follow, including beaver trappers, explorers, Mexican slave hunters and, in 1863, the first Mormon pioneers.

Today, Pipe Spring staff dress in Old West style and participate in many living history displays. A visitor might be treated to a hand-dipped candle demonstration, a warm pioneer-recipe cookie, a fine exhibit of quilts, Southern Paiute basketry, beading or other handiwork, or pick up a few tips on the fine arts of blacksmithing and saddlemaking.

Off the "beaten track" and downright peaceful, Pipe Spring National Monument is a fun and fascinating way to learn more about the real history of the West.

ZION... *Continued from pg 1*
So what does this mean for Zion? With more ultra-violet radiation, which promotes skin cancers and cataracts and depresses the human immune system, it will be difficult to enjoy much of anything. There won't be anymore FUN IN THE SUN at Zion.

Man-made ozone contributes to the greenhouse effect by helping to trap more heat. As a component of smog, ozone can cause lung damage and irritate the eyes.

But there isn't any smog in Zion... or is there? Air pollution is not confined to big cities and industrial areas. Winds carry smoke, dust and smog for MANY miles. The automobile is one of the primary sources of air pollution. In 1989 Zion saw 2.2 million visitors and LOTS of vehicles. The extraordinary scenery of Zion brings people here. The last thing visitors want to see is haze. Humans are not the only ones affected. Animals will suffer from polluted air,

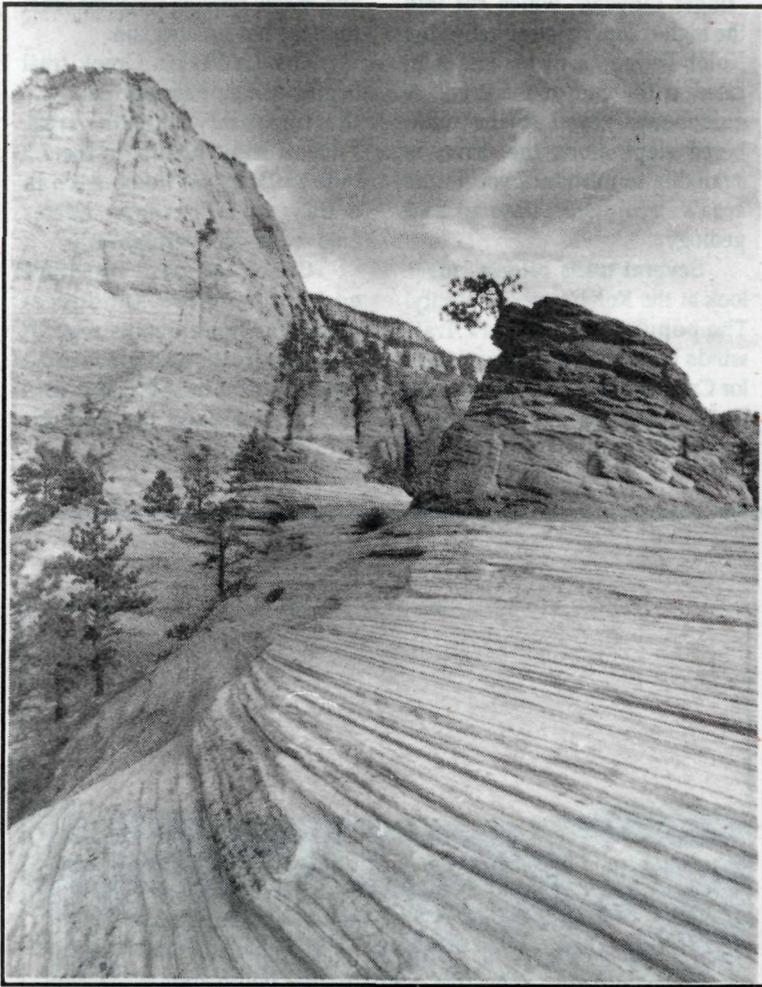
and ozone is known to damage vegetation. Zion is not immune!

We often wonder how all this happened. Our economy and way of life have urged us to consume more and more, faster and faster. But what price are we willing to pay for extra time and conveniences? Where will we spend our leisure time when we can't breathe the air without a filter, can't go outside without protective clothing and can't see the mountains and canyons because of haze.

Sounds extreme? The bad news is that it is happening NOW. The good news is that with some work it can be stopped. But the work must begin NOW. ZION NEEDS YOU!!!! - to help fight these problems. They are not problems that happen only in cities, or only at home, or only somewhere else. They occur EVERYWHERE, including remote and pristine places such as Zion. So what can you do? First, say out loud, "These problems are

real, they are everywhere and they are happening now." THINK GLOBALLY! Second, GET INVOLVED, do something to help. Recycle, drive less, waste less water, turn off lights, etc. ACT LOCALLY! (For specific suggestions of what you can do and why, turn to page 9.) The fight must begin at home. But what about Zion? Well, think about home for a moment and what we're fighting for. Welcome to Zion and welcome home!

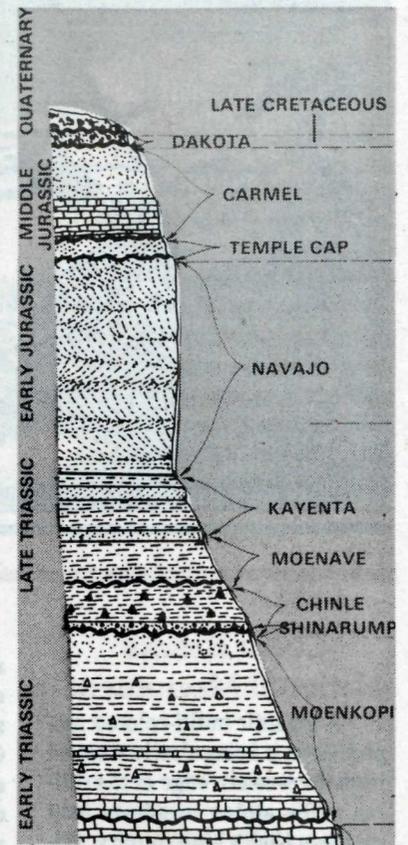
GETTING A GRIP ON GEOLOGY



Is that rock going to fall on you? Yes! . . . eventually. The entire Colorado Plateau has been uplifting and eroding for the last 13 million years, and at this rate the monuments of Zion may completely erode away and disappear in several million years or so. So, yes, eventually all the rock walls of Zion will tumble and be carried downstream by the conveyor belt-like waters of the Virgin River. In fact, many of the layers we still see in Zion were once also found on top of the Grand Canyon, but they have long since eroded away.

Erosion is only the second part of the geological story of Zion. During the first part of the story, from approximately 280 million to 150 million years ago, many changing climates and conditions left sedimentary layers to tell the tale. Sedimentary rocks are formed from materials such as mud or sand that have been moved from a place of origin to a new place of deposition. Most of the sedimentary layers of Zion are either sandstone, shale or limestone. Zion's dominant geological feature, its spectacular Navajo sandstone, was once drifting desert sand dunes. Following the deposition of these deep sands, seas encroached over the land and Carmel Limestone was laid down. Cementing materials (the "glues" holding the individual sandgrains together) include calcium carbonate and iron oxide. Iron oxide also gives much of the red color to the layers.

Most of the national parks of the Southwest are related geologically. As you explore the parks, take a closer look at the many varieties of rocks. Learning about geology and the Earth's history is fun, and not as difficult as you might think. For example, use the accompanying geological chart to determine the different sedimentary layers that you can see from the Zion Canyon floor. For more information on this fascinating topic, visit the Zion Canyon Visitor Center and Museum or join a ranger-guided geology talk.



COMPOSITE
STRATIGRAPHIC
COLUMN OF
ZION NATIONAL PARK

NATURAL RESOURCE MANAGEMENT IN ZION

Resource management? But in a national park we leave the environment alone to manage itself, don't we? Well, yes and no. One goal of the National Park Service is to preserve the entire ecosystem in as natural a state as possible and to allow it to function and change as NATURE wills. If Zion were an island unto itself, unaffected by people and encroaching civilization, natural processes would be the best regulators of the environment. Unfortunately, that is no longer the case. With an annual visitation of over two million people and increasing pressures from outside the park, park managers must continuously monitor the health of the ecosystem and sometimes restore or help natural processes to maintain themselves.

Here are some current issues that challenge resource managers in Zion and ways you can help to preserve YOUR national park.

Visitors & Wild Life

See that adorable deer along the side of the road? Wouldn't it be fun to have your picture taken with it eating out of your hand? Do you realize that giving into this impulse is both a danger to yourself and a serious threat to the life of the very creature you so admire?

All wild living things are closely attuned to their environment, including their natural foods. Left alone, their instincts guide them to find, eat and store

the foods best able to keep them alive and healthy. Their health may be damaged by human foods. We may also accustom them to obtaining food from easy sources and rob them of their inclination to forage for themselves.



The park has developed a serious deer feeding problem in the past few years. A group of deer have become so used to human handouts that they stay near the Zion Canyon Scenic Drive waiting for food. Here they fall victim to vehicles. Deer/vehicle accidents not only maim and kill deer but can potentially cause serious harm to the vehicle passengers.

Wild animals are wild! Their behavior can be unpredictable and dangerous. Getting too close to a deer may be threatening to the animal, causing it to kick or to jab with its antlers. During the past year, it was necessary to tranquilize and remove five

deer from the Zion Lodge area which had become very aggressive in seeking handouts from visitors. The removals were necessary because of the hazard the deer presented to both the public and themselves.

While it may seem fun to feed wild animals, giving ourselves a chance to watch them closely, anyone who genuinely cares about the animals themselves will acknowledge that it is harmful to them and will resist the temptation. And remember, the wildness of Zion's wildlife is one of the things the park exists to protect. Respect wild animals by keeping your distance.

Revegetation Projects

Both campgrounds and several other areas in Zion Canyon are heavily affected by concentrated visitor use. The native vegetation is being destroyed by trampling and by people who cut switchbacks and take shortcuts from the main canyon road to the river. The park is trying to revegetate these areas in order to prevent human-caused erosion and to keep exotic (non-native) plants from invading the disturbed areas. You will see these rehabilitated sites at the Temple of Sinawava, Emerald Pools and other areas in the main canyon. Please help the re-establishment of these areas by staying on the trails and avoiding areas where replanting has taken place.

Proposed Dams on the Virgin River

Water is the limiting factor to all development in the Southwest. In the ever growing search for new water sources, dams have been proposed for both the North Fork and the East Fork of the Virgin River, upstream of the park's boundaries. These dams would seriously change the patterns of water flow that created several of the major canyons in the park. The park's native species have evolved over time in an environment of periodic flash-flooding. These proposed dams would greatly reduce such flooding. Sediment transport, water temperature, oxygen levels and other parameters could also be significantly altered with unknown effects on native species. It is possible that species associated with the river could be lost if the habitat is greatly modified.

People have come to value national parks as places to observe nature, to see wild plants, animals, and their interactions with each other and their environment. Such parks as Zion are increasingly valuable to scientists and to you and me, too. Resource management seeks to keep the parks places where nature rather than people and their artifacts dominate the scene. The benefit to us all is the inspiration which a visit to Zion can bring.

PRESERVING LIFE'S DIVERSITY IN THE PARKS

Zion National Park is home to tens of thousands of distinctive kinds of insects, amphibians, algae, mammals, bacteria, worms, fungi, reptiles, plants and other living things. That tremendous diversity is visible evidence that this is a protected area where many habitats have changed little, despite the presence of humans.

In the 19th century, Americans began establishing national parks in order to preserve undisturbed some of our nation's uniquely beautiful landscapes. At the time they had no idea they would also be protecting something that would one day be of vital importance to the very existence of life on the planet: biological diversity.

Biodiversity refers to the many different kinds of life that share our world. Every species is an integral part of the natural systems in which it lives. And when it is gone, an ecological void remains, setting the entire ecosystem askew. The web of life is interdependent and complicated. Depending on the role of the lost species the changes may be very subtle or devastating. Either way, the system is diminished. Loss of a single species can undermine an entire ecosystem.

The Earth, including Zion National Park, cannot afford to decrease its natural biological diversity. Yet, one estimate is that ONE MILLION SPECIES OF PLANTS AND ANIMALS WILL BECOME EXTINCT BY THE END OF THE CENTURY. Every hour,

two to three species become extinct. That's 48-72 species a day lost forever. Why is this such an important issue in the national parks, and why should we care?

Well, did you know that the oxygen in the last breath you took may have been produced in the



rain forests of South America? Did you know that those rainforests are rapidly disappearing?

Examples of utilitarian values of species can be seen in agriculture, medicine and industry. For example, while 80,000 possibly edible plants are known to exist, ONLY 20 DIFFERENT PLANTS PROVIDE 90% OF THE WORLD'S FOOD. Any major disease or pest affecting the four major crops could have devastating implications for the human population. Wild plants also provide genetic resources which may hybridize with our most important food plants to increase productivity and resistance to disease.

ABOUT HALF OF ALL PRESCRIPTION DRUGS IN THE U.S. CONTAIN A DRUG OF NATURAL ORIGIN.

Irreplaceable drugs and

chemicals with potentially broad applications to human problems may be disappearing with each extinction. Possible cures for many tragic diseases might be lost without our ever knowing they existed. To label a species insignificant when its importance

is simply unknown could be damaging to future generations. And many believe that other species have their own right to exist, even if they serve no utilitarian purpose for homo sapiens.

The creation of natural areas where healthy and diverse populations can be maintained may be a partial solution. As human development spreads across the land, habitats within the national parks become increasingly important as refuges for threatened and endangered species.

Zion National Park contains at least four life zones and has many diverse plant communities. The steep-walled canyons provide wide elevation, moisture and temperature differences which create a variety of climates and microclimates. Within this tremendous diversity of habitats, many plant

species are sensitive, threatened or endangered and need special care and protection.

But America's national parks are not separate islands or preserves; they are intimately connected pieces of the earth's extraordinary, but fragile biosphere. The National Park Service cannot hope to protect its areas without taking an active interest in the preservation of all the Earth's resources.

A key element in maintaining these resources is preserving the integrity of the habitats in which they live. You can help maintain Zion by leaving as little evidence of your visit as possible. In the broader picture, you can help by supporting the creation and enlightened management of protected areas, as well as responsible growth and development everywhere.

WOLF-RESTORATION



Are there wolves in Zion? Not anymore. But, they once were natural citizens of the Southwest, as well as the rest of the country. Habitat loss and programs to eradicate the wolf have driven it to the fringes of the country. Many people still fear wolves and hold to the historic perspective that they are bad.

We once feared living with the wolves; now we more greatly fear living without them. Despite their presence in our stories, tales and lives, wolves are nearly gone.

Both the National Park Service and the U.S. Fish and Wildlife Service are working to restore wolves in sites deemed appropriate throughout the U.S."

The Zion Natural History Association has award winning informative sales items that not only offer information on wolves but also contain delightful photographs and artwork. ZNHA's video, "The Wolf; A Howling in America's National Parks," received the prestigious Silver CINDY (Cinema in Industry) Award November 8, 1989 in Los Angeles, CA. The association's wolf poster "A Howling in America's National Parks" received "BEST IN SHOW" at the 1989 gathering of the Litho Craftsmen Club of Utah. These items and several books are for sale at the Zion Visitor Centers. We hope you will join us in this exciting and exceptional restoration effort by taking time to learn more about this fascinating, real animal - the wolf.

Zion Natural History Association



Did you know that the books, posters, and other items you buy at Zion Visitor Centers help support the park?

Zion National Park, as many national park areas, is assisted by a non-federal, non-profit "cooperating association." The Zion Natural History Association (ZNHA) publishes and sells interpretive and informational items in Zion's two visitor centers and at two nearby national monuments, Pipe Spring and Cedar Breaks.

Here are examples of the projects supported by ZNHA:

- This newspaper, The Sentinel, distributed free.
- Zion's widely praised Junior Ranger Program.
- Free informational hand-outs.
- Publication of books on Zion and other topics.
- Support for living history programs at Pipe Spring.

- Support for the expenses of Student Conservation Association volunteers at Zion, Pipe Spring and Cedar Breaks.

Total donations from ZNHA to date exceed one million dollars.

We invite you to become a member of ZNHA. Membership entitles you to a 20% discount on purchases in our bookstores and varying discounts at Cooperating Association outlets in national parks across the country. New members receive a colorful ZNHA patch. In-memory gifts, grants, and bequests are also appropriate. Donations may be tax deductible, depending on current IRS regulations.

CREDIT CARD ORDERS ONLY:

1-800-635-3959
(\$10.00 minimum)

Membership Application

I would like to join ZNHA.

Type of membership:

- _____ Annual - \$15
 _____ Family - \$25
 (Annually)
 _____ Lifetime - \$300
 (Minimum)

NAME _____

ADDRESS _____

CITY/STATE/ZIP _____

Make checks and money orders in U.S. currency to: Zion Natural History Association. Mail to:

ZNHA • Zion National Park
Springdale, Utah 84767

IMPORTANT INFORMATION

BACKPACKING

Free permits are required for all backcountry camping. Permits and hiking information are available at the Zion Canyon, Kolob Canyons and Cedar Breaks visitor centers.



BICYCLING

Bicycling is an excellent way to enjoy the magnificent scenery and crystal clear air in Zion. Bicycles are permitted only on established roads. RIDING ON TRAILS OR "CROSS-COUNTRY" IS PROHIBITED.



Use good cycling sense when riding in the park: wear a helmet and brightly colored clothing, obey traffic laws, carry water, and be aware that automobile drivers may be distracted by the scenery. Ride defensively!

For the safety of you and others, it is ESSENTIAL for bikes to be carried through the Zion-Mt. Carmel Tunnel. For information, talk to a ranger at an entrance station or visitor center. For suggestions on where to ride, see page 7.

CAMPING

The Watchman and South Campgrounds are available on a first-come, first-served basis. One is open year-round; both are usually open in summer. Some sites are set aside for the mobility-impaired. Group campsites are available by reservation to educational or youth groups. You may self-register at the campgrounds. The fee is \$6.00/night, or \$3.00 for holders of Golden Age/Golden Access cards.



FACILITIES INCLUDE:

- fire grates
- water
- picnic tables
- restrooms
- dump stations
- utility sink

Camping is limited to 14 days and is permitted only in designated sites or in the backcountry. (Permits are required for backcountry use.) There are no utility hook-ups or showers, but both are available in Springdale. Campground regulations are posted conspicuously. Please obey them!

The Lava Point Primitive Campground is usually open from May to October. Fire grates, tables and toilets are provided, but there is no water. NO fee is charged.

There is also a campground at Cedar Breaks National Monument.

CLIFFS

Be mindful of your footing at overlooks and along drop-offs, especially when taking photos or using binoculars. Keep an eye on children.



Watch for rockfalls and landslides. Although they rarely do damage, they do occur frequently.

DRIVING

Please observe posted speed limits. Slow down at dawn and dusk and watch carefully for animals on the roadways.



A national park is not a place for speed; enjoy the park's scenery safely.

- Wear safety belts.
- To avoid being a hazard to other vehicles, pull completely off the road when reading maps, observing wildlife or taking photographs.
- Treat bicycles as another car; wait for oncoming traffic to clear before passing. Show courtesy towards cyclists, pedestrians and joggers.
- Drive only on established roadways.
- Report all accidents to a ranger.
- Check with a ranger regarding tunnel escort procedures if your vehicle height exceeds 11'4" or width exceeds 7'10".
- Watch for rocks or natural debris in the roadway.

EMERGENCIES

If an emergency occurs within Zion National Park, call: (801) 772-3256 between 8:00 a.m. and 5:00 p.m. After hours, call: (801) 772-3322 or (800) 624-9447. The nearest hospitals are in St. George, Cedar City and Kanab. Springdale Medical Clinic is open during summer months.



FIRES

Fires are permitted only in campstoves or provided grills. Keep them small and controlled. Collect only dead and down wood. Fires are not permitted in the backcountry.



LOST & FOUND

- Lost items should be reported at the visitor centers.
- Found items should be turned in at the visitor centers. Items not claimed in 60 days may be claimed by finder.



PETS

Pets must be kept under physical control at all times. They are prohibited in public buildings, on trails and in the backcountry. Never leave your pet in a closed vehicle. Temperatures can soar to over 120°F (49°C) in minutes. Your pet can quickly die of heatstroke under these conditions.



PICNIC AREAS

The park's two picnic areas are the Grotto Picnic Area in Zion Canyon and a site at the end of Kolob Canyons Road. The Grotto has fire grates, picnic tables, water and restrooms. The more primitive Kolob site has tables and pit toilets.



SWIMMING & WADING

When it's hot, the cool waters of the Virgin River look tempting. If you are considering swimming, be alert to the potential dangers any river possesses: swift currents, cold water, hidden boulders, submerged logs or other traps, slippery rocks and the possibility of flash floods.



WILDLIFE

Plants, animals and all other natural features are protected and should not be disturbed. Please do not feed the wildlife and keep your distance when photographing them. Hunting or the use of firearms is prohibited.



WEATHER

Summer temperatures can reach 110°F (43°C). Guard against becoming overheated. You can lose water rapidly in this dry air, particularly when it's hot as well. Be sure to take plenty of water along on your hikes and remember to drink it, even when you don't feel thirsty. You will be more comfortable and safer, too.



This is flash flood country. Stay out of narrow canyons and washes when it is raining or threatening. Pay attention to the Narrow Canyon Danger Level posted daily at the visitor centers and the Gateway Trailhead.

A walk in the rain can be delightful, but rain can also make trails and roads slick. Be careful! Drive slowly and watch your step.

Be alert to the threat of lightning, especially when exploring high rim trails. Storms can arrive quickly and unexpectedly. Be adequately prepared for a variety of weather conditions when exploring the park. Current weather forecasts and free brochures with safety suggestions are available at the visitor centers.

The finest workers in stone are not copper or steel tools, but the gentle touches of air and water working at their leisure with a liberal allowance of time.

-Henry David Thoreau

THINGS TO DO

GETTING STARTED

If you have 2-3 hours:

- VISIT:** Visitor center and museum and view the 12-minute introductory slide program.
- DRIVE:** Zion Canyon Scenic Drive - 13 mi/20 km round trip.
- WALK:** Weeping Rock Self-Guiding Nature Trail - easy walk to a spring.

If you have half a day:

- VISIT:** All of the above, plus:
- WALK:** Gateway to the Narrows Trail - easy walk along the river.
- OR:** Emerald Pools Trail - moderate walk to a waterfall.
- DRIVE:** East Entrance Road to Checkerboard Mesa Viewpoint - 11mi/18km one way from visitor center.

If you have a full day in Zion and wish to walk:

- DRIVE:** Zion Canyon Scenic Drive - 13mi/20km round trip.
- WALK:** Trails above, plus Watchman Trail - good views of lower Zion Canyon. Canyon Overlook Trail - self-guiding trail.
- ALTERNATIVE:** Half day hikes - allow 4 to 5 hours each:
- HIKE:** Angels Landing - strenuous, good views of Zion Canyon.
Hidden Canyon - moderately strenuous, side trip from East Rim Trail.

If you have a full day in Zion and wish to drive:

- DRIVE:** Zion Canyon Scenic Drive - 13mi/20km round trip.
East Entrance Road - 11mi/18km from visitor center to Checkerboard Mesa.
Kolob Canyons Section (NW corner of Zion) - 45mi/72km one way from visitor center. Ask for Kolob Road Tour Guide.



NATURALIST ACTIVITIES

Feeling curious about Zion? Wondering about the spectacular scenery, the animals seen and unseen, the trees covering the canyon floor, the people who once lived there? Ranger-naturalists offer programs to answer your questions and help you enjoy Zion. They might

spark your curiosity even more. Whether you would like an evening program at one of the campground amphitheatres, a guided hike, or a relaxing talk on the visitor center patio, there's probably something to suit you.

Program schedules vary weekly and are post-

ed at the visitor centers and on bulletin boards throughout the park. Are there additional types of programs you would like to see offered? Fill out a comment form at the visitor center or write: Superintendent, Zion National Park, Springdale, Utah 84767.

BICYCLING IN ZION

If you plan to bicycle in Zion, be sure to read the safety information and regulations on page 6.

WHERE TO RIDE:

All of the main park roads are open to bicycles. Except for a few short steep sections, these are easy to moderate rides. Traffic may be very heavy during periods of peak use on these narrow roads, and riders should exercise heightened caution.

Early morning and late afternoons are good times for rides here, because the canyons are very beautiful then, and traffic is much reduced.

The Kolob Reservoir Road which begins at Virgin, 12 miles southwest of Zion's south entrance, is a beautiful ride with much less traffic. It's 25 miles from Virgin to Lava Point and you'll gain over 4,000 feet in elevation, with some long steep stretches. The last 3 miles are on unpaved roads that, when dry, are relatively smooth and passable for most bikes. You can make a short-

er, less strenuous ride on the same road by starting at the Hop Valley



Trailhead, 13 miles north of Virgin. You will gain about 1,300 feet over the remaining 12 spectacular miles to Lava Point.

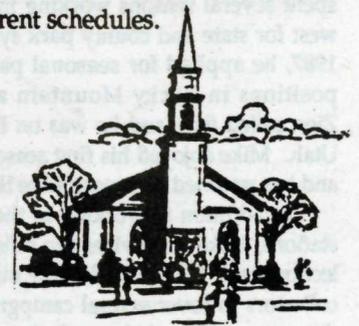
The Kolob Canyons road in the northwest corner of the park is another place to ride. The road gains 1,000 feet in the 5.5 miles between the visitor center and the Kolob Canyons Viewpoint. This spectacular ride offers views of the deep red sandstone formations and the so-called "finger canyons" of the Kolob.

Although there is no trail or off-trail riding in Zion, mountain bikers may stop at visitor centers for suggestions of off-pavement rides in nearby areas outside the park.

WORSHIP SERVICES

During summer months, a variety of worship services are held in Zion National Park and the local area. A Christian Ministry in the National Parks sponsors interdenominational services each Saturday and Sunday at Zion Lodge and the South Campground Amphitheater. The Roman Catholic Church and Church of Jesus Christ of Latter-Day Saints also

offer services in the park. Check park bulletin boards or ask at the visitor center for current schedules.



VISITOR SERVICES

ZION LODGE:



Lodging, a restaurant, snack bar, gift shop, guided tram tours, a hiker shuttle and a narrated slide program are available here. For details call (801) 772-3213. For advance motel reservations call (801) 586-7686. Guided horseback rides are also available March through October. Reservations and information are available at the lodge, or you can call (801) 772-3967.

NEARBY SERVICES AND ACCOMMODATIONS:



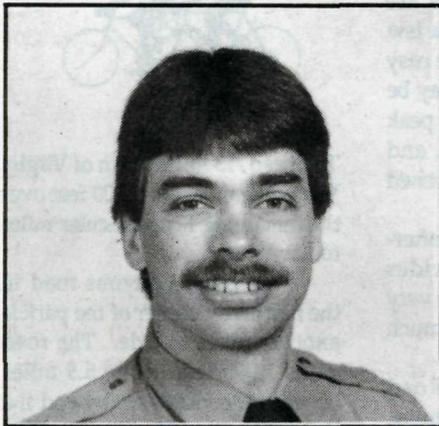
Nearby communities offer a wide variety of services including motels, restaurants, grocery stores, service stations, campgrounds with utility hookups, showers, laundromats, gift shops and galleries, and U.S. Post Offices.

WHO'S WHO IN ZION

A hearty "hello" from the staff of Zion National Park! It takes quite a crew to keep a national park running smoothly. When most visitors think of park employees, they think of "rangers" - the people who patrol roads and trails, conduct guided walks and talks, and assist visitors in a variety of ways. However, rangers are only part of the staff. Other employees have a wide variety of responsibilities. Roads, trails and buildings must be kept clean and repaired, bills must be paid and the budget balanced, research must be conduct-

ed, new employees must be hired, and someone must dispatch the park radio and answer the phones. And these are only some of the jobs!

There are four divisions of National Park Service employees in Zion: Administration, Interpretation, Maintenance and Visitor Protection/Resource Management. We would like to introduce you to an employee from each division. In learning about the staff of Zion, you'll know a little more about how your park operates. So let's find out "Who's Who!"



Mike Gosse:
Fee Collector

Mike may have been the first employee you saw in Zion. He may have even handed you this newspaper. Mike works in the entrance stations, welcoming visitors, collecting entrance fees, answering questions, dispatching the park radio, assisting with tunnel escorts and performing many other duties as the need arises.

Mike has always wanted to be a park ranger. As a 7th grader in Sheboygan, Wisconsin, he wrote a "What I Want to Be When I Grow Up" paper outlining this goal. So how did he end up in Utah? Mike studied forestry at the University of Wisconsin, and spent several seasons working in the midwest for state and county park systems. In 1987, he applied for seasonal park ranger positions in Rocky Mountain and Zion. Zion called first, and he was on his way to Utah. Mike enjoyed his first season in Zion and has returned each year since then.

In addition to working in the entrance stations, Mike supervises the other fee collection staff. He must schedule nineteen fee collectors to cover several campground and entrance station shifts each day. He feels that time management and people management skills are crucial for this job. As a member of the Visitor Protection/Resource Management Division, he occasionally performs other duties such as fighting wildland fires, assisting in search and rescue operations and helping with resource management projects.

When asked what he likes most about his job, Mike says he "enjoys meeting people from all over the world and exchanging information about our countries and customs." It is also rewarding for Mike to work with people who share a love of nature and feel a stewardship for the preservation of the National Parks. Mike tries to make a positive impact on those who visit Zion and tries to be as friendly and informative as possible. He likes to share with visitors the excitement and awe that he feels from working in Zion and hopes people leave Zion with a good feeling about their park.



Kay Threlkeld:
Assistant Chief Naturalist

Kay hasn't always been a park ranger. Before her career with the National Park Service she was a professional costume designer. She tells the following story about how she became a park ranger.

"During the summer of 1979, I hiked 350 miles of the Pacific Crest Trail. About a week into the trip I came across a girl sitting under a creosote bush with her dog. We decided to join forces and spent the next seven weeks hiking together. As luck would have it, she was a seasonal ranger at Sandy Hook in New Jersey. After seven weeks of Park Service stories and the incredible experience of solitude in the wilderness I knew things would never be the same."

Kay spent two years working on a degree in forestry and natural resources at Northern Arizona University. She then obtained a seasonal interpreter position in the living history program at Fort Laramie, Wyoming and stayed for three seasons. Her first permanent position was at Gulf Islands National Seashore in Florida, and she also worked for several years at Tonto National Monument in Arizona. Kay transferred to Zion from the Arch in St. Louis. The differences between urban parks and wilderness parks are great, she says; in St. Louis she found herself "fighting freeway traffic instead of watching for deer crossings and attending symphony concerts instead of coyote serenades."

Kay supervises the day to day operations of the interpretive division. She helps to hire, train and supervise the seasonal naturalist staff. She must work out a complex schedule for guided walks, talks, evening programs and visitor center staffing. Kay must track the annual budget for her division, manage the Volunteers-in-Parks program, and edit this 12 page newspaper. In short, she never finds herself lacking for things to do!

Kay enjoys watching mule deer walk through her yard, the occasional sprinkling of snow on the canyon walls, and the overall solitude, beauty and serenity of the park.



Pat Fesler:
Budget Assistant

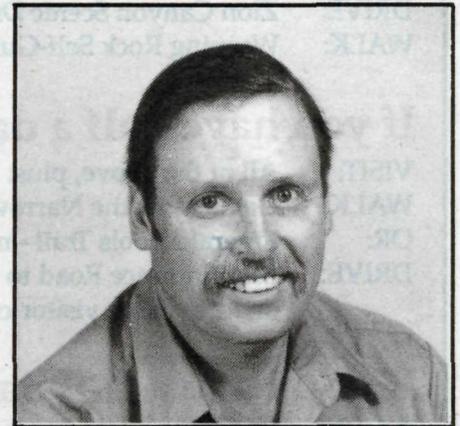
Without Pat Fesler, Zion National Park would simply have to shut down. Pat holds one of the key administrative positions in the park - she is the budget assistant. She helps plan how dollars are to be allocated, and then tracks how, when, and by whom they are actually spent. Pat tracks approximately 190 accounts each year. "Thank goodness for computers," she often says!

As if keeping a two million dollar annual operating budget weren't enough to keep Pat busy, she also manages all the travel and training paperwork for the employees of Zion. She also trains other park staff in budget procedures and helps other divisions track their own budgets.

Pat feels that without patience and the ability to work well with other people, she couldn't function in her job. She also says that it's important for her to be able to switch her train of thought at a moment's notice and to give good attention to detail.

Pat has worked at Zion for 14 years. She started as a temporary clerk/typist and worked her way up into her present position. Pat applied for her position because she wanted a steady job with good benefits; at the time, she says, she had no idea of the concept or mission of a national park. Now she feels fortunate to be able to contribute to the ongoing challenge of operating a big park like Zion. Even after living here for 16 years, to Pat, the beauty of Zion is still awe inspiring and ever changing.

A native of southern California, Pat says that moving to Utah was quite a change to rural life for a city girl. Pat has been married for 25 years; her husband works in the maintenance division in Zion. They have 3 children and 4 grandchildren. For the Feslers, each day brings a new experience and chance for discovery. "There is still so much to learn about the area. The beauty, peacefulness and clean air all contribute to my love of living and working in Zion," says Pat. We're glad she likes it - the park would have a tough time operating if she weren't here!



Walt Toone:
Maintenance Worker

If you camp in the Watchman or South campgrounds while visiting Zion, you can thank Walt Toone for your shady campsite. Walt is the park irrigator. He is responsible for maintaining and repairing the irrigation ditches (over 65 miles of them!) which are used to water the many trees throughout lower Zion Canyon. Walt learned his irrigation skills on his grandfather's ranch at Flaming Gorge in northern Utah. He started working at Zion in 1988 and was able to put these skills to good use.

As a member of the Maintenance Division, Walt also helps with many other duties besides irrigation. During the winter and during his "spare" time in summer, Walt helps the grounds crew with roadside and campground cleanup, custodial work at park headquarters, and other miscellaneous tasks from plumbing to painting.

Before he came to Zion, Walt operated a photography studio in Vernal, Utah for 16 years. He is frequently asked to help with photography projects in the park such as newspaper/publicity photos, the Civilian Conservation Corps reunion and other special events. Walt also took many of the photographs used in the multi-media slide program shown in the Zion Canyon Visitor Center.

Although he is relatively new to the National Park Service, Walt says he has been a long-time admirer of the NPS. He has visited many parks over the years and has appreciated how the Park Service preserves, protects and interprets our national heritage. According to Walt, Zion is "the queen jewel" of the western parks. Both his irrigation work and his photography have allowed him to know Zion more intimately.

Walt lives in Hurricane with his wife and 5 children. They love this area: the beautiful country, the friendly people and most of all, Zion.

ZION NEEDS YOU!!!

4 things YOU can do to help!

We have all seen the lists, "5,973 ways you can SAVE THE WORLD!" After the first couple of hundred suggestions they all begin to look the same. Simply try to remember the 4 R's: RECYCLE glass, metals, paper, plastic and motor oil; REDUCE waste and hazardous materials; REUSE items, like paper bags, clothing and plastic containers; REJECT overpackaging, disposable items and non-biodegradable items. Let's take a look at the why's, what's and how's of each "R."

RECYCLE...

...Glass, metals, paper, plastic and motor oil.

WHY?

"Throw it away." Have you ever thought about where "away" is? The statistics are staggering. Two-thirds of the nation's landfills have been closed since the late 1970's. One-third of the remaining will be full in the next 5 years. Americans toss 160 million tons of garbage per year. That's enough to fill over 1000 football fields, each 30 stories high, or enough to fill a bumper to bumper convoy of garbage trucks half way to the moon! We are simply running out of room. Today only 11% of our waste is recycled. 50% is recyclable.

WHAT and HOW?

Don't throw everything "away." Once you have a system set up in your home (i.e. a separate box for each material to be recycled) it should only take 10-15 minutes each week to separate your trash.

Glass: 32% less energy is required to make new glass from old. The energy saved from recycling one glass bottle will light a 100-watt bulb for four hours. All glass bottles and jars can be recycled. The bottle you throw away today may still be littering the landscape 1,000 years from now. RECYCLE IT! Sort glass according to color, remove any metal strips and caps.

Metals: 70% of all metal is used just once, then discarded. Making aluminum from recycled aluminum uses 90% less energy than making aluminum from scratch. Tin cans ARE recyclable, too. We throw away enough iron and steel each year to continuously supply all American auto makers. RECYCLE IT! Rinse metal cans, remove paper labels and flatten.

Paper: Making new paper from old paper uses 30% to 55% less energy. It takes an entire forest, over 500,000 trees, to supply Americans with their Sunday newspapers every week. Recycled paper could easily be substituted for virgin paper in many products without any loss of quality. RECYCLE IT! Newspapers are easy to recycle but other paper can be recycled as well: notebook, computer and typing paper, xerox copies, white index cards and envelopes. Keep these separate from newspaper, colored paper and cardboard. Unfortunately glossy paper, like magazines, is not easily recycled. The coating on the paper clogs the machines.

Plastics: In the U.S. we throw away 2.5 billion plastic bottles every HOUR. The world's shipping industry dumps over 450,000 plastic containers into the sea every

day. Biodegradable plastics don't seem to be the answer. They must be in sunlight in order to break down. Recycled plastics can be used to make a number of products, such as plastic lumber and fiberfill for sleeping bag insulation. Twenty-six recycled plastic soda bottles can make one polyester suit!

Motor oil: When motor oil is poured into the ground, it can seep into the groundwater and contaminate drinking water supplies. A single quart of motor oil can pollute 250,000 gallons of drinking water. New technology exists that can turn a gallon of used motor oil into 2.5 quarts of new. (It takes 42 gallons of virgin oil to make the same 2.5 quarts.) RECYCLE IT!



REDUCE...

...Waste and hazardous materials.

WHY?

The United States has come to be known as the throw-away society. How much garbage will you generate in your lifetime? Statistics say about 600 times your adult weight. An estimated 14 billion pounds of trash are dumped into the sea every year. Not only are we covering our world with a layer of trash - much of this trash is highly toxic. Detergents, aerosols, solvents, plastics, oil, industrial wastes, fertilizers, pesticides, the list is endless. Hazardous waste seeps into the ground or runs off into streams and lakes, contaminating our already small usable water supply.

WHAT AND HOW?

Excess waste: The solid waste generated in the U.S. in one year could pave a highway 24 lanes wide and 1 foot deep that would stretch from Boston to Los Angeles. Twenty-eight million tons of grass clippings, leaves and other yard waste adds up to almost 20% of all landfill trash. REDUCE IT! One way to get rid of excess waste is to RECYCLE! Compost grass clippings. When shopping, if you don't need a bag to carry your purchase, don't take one.

Pesticides and herbicides: Homeowners use about 10 times more toxic chemicals

per acre than farmers. These chemicals endanger songbirds and pollute ground water. REDUCE IT! Pull weeds! Use mulch (from your compost pile) to keep weeds down. For pests, use non-toxic alternatives. Non-toxic soap sprays will kill some insects. Boric acid dust will kill cockroaches.

Detergents: Many contain phosphates. These chemicals, upon reaching water supplies (lakes and stream), promote algae growth. This depletes the oxygen supply in the water thereby killing aquatic organisms. REDUCE IT! Check your labels and buy detergents with low or no phosphates.

Paint: Americans use enough paint each year to fill a lake 20 feet deep, 4 miles long and 1 mile wide. Paint and paint products can account for up to 60% of the hazardous waste dumped by individuals. Pigment in oil-based paints contains heavy metals which are highly toxic. REDUCE IT! Use latex paint instead of oil-based paints.

Household toxics: Most chemical cleaners (window, drain, oven, toilet, ammonia) contain harmful chemicals which can burn the skin or give off harmful gases. Mothballs are really nasty - 100% paradichlorobenzene - which can harm your liver and kidneys. Even things like permanent ink pens, markers and permanent press clothes contain toxic chemicals. REDUCE IT!

Buy or make alternative products. Baking soda and a fine steel wool pad works on tough spots. Herbal mixtures and natural scents are good fresheners. Cedar chips smell nice and keep the moths away, too.

REUSE...

...Items like paper bags, plastic containers and clothing.

REUSE is similar to RECYCLE - only cheaper! If products are reused you won't need to buy as much. REUSING also REDUCES waste.

WHAT and HOW?

Shopping bags: Paper or plastic? Plastic may be more convenient but it is not biodegradable and the ink used on the bags contains toxic heavy metals. Paper bags are biodegradable but require the destruction of millions of trees to be produced. However, BOTH can be REUSED. Keep a supply in your car. If you forget them when you go into the store, make yourself go back and get them - you will remember next time. REUSE IT!

Washables: Disposable items may be easier for us to use but we need to start considering what will be easier on the environment. Plastic containers make good storage containers. Put leftovers in a margarine tub instead of foil or plastic wrap. Use washables such as rags (instead of paper towels), mugs (instead of paper cups and definitely not styrofoam), and plates (instead of paper or foam). THINK before you throw it away. REUSE IT!

REJECT...

...Overpackaging, disposables, and non-biodegradables.

WHY?

Have you ever tried to remove something from its packaging quickly? It can't be done. First take off the plastic from around the entire package. Next break the seal on the package. Then open the package and remove the contents. Now remove the plastic from around the product. If you're lucky you may have reached the product at this point. If not, keep opening! Sounds like typical packaging, doesn't it? 50% of the paper produced in the U.S. is used solely for packaging, as is 75% of the glass, 30% of the plastic and 8% of the steel. \$1 out of every \$11 spent on food goes into packaging. Convenient and disposable have become the American way of life. By REJECTING overpackaged and disposable items the demand for them goes down and the energy required to produce them goes down.

WHAT and HOW:

Styrofoam: America produces enough styrofoam cups each year to circle the earth 436 times. Chlorofluorocarbons (CFCs, which destroy the ozone layer) are used in the production of styrofoam. Because of the big uproar over the destruction of the ozone layer some companies are using other chemicals to make CFC-free styrofoam. Although less damaging, these chemicals still threaten the ozone and contribute to smog. Styrofoam is NON-biodegradable. It will not go away. None of it is safe. REJECT IT!

Disposable diapers: The U.S. uses 18 billion disposable diapers each year, enough to reach back and forth to the moon seven times. Over one billion trees are cut each year to make disposable diapers. REJECT IT! Buy and use cloth diapers, they're cheaper.

Other disposable items: Disposable bottles consume three times as much energy as reusable, returnable containers. Avoid disposable, one-use items such as disposable razors, flashlights, cameras and batteries. REJECT IT! Think about what you buy - "Can this be recycled? Can I reuse this container?" If not, consider rejecting it.

Excess packaging: The garbage of the average American is 1/3 packaging that is tossed out immediately. Approximately 1/2 of the plastic we throw away each year is solely packaging. REJECT IT! Buy in bulk, especially non-perishable items (it's cheaper!).

What this all boils down to is consuming LESS, demanding LESS energy from the earth. This will require MORE energy from you, us, humans. Humans don't like to put out more energy than is absolutely needed to get the job done. If there is a shorter, more convenient way to do something, we will find it - and, up until now, no matter what the consequences. Well, now the consequences are catching up to us, and we MUST act. It's a tall order and will require work on everyone's part. Hopefully, the suggestions above will reduce some of the work and make it more "convenient" by simply remembering The 4 Rs: RECYCLE, REDUCE, REUSE and REJECT. Here's to a healthy home!

KIDZ PAGE

Look and listen carefully as you walk along, you might see the black and orange of the black-headed grosbeak or hear the song of the canyon wren.

Watch for insects along the trail. You may see a spider, a beetle, or a line of ants in search of food. Please do not harm them - like all living things, insects help keep our world in balance.

Oops! Someone left a pop can on the trail. Can you leave the trails in Zion cleaner than you found them?

Trees are nice for more than just shade. Their seeds provide food and their branches provide homes for many birds and small mammals.

When you see water in Zion, look for animal life. Trout live in the streams, tracks of mule deer can be seen along the banks and humans like the coolness of water on hot summer days.

Ferns and flowers are a common sight on 'Weeping Rock Trail' because there is lots of water. How many different kinds do you see?

Weeping Rock is an interesting place because water is coming out of the rock. How can that be?

"THANK You", says the ranger. Think about the things you saw on your way up the trail. Do you have any questions for the ranger?

FINISH

MATCH THE ANIMALS

Draw a line from each animal to its description

- CHIPMUNK** I love to eat insects and sometimes other small animals. I have two black stripes around my neck.
- RINGTAIL CAT** I have very large ears that help keep me cool during the hot summer. People love to take pictures of me. I don't mind, but please don't feed me or my babies - it is harmful to us and gives us bad habits.
- COLLARD LIZARD** I am small, striped and very cute, but even if I beg, please don't feed me. It's hard for me to tell food from fingers and besides, "people" food isn't good for me.
- BEAVER** I like to eat the soft inner bark of pine trees. I don't have very sharp teeth, but I do have sharp hair!
- PORCUPINE** Here in Zion, the water in the Virgin River flows so fast that I can't build a dam and lodge like others of my kind. So instead I build my home in the bank of the river.
- MULE DEER** Like my close relative the raccoon, I am nocturnal (active at night). Watch for me along the roadside - you just might see my bright eyes and bushy black and white tail!
- CANYON TREEFROG** Many people are afraid of me but there is really no need. I'm not poisonous and I only want to eat insects for lunch - not humans, yech!
- PEREGRINE FALCON** I like to hangout at the pools in the summer and I'm known to be quite the singer!
- TARANTULA** I eat birds, like swifts and swallows which can fly 170 mph. Buy I can catch them because I can fly over 200 mph!

GREY FOX



ALLOSAURUS



BOBCAT



P	O	R	V	K	E	B	M	U	L	E	D	E	E	R	O	L
X	A	Y	I	F	M	N	R	D	G	R	K	N	A	I	Q	C
R	O	N	R	G	E	X	U	B	A	C	O	D	H	J	L	A
D	Y	Z	G	G	R	B	H	Z	A	I	L	U	S	O	M	N
E	U	M	I	E	A	R	I	E	N	L	O	P	A	F	U	Y
P	C	O	N	S	L	L	T	U	J	O	B	U	I	Q	T	O
C	C	L	R	T	D	S	X	M	I	H	O	N	R	U	B	N
O	A	F	I	D	P	V	L	L	Y	I	D	E	S	E	R	T
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T	N	A	E	F	O	R	K	X	N	O	Q	U	Y	B	J	I
O	I	T	R	U	L	P	N	I	M	D	I	P	P	E	R	N
N	X	C	R	N	S	B	A	C	E	Z	I	V	Y	N	K	G
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- | | | | |
|-----------|------------|---------------|----------------|
| SANDSTONE | KOLOB | EMERALD POOLS | VIRGIN RIVER |
| WATCHMAN | ZION SNAIL | PARK RANGER | ANGELS LANDING |
| CANYON | DESERT | COTTONWOOD | RINGTAIL |
| RECYCLE | YUCCA | WATER | NARROWS |
| LIZARD | AIR | DIPPER | MULE DEER |

WEeping ROCK TRAIL

START

Look! The rangers hat has been blown off and landed at the bottom of the trail! Can you find your way up the trail and return the rangers hat?



GAMBEL OAK

HACKBERRY

BOX ELDER

JUST FOR KIDS!

Come Join The Adventure: Be A Junior Ranger

What do you get when you combine a child, a beautiful national park, fun activities and environmental education? A Junior Ranger! Each summer Zion National Park, in cooperation with the Zion Natural History Association, sponsors an environmental education program for children 6 through 12 years of age. The Junior Ranger Program provides young visitors with unique learning experiences about the park and all that it encompasses. The program's goal is to help children to develop awareness, knowledge, and special skills in wildlife protection and the conservation of our environment. This knowledge is gained through involvement in fun, creative activities and a wide variety of experiences. An added bonus is

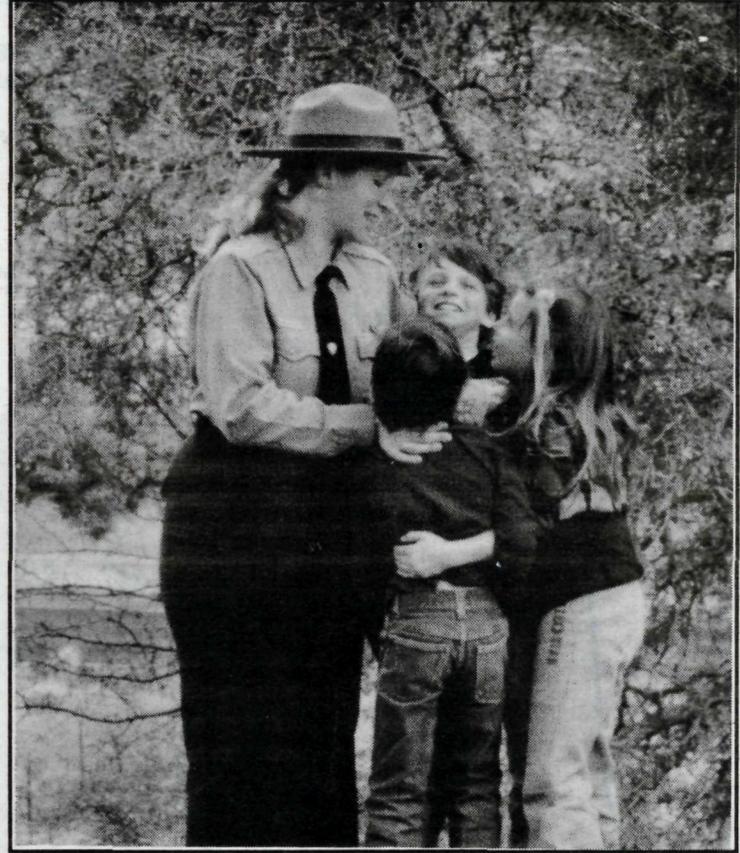
the opportunity to get acquainted with children from around the world.

The program is held at the Zion Nature Center, located just north - and within walking distance - of the South Campground. The program consists of two sessions, one in the morning from 9:00 to 11:30 a.m. with registration from 8:15 to 9:00 a.m., and an afternoon session from 1:30 to 4:00 p.m. with registration from 12:45 to 1:30 p.m. The program runs Tuesday through Saturday during summer months. A one-time registration fee of \$1.00 helps defray the cost of the Junior Ranger awards - a certificate, badge and patch.

Zion has made a commitment to the education of young people in environmentally sound practices. The park's philosophy is

simple: what people understand and love, people take care of and respect. By helping young people receive an inside view of how nature works, the park hopes to help them develop a life-long appreciation of nature that will in turn nurture a feeling of responsibility for taking care of our home - Earth!

The Junior Ranger Program runs from May 26, 1990, through September 1, 1990. Because the activities are primarily outdoors, children should wear comfortable pants or shorts and sturdy walking shoes (no sandals, please). A hat is advised on hot, sunny days and raingear is recommended if the weather looks inclement. For further information about this exciting youth program, drop by the Zion Nature Center or Zion Canyon Visitor Center.



Junior Ranger Program Director Andrea Bornemeier with her Junior Rangers.

VOLUNTEERS IN PARKS

Last year 150 very important people contributed their time, talents and energy to the preservation and operation of Zion National Park. You could become one of them by joining the Volunteers in Parks (VIP) program.

What do VIPs do? There are 101 different ways in which VIPs help in the NPS. Here is a sample of the work that has been done by VIPs at Zion:

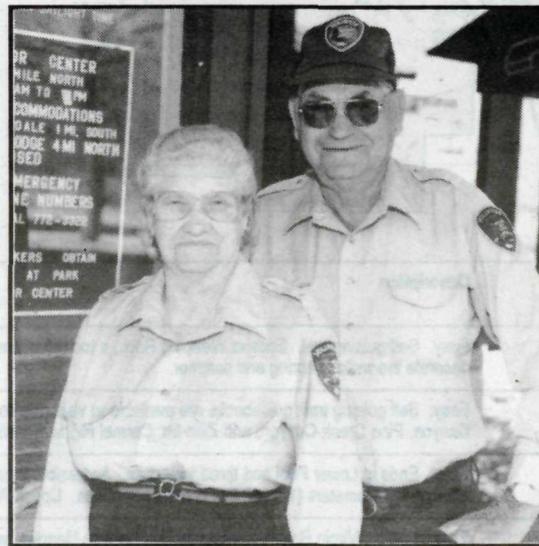
- Robert and Lorna Schow have been donating their Saturdays to the park since 1985. They provide roving interpretation along several of Zion's most popular and congested trails, assisting visitors by answering questions, giving directions, reporting accidents, and controlling traffic in busy parking lots.

- Wilby and Lorrain Lejeune have served as Campground Hosts in the Watchman Campground since the summer of 1987. They provide information, help visitors register and find campsites, provide emergency assistance, and help the park staff by reporting resource damage and facility problems.

- This is Don Jones' second summer as a VIP naturalist. Don works at the visitor center information desk, answering visitors' questions and handing out written information. He also gives guided nature walks and evening interpretive programs at the campground amphitheaters.

Other projects have included:

- Writing and designing visitor brochures.
- Building fences, painting buildings, maintaining trails.
- Taking photographs and working in the dark room.
- Answering mail requests.



Campground Hosts Wilby and Lorrain Lejeune

- Answering telephones.
- Organizing photographic and slide files.
- Picking up litter along roads and trails.
- Assisting resource managers and researchers by making wildlife counts, planting trees and taking part in similar projects.
- Collecting specimens for the park herbarium.

The list is endless. What do you have to contribute? If you would like to help ensure that your national parks will still be enjoyed by future generations, consider becoming a VIP for the National Park Service; if not at Zion, then at a park near your home. As a volunteer, you can make a difference in your own life, in the lives of others, and in the way the national parks are managed and protected.

WEATHER IN ZION

Clear skies and warm sunshine are trademarks of the Southwest; however, visitors to Zion may be surprised by the unexpected - a drenching thunderstorm in July, a snow flurry in January, a cool evening in May. Zion is open all year. Each season is unique. Consider the wide ranges in elevation and the possibility of swiftly changing weather when preparing to explore the park. You can find daily weather reports in visitor centers.

SPRING - Are you a wildflower buff? Then April and May are for you! Spring days are pleasant (sometimes hot), and nights are mild.

SUMMER - Expect temperatures of 100° and more. Late afternoon thunderstorms may

cool the air and a daily breeze in the evening helps make nights in the 60's common. Know the forecast before you hike. Flash-floods in narrow canyons and lightning on high plateaus are significant hazards.

AUTUMN - Late September temperatures range from 55 to 90 degrees Fahrenheit. In October and November the low may be 37° and the high up to 78°. Autumn has fewer vacationers and the striking sight of fall colors

against red sandstone walls.

WINTER - Snowfall in Zion Canyon is usually slight, but the plateaus may have enough for skiing and snowshoeing. Daytime temperatures average in the fifties. Nights can drop to the twenties. Watch for ice on the roads early in the day and in shaded spots.



ZION NATIONAL PARK

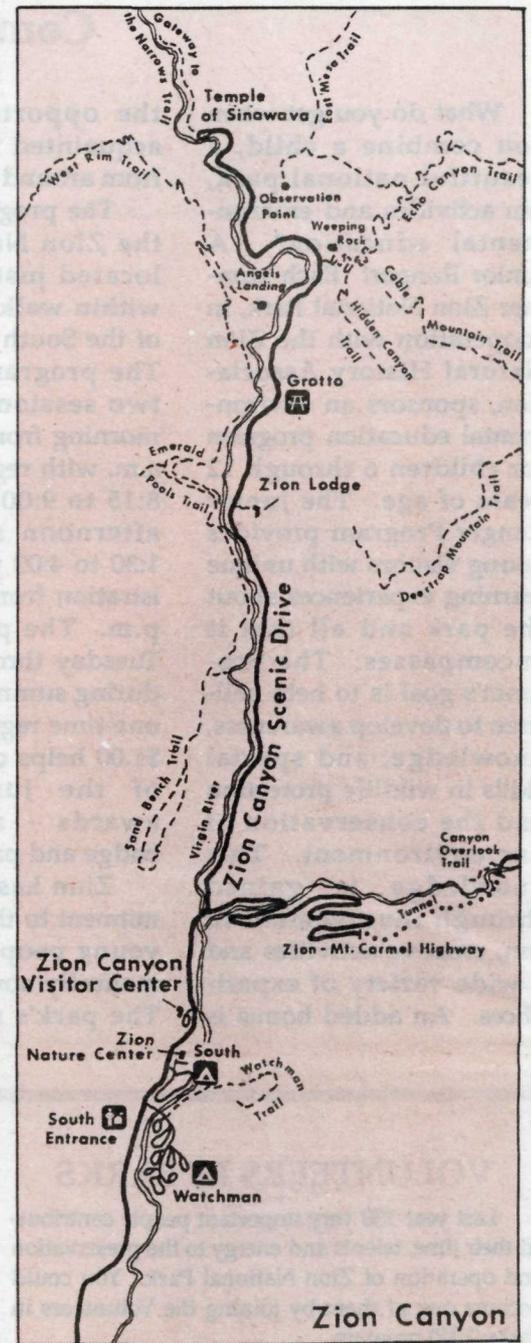
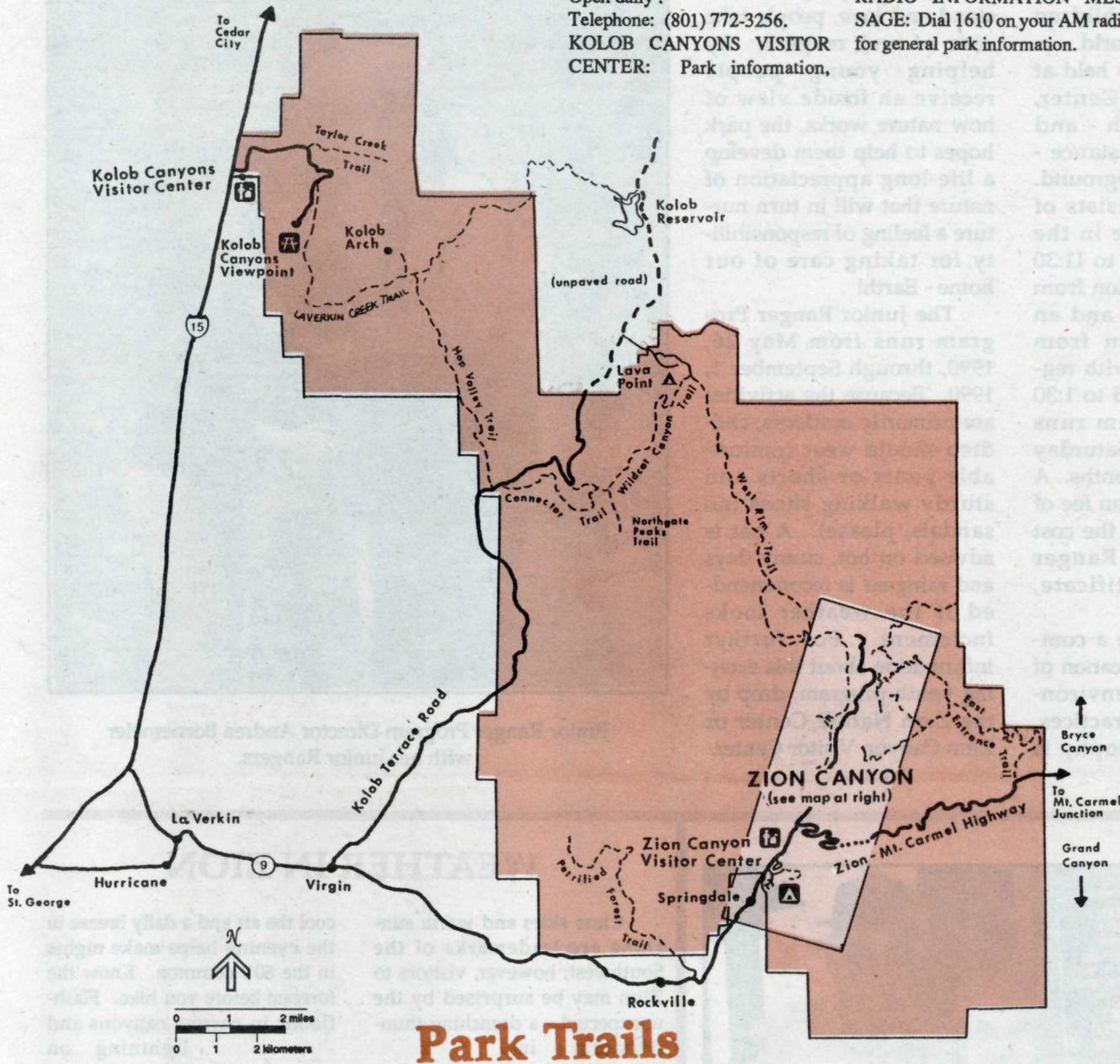
Information

National Park Service
U.S. Department of the Interior

ZION CANYON VISITOR CENTER: Information, museum, introductory slide show, books, videos, maps and backcountry permits. Open daily. Telephone: (801) 772-3256.
KOLOB CANYONS VISITOR CENTER: Park information,

books, maps and backcountry permits. Open daily. Telephone: (801) 586-9548.

RADIO INFORMATION MESSAGE: Dial 1610 on your AM radio for general park information.



Park Trails

Trail	Trailhead	Round Trip (mi/km)	Round Trip (avg. time)	Ascent (ft/m)	Description
Weeping Rock	Zion Canyon Scenic Drive—Weeping Rock parking lot	0.5/0.8	1/2 hour	98/30	Easy. Self guiding trail. Ends at Weeping Rock, a rock alcove with dripping springs. Hanging gardens of wildflowers decorate the walls in spring and summer.
Canyon Overlook	Zion-Mt. Carmel Highway—just east of long tunnel	1.0/1.6	1 hour	163/50	Easy. Self guiding trail; guidebooks are available at visitor center and trailhead. Ends at spectacular viewpoint of lower Zion Canyon, Pine Creek Canyon, and Zion-Mt. Carmel Highway switchbacks.
Emerald Pools	Zion Canyon Scenic Drive—opposite Zion Lodge	1.2/1.9	1 hour	69/21	Easy. Ends at Lower Pool and three waterfalls. Accessible to handicapped, with some assistance. To reach Upper Pool, hike another 1.6 kilometers (1 mile); this is more strenuous. Upper Pool is larger, sits at base of high cliffs.
Gateway to the Narrows	Zion Canyon Scenic Drive—Temple of Sinawava	2.0/3.2	1-1/2 hours	57/17	Easy. Follows Virgin River upstream to Zion Canyon Narrows, where paved trail ends. Hanging gardens of wildflowers in spring and summer. Trailside exhibits. Accessible to handicapped; assistance recommended on last part of trail.
Watchman	Service road east of Watchman Campground Registration Station	2.0/3.2	2 hours	368/112	Moderately strenuous. Ends at viewpoint of lower Zion Canyon, Oak Creek Canyon, and town of Springdale. Recommended for hiking in fall, winter, and spring.
Hidden Canyon	Zion Canyon Scenic Drive—Weeping Rock parking lot	2.0/3.2	3 hours	850/259	Moderately strenuous. Leads through narrow side canyon carved in joint of rock. Trail ends at canyon-mouth; can hike beyond end of the trail for another 1 kilometer (0.6 mile). Natural arch.
Taylor Creek	Kolob Canyons Road—2 miles from visitor center	5.0/8.0	4 hours	450/137	Moderately strenuous. Follows the Middle Fork of Taylor Creek past two old homesteading cabins to Double Arch Alcove. Footwear may get wet fording the creek.
Angels Landing	Zion Canyon Scenic Drive—Grotto Picnic Area	5.0/8.0	4 hours	1488/453	Strenuous. Ends at summit high above Zion Canyon floor. Last 0.8 kilometer (0.5 mile) follows a steep ridge; chains and railings have been added for safety. This hike is not recommended for anyone afraid of heights.
East Rim	Zion Canyon Scenic Drive—Weeping Rock parking lot	8.0/12.0	7 hours	2148/655	Strenuous. Climbs to Observation Point high above the floor of Zion Canyon. Excellent views of the canyon. Trail gives access to other East Rim plateau trails, including Cable Mountain and Deertrap Mountain Trails.
Orderville Canyon	Zion Canyon Scenic Drive—Temple of Sinawava	9.0/5.6	5 hours	40/132	Moderately strenuous. Avoid carrying items in your hands and protect cameras in plastic bags. Wear ankle supporting shoes for wading in up to 4 feet of water and for climbing over rocks. Check Narrows danger level before starting.
Kolob Arch	Kolob Canyons Road—Lee Pass	14.0/22.0	8 hours	699/213 Decent	Strenuous. Follows Timber and La Verkin Creeks and ends at Kolob Arch, the world's largest freestanding arch. This red rock span is 94 meters (310 feet) long.
West Rim	Zion Canyon Scenic Drive—Grotto Picnic Area	26.6/42.6	20 hours	3593/1095	Strenuous. Climbs to high country viewpoint of canyon of Right Fork of North Creek (20.4 kilometers/12.8 miles), and continues to Lava Point, an alternate starting point. Trip to Lava Point should not be attempted as one-day hike.