



## WELCOME TO CRATERS OF THE MOON!

On May 2, 1924, President Calvin Coolidge set aside, for present and future generations, an area which contained "...many curious and unusual phenomena of great educational value and has a weird and scenic landscape peculiar to itself." Sixty-eight years later, Craters of the Moon National Monument still provides an awe inspiring opportunity for you to

view the tremendous forces of volcanism and the healing powers of nature. I invite each of you to not only drive the loop but to get out, walk the trails, breathe the clean air, and experience the natural history of this unique area first hand. Have a safe and pleasant visit.

—Jonathan B. Jarvis  
Superintendent



## WHY OUR GRASS IS NOT GREENER

Where is the lush green lawn that used to surround the Visitor Center? Why do you instead see fields of dirt with slender blades of grass just beginning to emerge? The National Park Service has embarked on an ambitious project to replace the lawn with plants that are native to this area and use far less water. There are a number of compelling reasons for this undertaking.

When the Visitor Center was completed in 1959, the area around it was landscaped with Kentucky bluegrass, water birch, and Douglas fir. Bluegrass is not native to the arid environment at Craters of the Moon, and needs more water to survive than most grasses. The National Park Service watered 30 minutes per day to keep the lawn green. This amounted to a staggering 2.5 million gallons per year to maintain the 1.5 acre lawn, 80% of all the water used in the monument. It seemed

inconsistent for an agency whose mission is nature preservation to expend so much water to sustain alien plants.



The impact of the lawns on the local mule deer herd, which numbers between 400 and 500 animals, was an additional concern. The moisture

from the sprinklers and the grass itself attracted an unnatural concentration of deer, especially in dry years. The presence of the lawns

on the highway.

For these reasons, the National Park Service decided in 1993 to remove most of the lawn and replant with native species. This project is now well underway and should be completed in 1996.

*To understand the West, you have to get over the color green; You have to quit associating beauty with gardens and lawns.*

—Wallace Stegner

The part of the lawn which visitors use most—the picnic area and the square around the benches on the west end of the building—remains unchanged, because Kentucky bluegrass is hardy and can withstand a lot of traffic. The rest of the lawn has been removed, and park staff are replanting the bare

*(continued on page 2)*

### HELP SUPPORT THE MONUMENT

The Craters of the Moon Natural History Association is a non-profit cooperating association. Through the sale of educational materials in the visitor center, the association raises money which is in turn used to support the research, interpretation and conservation programs of the National Park Service. Donations are also accepted.

Come by the visitor center and see the extensive selection of publications, postcards, slides, posters, videotapes, and childrens' books. Film, flashlights, stamps, and charcoal are also offered for sale as a service to visitors.

## WATCH THOSE ROCKS!

The unique volcanic landscape at Craters of the Moon contains some unusual safety hazards of which visitors should be aware.

First, watch those rocks! All lava rock is sharp and abrasive. Taking a fall will almost certainly result in cuts and scrapes. When travelling on the lava, stay on trails, slow down, and use caution. Sturdy shoes and long pants are recommended.

Second, it is hot, dry, and windy here! The temperature sometimes reaches 95 degrees F. This is coupled

with high elevation and a dark landscape that absorbs heat. The threat of dehydration, heat exhaustion, and even heat stroke exists. Wear a hat and other sun protection, and be sure to drink a lot of water.

Finally, the caves can be very hard on the head! With the exception of Indian Tunnel, all the lava tubes are dark and the ceilings low. Carry a flashlight with fresh batteries, and watch your head!

If you keep these few things in mind,

your visit to Craters of the Moon will be safe and enjoyable.

**Need More Information?**

*Tune us in on your radio!*

**AM 1610**

## WHY OUR GRASS IS NOT GREENER

(continued from page 1)

areas in several different ways. We reseeded the island area in the parking lot and the front of the Visitor Center with sheep fescue, a native grass which consumes 50 percent less water than Kentucky bluegrass. These areas will not be mowed and common local shrubs, wildflowers, and herbs will be planted among the grass. We also reseeded the area west of the building with fescue. Because people often walk their dogs there, it will be mowed.

In addition, the monument staff is working with the Idaho Native Plant Society to construct a nature trail in front of the Visitor Center. Trail signs will identify and describe some of the more beautiful and interesting

plants which eke out an existence on the lava.

The concept of environmentally sound landscaping in desert habitats, called xeriscaping, was unfamiliar to the people who planted the bluegrass lawn 25 years ago. Today, however, there is an acute awareness in the arid west of what a precious resource water is. We also better recognize the interrelationships between living things, and know that the lawns indirectly resulted in the unnecessary death of mule deer. The National Park Service is pleased to show off our new grass, even if it is not as green as it used to be.



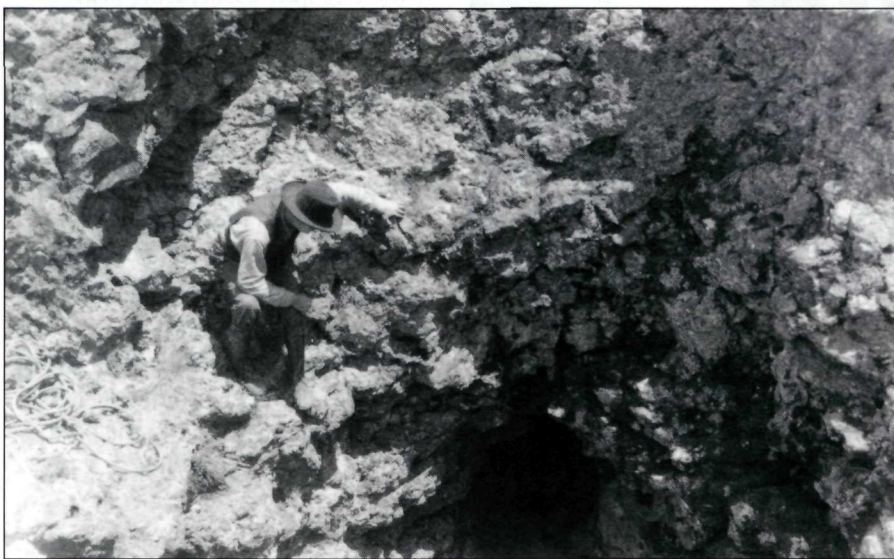
## ROBERT W. LIMBERT: Explorer, Author, Visionary

The explorers, pioneers, miners, and ranchers who traveled this area from the 1850s through the early part of this century could find nothing to love about it. The parched and inhospitable lava beds were only an obstacle to get past as quickly as possible. All of that changed in 1918 when Robert W. Limbert, one of Idaho's most tireless and flamboyant promoters, began to explore Craters

three days travel over the rough lava, the dog's feet were raw and bleeding.

For the remainder of the trip, Limbert and Cole had to carry the dog or wait for him to pick his way across the rock.

They crossed 28 miles of jagged a'a flows the first three days. Sleeping at night was almost impossible, for they could not find a level place to lie down. To locate scattered water



of the Moon. His curiosity piqued by stories of grizzly bears roaming the mysterious lava beds, he made two short trips into the area.

In the Spring of 1920 he was ready for a more daring undertaking. Accompanied by W.L. Cole of Boise, he completed a 17 day, 80 mile odyssey through the lava wilderness. They carried blankets, cooking gear, camera and tripod, binoculars, a compass, guns, and two weeks of dried food - 55 pounds of equipment each! They also brought along a camp dog, a decision they were to regret. After

holes, they followed old Indian or mountain sheep trails, or watched for places where groups of birds dropped from the sky to quench their thirst.

Throughout the trip Limbert photographed the landscape. He also gave colorful names to many features: Vermillion Canyon, Trench Mortar Flat, Echo Crater, Yellowjacket Water Hole, Amphitheater Cave, and the Bridge of Tears.

Limbert continued to explore the region following this journey. In

## WHAT'S NEW AT DEVILS ORCHARD? EVERYTHING!

A paved trail, innovative exhibits, and a recently completed brochure are all new at Devil's Orchard.

The National Park Service has rebuilt the trail to make it accessible to all people. The trail will give every park visitor a chance to experience the unusual landscape preserved at Craters of the Moon and to learn something about the challenges the National Park Service faces in caring for it.

A grant from the National Park Foundation funded the design and installation of 8 exhibits along the Devils Orchard trail. The exhibits take a unique approach. Rather than describing the plants, rocks, and animals along the trail, they

discuss how these resources are managed. What is the biggest threat to the volcanic formations? Why did the National Park Service remove 6,000 limber pines in the 1960s? What do lichens tell us about the air we breathe? What can all of us do to reduce or eliminate harm to the resources protected here?

At the end of the trail, you will find a brochure to take with you. The brochure examines the process of resource management in more detail. Together, the exhibits and brochure will help you understand some of the critical issues involved in preserving Craters of the Moon.

1921 he led 10 scientists and civic leaders into the lava fields and argued for protection of the area's volcanic features. During the trip he made over 200 still photographs and 4,000 feet of motion picture film.

Limbert vividly described his experiences in a series of striking photo essays in newspapers and magazines. The most prominent was a 1924 National Geographic article entitled "Among the 'Craters of the Moon.'" He wrote, "No more fitting tribute to the volcanic forces which built the great Snake River Valley could be paid than to make this region into a National Park." Limbert also sent President Calvin Coolidge a scrapbook with pictures and narration describing his trips along the Great Rift. Within two months after the article appeared, Coolidge issued a proclamation establishing Craters of the Moon National Monument. About 1,500 people travelled over the gravel and cinder roads to attend the dedication ceremony on June 15, 1924.

Limbert was the first person to recognize the potential of Craters of

the Moon to fascinate and delight visitors. He said, "Although almost totally unknown at present, this section is destined some day to attract tourists from all America, for its lava flows are as interesting as those of Vesuvius, Mauna Loa, or Kilauea." Although this prediction did not prove true in his lifetime, today more than 200,000 people visit Craters of the Moon National Monument each year.

*The 'Valley of the Moon' lies in a region literally combed with underground caves and passages, bewildering in their immensity, mystifying in their variety of strange formations, where there are natural bridges as yet unknown to geographers, where bear tracks hundreds of years old may be traced for miles across cinder flats. Here are craters of dormant volcanos half a mile wide and seemingly bottomless, huge cups in which the five-story Owyhee hotel might be placed to resemble a lone sugar loaf in a huge bowl. Here are strange ice caves with stalactites and ice-encrusted walls, caves that contain as much ice in the middle of August as they do in the winter.*

—Robert Limbert 1924



## ANY QUESTIONS?

Even before you arrived at the monument, the name "Craters of the Moon" may have aroused your curiosity. It implies something foreign and inhospitable. Now that you are here, this unusual landscape will further pique your interest and give rise to many questions. Here are the answers to the most commonly asked questions. We encourage you to contact a ranger should you desire more information.

### Where's the volcano?

After driving past mile after mile of rugged lava flows, you may have arrived here expecting a gigantic volcano with steep slopes and a summit crater—like Mount St. Helens. But the volcanoes at Craters of the Moon do not fit that description. The eruptions here, called "fissure eruptions", occurred along cracks in the earth's crust. The eruptions were of very fluid basaltic lava from which gases could easily escape. Without high gas pressure, eruptions tend to be very mild and produce small cinder cones and extensive lava flows. There are over 25 cinder cones at Craters of the Moon, each one a small volcano.

### When did the eruptions occur?

Volcanic activity occurred on the Snake River Plain for many millions of years. But Craters of the Moon was formed by eruptions that started only 15,000 years ago and represents the last period of active volcanism in this area. The most recent activity occurred 2,000 years ago. A walk on the North Crater Flow Trail allows you a close up view of one of these recent flows.



### Who planted all the flowers?

In the late spring, hundreds of tiny wildflowers adorn the cinder slopes of the monument. Because they are so evenly spaced, they appear to have been planted in neat rows. Not so! Plants here must compete for a very limited amount of water; consequently, they cannot grow too close together and survive. The plants space themselves naturally according to the availability of limited resources.

### Did Indians ever live here?

Because of the harsh conditions, none of the local Indian tribes made a permanent home in the lava flows. However, several Northern Shoshoni artifacts, temporary shelters and hunting blinds have been found in the monument. This indicates that they did venture into the area occasionally, probably to hunt and gather tachylite for arrow points.

### Did the astronauts really train here?

The second group of astronauts to walk on the moon visited Craters of

the Moon in 1969. Although they did not actually train here, they did study the volcanic geology. They were also able to explore an unusual and harsh environment in preparation for their trip into space.

### Does the wind always blow like this?

No—sometimes it's worse! Because Craters of the Moon is higher than the surrounding area (5900 feet in elevation), it intercepts the prevailing southwesterly winds. Afternoon winds can be expected almost every day, but usually die down in the evening.

### How did the monument get its name?

Local legends made references to the landscape resembling the surface of the moon. Some even referred to the area as the "Valley of the Moon." It became known as Craters of the Moon when Robert Limbert used the name in an article for a national magazine. Limbert was the first man to thoroughly explore and promote the area. The name became official in 1924 when 53,243 acres were set aside as a National Monument.

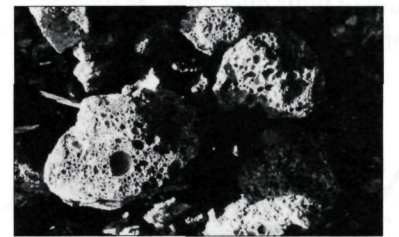
### Will the volcanoes erupt again?

Craters of the Moon is a dormant rather than an extinct volcanic area. The volcanoes here are not dead, only sleeping. Indications of impending eruptions—earthquakes, the opening of steam vents and ground swelling—have not occurred recently. However, geologists believe that the area will become active within the next 300 to 1000 years.

## BLACK ROCK

Many visitors to Craters of the Moon feel that the stark scenery has a beauty all its own. Others see only so much "black rock." Whatever your impression, we encourage you to learn more about the events which created this landscape. You may look at this "black rock" in a new light if you understand how it formed.

Although all of the rock at Craters of the Moon is made of the same basic elements, changing conditions during eruptions result in very different lava forms—cinders, pahoehoe, and aa. All begin as magma within the earth's core. When a large amount of dissolved gas is present in the magma it erupts explosively, forming *small, bubbly cinders*. These cinders pile



up around volcanic vents, building cones like North Crater and Inferno Cone. Magma containing less gas simply wells to the surface and flows downhill to produce *smooth pahoehoe lava*. Pahoehoe becomes

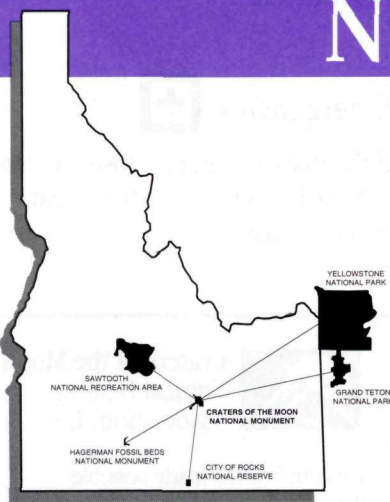


thick and slow-moving as it cools, resulting in the jagged formations known as *aa flows*.



If you study the lava with a critical eye you should be able to recognize its type and how it formed.

## NEARBY AREAS OF INTEREST



### City of Rocks National Reserve

The 14,000 acre City of Rocks National Reserve is a mecca for rock climbers from all over the world. It is also rich in human history. The Bannock and Shoshone Indians traveled here, as did emigrants on the California and the Salt Lake Alternate Trails. Facilities are primitive, and there is no developed campground.

City of Rocks National Reserve is located 50 miles south of Burley, Idaho on Routes 27 and 77 to Oakley and Almo, respectively. From these two towns follow posted signs. For information contact City of Rocks National Reserve, P.O. Box 169, Almo, ID 83312, (208) 824-5519.

### Hagerman Fossil Beds National Monument

This monument was established in 1988 to preserve the outstanding Pliocene fossil sites of the region. Over 100 individual horse fossils have been found, plus thousands of additional specimens representing more than 115 distinct species of animals.

The National Park Service headquarters is in the town of Hagerman on US 30, "The Thousand Springs Scenic Route." The Visitor Center is open 8:30 a.m. to 5:00 p.m. daily and offers an audio visual program and fossil exhibits. Outdoor programs are offered from 9:00 a.m. to 12 noon each Saturday throughout June, July and August. For further information contact

the National Park Service, P.O. Box 570, Hagerman, ID 83332, (208) 837-4793.

### Yellowstone National Park

Yellowstone, the first National Park in the United States, contains spectacular lakes and waterfalls, abundant wildlife, and some 10,000 geysers and hot springs, including Old Faithful.

The west entrance to the park lies 199 miles east of Craters of the Moon on Highway 20. Bridge Bay is the only campground in Yellowstone which requires reservations. If you do not have a reservation, plan on getting to the park in the morning. Campgrounds are usually full by noon. For more information contact (307) 344-7381. For lodging reservations contact (307) 344-7311.

### Grand Teton National Park

Grand Teton National Park contains some of the most awe inspiring mountain scenery in the United States. This series of blue-gray peaks rising more than a mile above the

sagebrush flats was once a noted landmark for Indians and mountain men. The park is located 190 miles east of Craters of the Moon on Highway 26/191.

The campgrounds at Grand Teton are not on a reservation system. Except on holiday weekends, you should be able to find a campsite without a problem. For more information contact Grand Teton National Park, P.O. Drawer 170, Moose, WY, 83012, (307) 733-2880.

### Sawtooth National Recreation Area

The Sawtooth NRA lies north of Ketchum on Highway 75, approximately two hours from Craters of the Moon. Three classic mountain ranges with 40 peaks above 10,000 feet and hundreds of lakes provide scenic vistas in every direction. The heart of the area is a 217,000 acre wilderness. There are ample opportunities for camping, boating, hiking, backpacking and sightseeing. For further information call the National Forest Service at (208) 726-7672.

# GUIDED WALKS AND TALKS

The following programs are offered June 12th through September 5th. Please check at the Visitor Center for the program schedule outside of these dates.  
We hope you will join us for a program during your stay.

## Visitor Center

Open daily:  
8:00 a.m. to 6:00 p.m. mid-June to Labor Day, 8:00 a.m. to 4:30 p.m. remainder of the year (#1 on park folder)

The visitor center is an ideal place to start your visit to Craters of the Moon. The exhibits will orient you to the area, explain the origin of the volcanic formations, and point out some of the outstanding features. There is someone on duty to answer any of your questions, as well as provide assistance in emergencies.

## North Crater Walk

Meeting Place:  
North Crater Parking Lot (#2 on park folder) 9:00 a.m. Sunday, Tuesday and Friday.

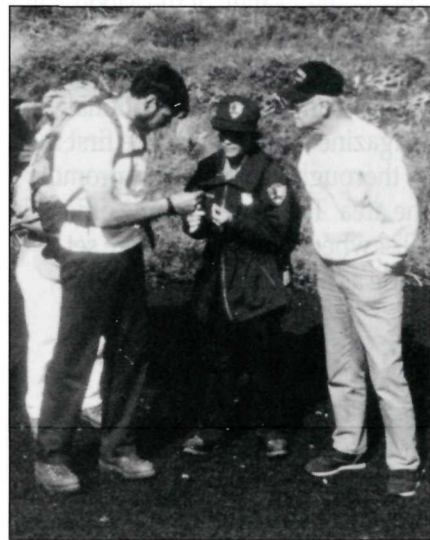
Climb the flank of North Crater for spectacular views of the pahoehoe and aa flows below. Then drop into the vent of the cinder cone and onto the North Crater lava flow. This hike is strenuous, with several steep up and down sections. Allow two hours for this 1.5 mile walk. (You may continue on to the Spatter Cones rather than returning to the parking lot if you choose).

## Buffalo Caves Walk

Meeting Place:  
Tree Molds Parking Area (#6 on park folder) 9:00 a.m. Monday, Thursday and Saturday

Enjoy the cool morning hours as you travel through a variety of plant communities on the way to Buffalo Caves. After exploring the cave, you will travel cross country on lava toes, pressure ridges, and even a "blue dragon".

Take along binoculars for wildlife viewing and a flashlight for the cave. Wear sturdy hiking shoes for the rough terrain, and remember to take appropriate precautions if it is a hot, sunny day. Allow two hours for this two mile walk.



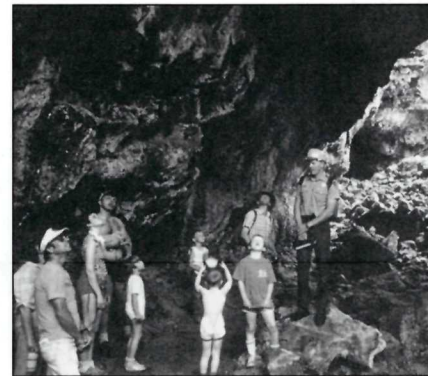
## Indian Tunnel Walk

Meeting Place:  
Caves Area Parking Lot (#7 on park folder) 11:00 a.m., 1:00 p.m., and 4:00 p.m. daily.

A paved trail leads through jumbled mounds of aa and ropy seas of pahoehoe lava. A half mile later, you leave the path to descend into the unique underground world of a lava tube.

Born of molten rock and flooding lava, these caves now offer cool temperatures, refreshing air currents, dripping moisture, and shelter from the hot sun.

A good flashlight is a must for the dark cave interior. Wear a hat to protect your head from both the sun and the sharp lava rocks. This walk requires some climbing and is no place for sandals or flimsy shoes. Allow 1-1/2 hours.



## Evening Program

Meeting Place:  
Campground amphitheater  
Every evening:  
9:30 p.m. June and July  
9:00 p.m. August and September

Cool temperatures, starlit skies, and a relaxing atmosphere—the ingredients for a perfect ending to your day at Craters of the Moon. Rangers present a different program each night, with topics ranging from volcanoes to wildlife. Check at the visitor center for further details.

Bring a sweater and carry a flashlight for the walk back to your campsite. Follow the lighted path in the campground to the amphitheater, and bring the whole family!

## Evening Stroll

Meeting Place:  
Campground Amphitheater  
7:00 p.m. daily.

Experience the Craters of the Moon landscape in the cool evening hours. This short but steep climb will lead you from the campground to a panoramic overlook of the North Crater Flow, North Crater, and the lava landscape to the south. Wear sturdy shoes and allow 45 minutes.

## FOR YOUR INFORMATION

### Camping

A 51 site campground is available for overnight camping. There are restrooms and water available, but no electric or water hookups or dump stations. Camping is on a self-registration system. Instructions for registering and payment of fees are located on the registration board at the entrance to the campground.

### Fires

All wood fires are prohibited within the monument. The only trees found in the area are the picturesque limber pine, which are important as a soil builder for plants and as a shelter for wildlife. They are sparse and slow growing. Help us to protect them. Grills have been provided at each campsite and charcoal is available at the visitor center.

### Rock Collecting

Everything in the monument is protected by law and is to be left unchanged for others to enjoy. Let photographs and memories be your only souvenirs.

### Off-Road Driving

No vehicles, including motorcycles and bicycles, are allowed to drive off the paved roads.

### Picnicking

Picnic tables are provided at the visitor center or you are welcome to use any unoccupied table in the campground. There are also a few tables at the Caves parking area.

### Drinking Water

Water is available only at the visitor center and the campground. If you are going to be in other areas of the monument for long periods or will be hiking, carry plenty of water.

### Waste Water

A service sink is available in the brick restroom at the campground. Please use this facility to wash dishes or dump dish water. The nearest RV dump station is in Arco.

### Backpacking

Eighty percent of the monument is designated wilderness and is accessible only on foot. If you wish to backpack into this area and stay overnight, you must first obtain a free Backcountry Use Permit. These permits and maps of the area are available at the visitor center. No permit is required for day trips.

### Services

Groceries, gas, and motel accommodations are not available at the monument. They can be obtained in Arco, 18 miles to the east or Carey, 24 miles to the west.

### Pets


Leashed pets are welcome on park roads and in the campground. Park regulations prohibit taking pets on trails or into the backcountry. Avoid leaving pets locked in vehicles, as heat can kill.

### Emergencies

If the visitor center is closed, contact any park ranger or go to the park housing area.

### Craters of the Moon Natural History Association, Inc.

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