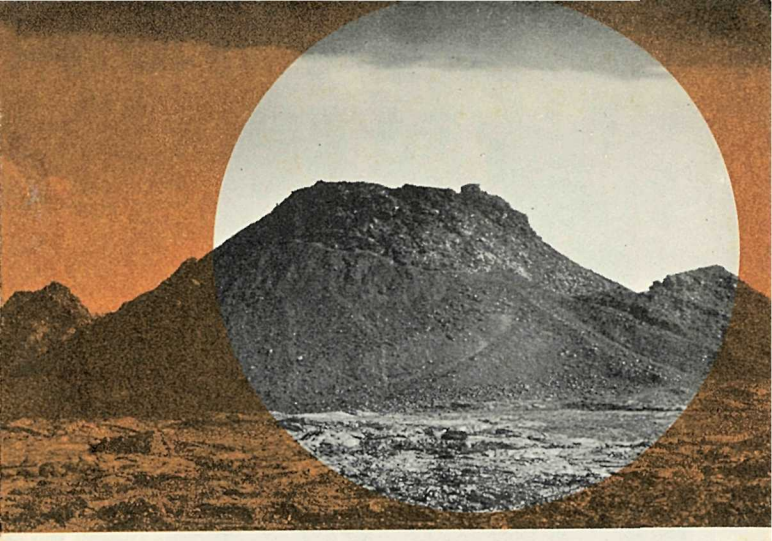
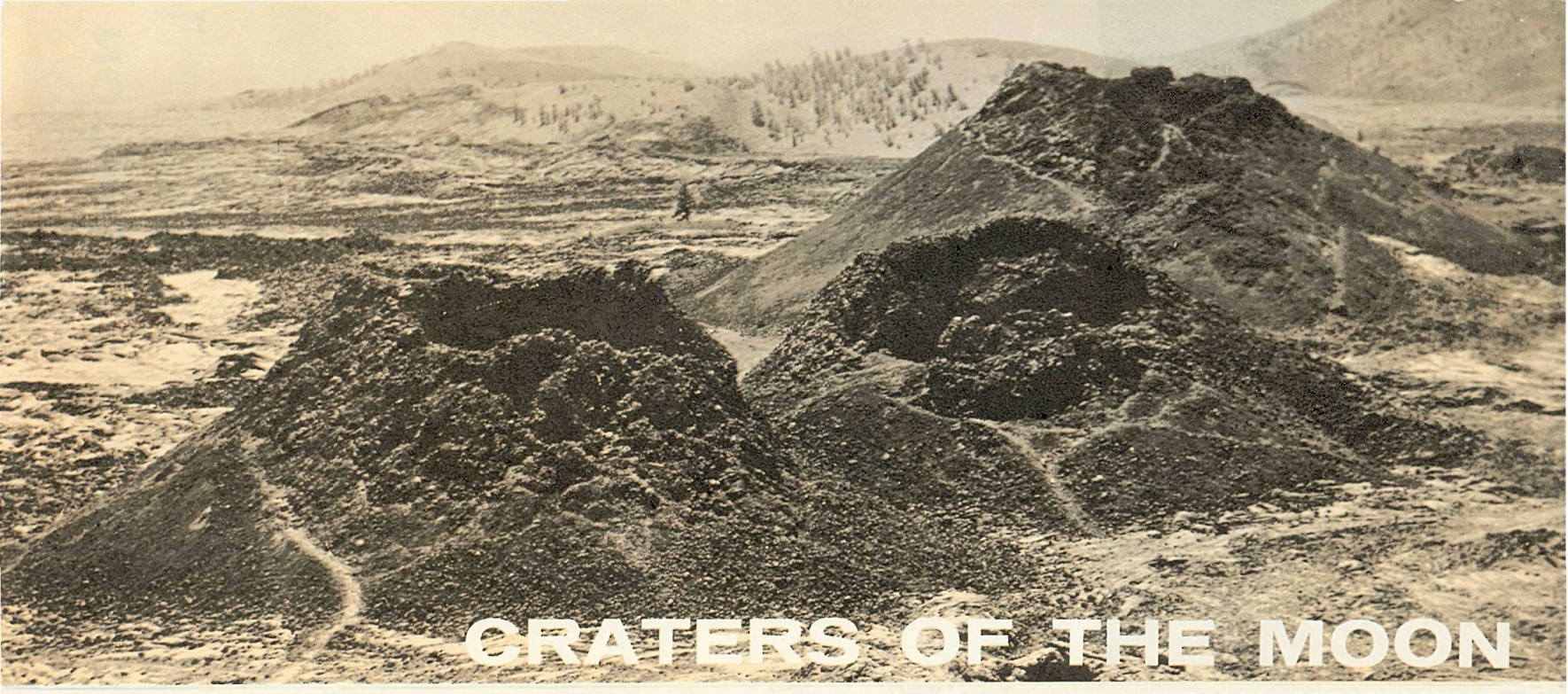


CRATERS OF THE MOON

NATIONAL MONUMENT • IDAHO



CRATERS OF THE MOON

NATIONAL MONUMENT

South central Idaho has one of the most astonishing landscapes in America. Vast lava fields are studded with cinder cones and form large central depressions that resemble the craters on the moon. Walking among the lava flows, you discover they have a variety of surface patterns and formations typical of basaltic lava the world over.

The lava floods destroyed all vegetation in their paths. Barren and sterile, they presented a harsh environment which at first only the hardiest plants could successfully invade. Today, you can see that many kinds of plants and animals have established themselves here.

Eighty-three square miles of this extraordinary volcanic region have been established as Craters of the Moon National Monument. Its features are readily accessible for your exploration, study, and enjoyment.

How was this landscape formed? For the answer we suggest you first stop at the visitor center. Then go outdoors to see and to read the meaning of the landscape along the roads and trails. Attend the naturalist activities that are provided for your greater understanding and appreciation of this outdoor museum.

THE 7-MILE LOOP DRIVE

To acquaint yourself with the park and typical examples of the volcanic landscapes, we recommend that you take the 7-mile loop drive and the sidetrips leading from it. Most of this drive is a one-way road through the more interesting places. Eight trailheads lead from the road or the end of the side roads to entice you to become an explorer on foot. You can make the drive, stopping to take several short walks, in about 1 hour.

The first stop along the drive is at NORTH CRATER FLOW. A short trail crosses the flow to a group of monoliths or crater wall fragments transported by lava flows. North Crater Flow is one of the youngest in the park. The Triple Twist Tree suggests that these eruptions, which occurred periodically over thousands of years, may have ceased only 2,000 years ago. Scientists counted 1,350 annual growth rings to the rotted heart of this veteran pine, which died in 1961. Since about 150 rings are missing, and another 500 years might be needed for ample soil to form for growth of the seed, the lava last flowed sometime around the first century. In another recent flow on Trench Mortar Flat, charcoal taken from the roots of a tree buried by lava was Carbon-14 dated to 160 B.C.

It may surprise you that more than 200 species of plants are native to this seemingly desolate area. Big sagebrush, antelope bitterbrush, and rubber rabbitbrush dominate the older flows, while mockorange and tansybush fill the deeper crevices on the younger flows.

Some fine examples of ropy pahoehoe lava may be seen on the North Crater Flow. When active, the lava is about 2500° F. and soon forms a crust or scum as it cools. This surface is wrinkled as the molten material continues to flow underneath. Generally pahoehoe has a smooth, billowy, or ropy surface but it presents a variety of configurations, including twists, folds, pleats, bumps, and holes. Where lava drained away beneath a lava surface, pit craters or sinks were formed.

At the edge of the North Crater Flow is a series of aa lava flows. Unlike the pahoehoe, this lava is clinkery and extremely rough. It is broken into irregularly shaped blocks with jagged corners and sharp spines. A flow similar to this possibly carried the crater wall fragments from North Crater.

From this point the road skirts the edge of Paisley Cone. On the opposite side is Devils Orchard, a group of lava fragments from a crater wall. The fragments mark the possible vent of an ancient cinder cone. A short spur road leads to a self-guiding trail through these weird features. The cinders are hardened lava froth, not the burnt remains of other material. The cinders form by the expansion of gases within the rising magma (molten rock). Shot into the air as fire fountains, the frothy lava cools and solidifies into cinders that fall around the vent, building symmetrical, graceful cones.

Bombs of lava are scattered about the cinder slopes. These curious objects were formed from ejected blobs of less frothy lava that range in diameter from a quarter of an inch to several feet. The blobs hardened sufficiently while in the air to retain a globular or spindle shape. Some of them had long slender tails that generally broke off, forming ribbon bombs.

In spring, wildflower displays are spectacular in the cinder gardens. Silvery pads of leaves of dwarf eriogonum (dwarf buckwheat), topped with yellow or pink pompom flowers, dominate the open cinder slopes. Dwarf monkeyflowers mat the ground in June and early July and add a magenta cast to wide areas of cinder.

The view from INFERNO CONE VIEWPOINT encompasses the distant mountain ranges and volcanic landscape of cinder cones. Some cones have more vegetation on their slopes than others. The cool, moist north slopes generally harbor a sparse limber pine forest and occasionally Douglas-fir, while the more open slopes have less plant-life.

A short but steep climb to the summit of Inferno Cone offers a fine view of the cinder cone chain along the Great Rift. In the distance, towering 800 feet above the lava plain, is Big Cinder Butte, one of the largest purely basaltic cinder cones in the world. It is easy to see that the volcanic activity centered along this Great Rift, a weakened zone of fissures or cracks in the earth's crust extending northwest-southeast through the park.

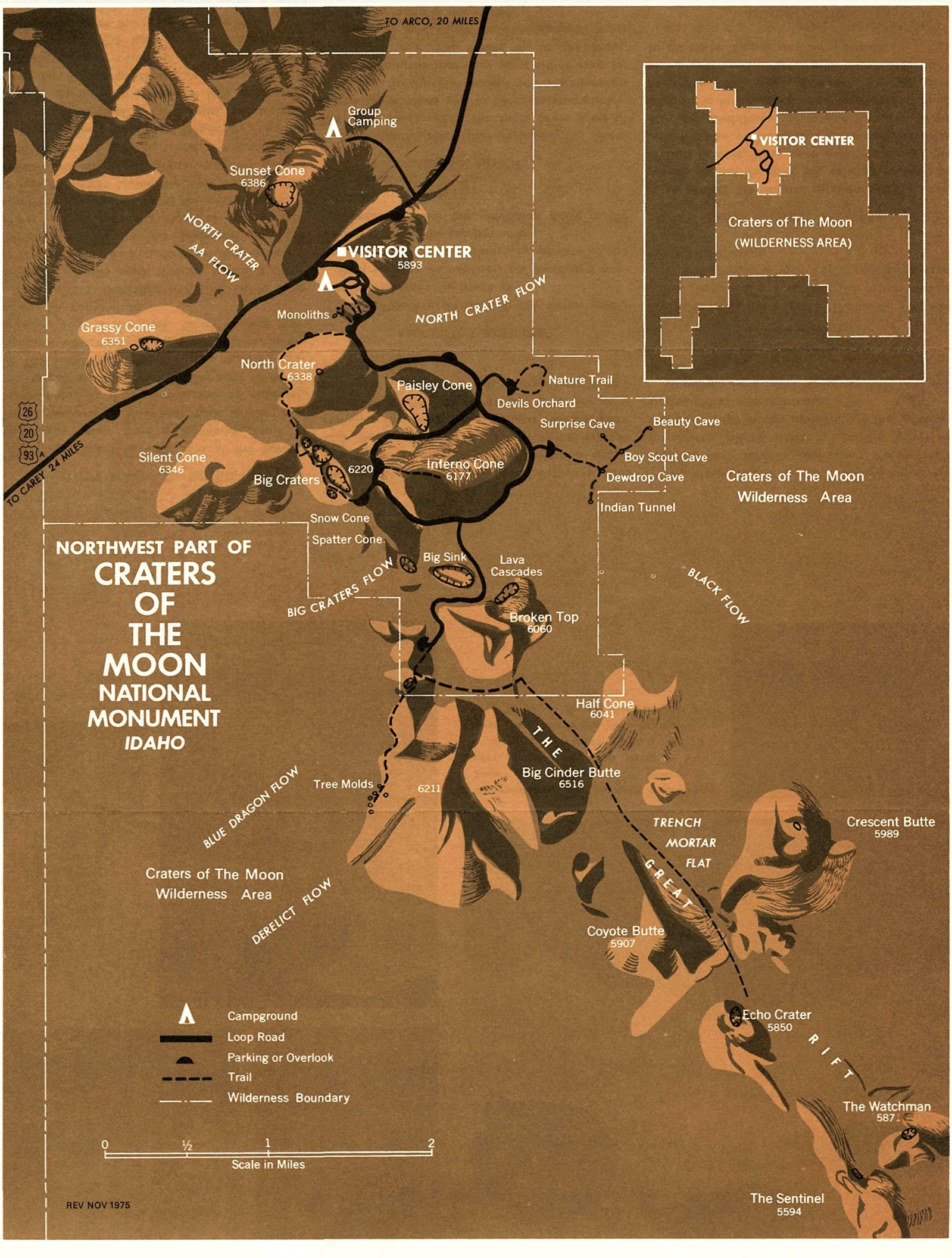
A short distance from Inferno Cone is the BIG CRATERS—SPATTER CONE AREA. Spatter cones formed along the fissure where clots of pasty lava stuck together when they fell. It is not difficult to imagine molten, gas-charged rock under pressure, moving upward along a fissure and spewing out upon the surface as lava. The material and the forces of such eruptions originate at depths of 20 to 30 miles.

The drive continues around the east slope of Inferno Cone to a spur leading to trails for the Tree Molds Area and Craters of the Moon Wilderness Area. On either side of the road are unusual formations of pahoehoe lava, including one place where the molten rock poured from a large flow to form a lava cascade.

A roadcut at BROKEN TOP reveals numerous cinder layers indicating that eruptions took place at intervals, while soil layers suggest long lapses occurred between these eruptions.

From the loop drive, limber pine appears to be the only tree, but some juniper, aspen, and Douglas-fir are also present.

The next point of interest along the drive is the CAVE AREA. Take the easy ½-mile walk to the lava tubes and discover how they formed. The lava tubes are beneath a large dome produced by nonviolent flows from a fissure opening, possibly near the Indian Tunnel lava tube.



NORTHWEST PART OF
CRATERS OF THE MOON NATIONAL MONUMENT
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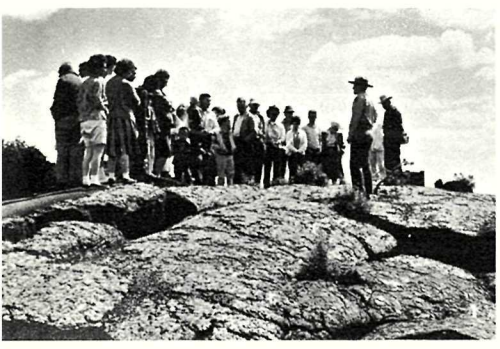
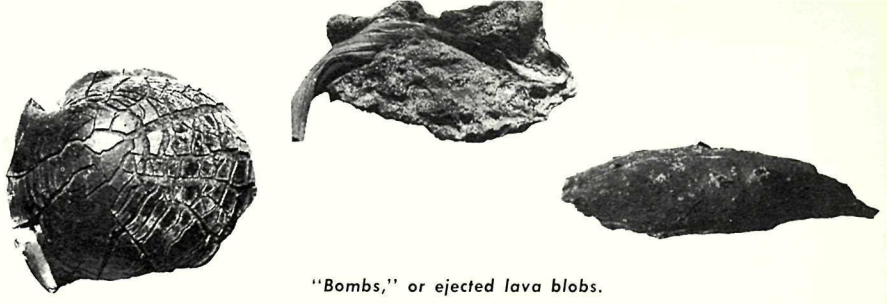
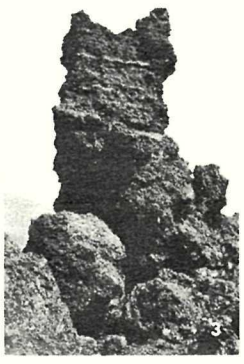
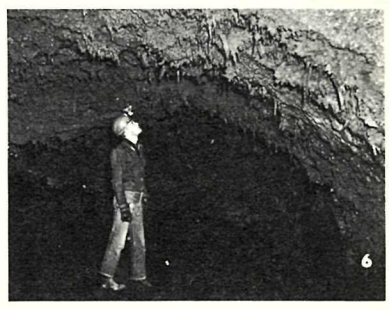




"Bombs," or ejected lava blobs.



1 Naturalist trips are conducted in summer. 2 Some lava wrinkled as it flowed. 3 Eroded remnants of crater walls. 4 Outline of a tree enveloped by lava. 5 Fragmented lava dominates this approach to Spatter Cones. 6 An explorer examines the prickly ceiling of a lava tube.



OTHER PLACES OF INTEREST

You may want to walk one of the several trails that range from a 20-minute walk in Devils Orchard to a 2-hour hike to the Tree Molds area. Or if you are a veteran explorer, you might be interested in the vast CRATERS OF THE MOON WILDERNESS area, a part of the National Wilderness Preservation System, in the southern end of the park. Check with a park ranger for suggestions.

THE DEVILS ORCHARD NATURE TRAIL is a delightful ⅓-mile walk through a weird array of cinder fields and crater-wall fragments. A folder, available at the trailhead and the visitor center, tells the story of animal and plant communities. Some of the small mammals to look for while hiking the park trails are the yellow-pine chipmunk, golden-mantled ground squirrel, red squirrel, and yellow-bellied marmot. Other animals less frequently seen are the mule deer (look for his trails), coyote, and bobcat. In early morning or late afternoon, listen for the songs of the rock wren, Clark's nutcracker, and mourning dove. The brilliant mountain bluebird and acrobatic violet-green swallow frequent the area during midday.

THE TREE MOLDS TRAIL covers about 2 miles and requires around 2 hours to complete. It was here that a pahoehoe flow slowly enveloped a group of living trees. The lava cooled and hardened sufficiently upon contact with the moist wood to form tree molds. Smooth-sided vertical molds mark the location of ancient tree trunks, and horizontal charred wood molds indicate where burning treetops fell.

The trail along the GREAT RIFT leads to TRENCH MORTAR, ECHO CRATER, and the vast expanse of the Craters of the Moon Wilderness.

AT THE CAVE AREA a short trail crosses a pahoehoe flow to a series of lava tubes or caves, the largest of which is the 830-foot-long Indian Tunnel. This cave marks a *shield*, the domelike bulge of lava that covers the source of lava flow. The surface of a pahoehoe flow may harden while the lava continues to flow beneath it in a self-made tube. When the eruption diminishes, the lava may drain out of the tube, leaving a cave. Entrance to the smaller caves—Beauty, Surprise, Dewdrop, and Boy Scout—is difficult, and a lantern is necessary. Boy Scout Cave has a floor of ice, even in summer. This natural icebox was formed when rain and melting snow seeped into the cave and was cooled to a subfreezing temperature by long winters.

NATURALIST ACTIVITIES

Naturalists are on duty in the visitor center and along trails to assist you.

Each evening in summer, an illustrated program on the geology, plants, or wildlife of the park is given at the campground.

Conducted hikes are scheduled daily in the summer.

HUMAN HISTORY

An ancient Indian trail followed the Great Rift, and caves along the route were used as temporary shelters and at times as strongholds. At Indian Tunnel the semicircular arrangements of stone indicate that they were either used for protection from the winds or as firebreaks. Arrowheads and other stone implements were previously found in this vicinity.

The lava fields in general and the rugged area of Craters of the Moon in particular have been barriers to westward migration and to local settlement. All early travelers avoided crossing the rougher areas. The old wagon road from Arco to Carey, which skirted the lava flows, was 76 miles long. Today's route, crossing some of the most rugged parts of these flows, is only 43 miles long. Since the National Monument was established in 1924, thousands of people have come from all parts of the world to enjoy and study this once-shunned place.

FACILITIES

A campground a short distance from the park entrance is open from May to September. It has fireplaces, tables, drinking water, and flush toilets. No wood fires are permitted. Campsites cannot be reserved. An additional fee is charged for overnight camping.

The visitor center, which is open year round, contains fine exhibits explaining the volcanic formations, plants, animals, and the history of the park. Also in this building are the administrative offices and restrooms.

Gasoline, food, and souvenirs are *not* sold in the park.

YOUR SAFETY

Efforts have been made to provide for your safety, but there are still hazards which require your alertness and vigilance. Exercise common sense and caution.

HELP PRESERVE THE PARK

To protect the natural condition of the park, please do not damage the volcanic features or disturb flowers, trees, and rocks, or molest the wildlife. Use of firearms is not permitted. Drive only on established roads and turnouts. Camp and picnic in the established campground. *Help keep the park clean.* Pets are allowed, provided you keep them under physical restraint at all times. *Please stay on the trails.*

ADMINISTRATION

Craters of the Moon National Monument, 18 miles southwest of Arco on U.S. 20, 26, and 93A, is administered by the National Park Service, U.S. Department of the Interior. A superintendent, whose address is Box 29, Arco, ID 83213, is in immediate charge.

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

National Park Service
U.S. DEPARTMENT OF THE INTERIOR

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A frozen river of lava near Spatter Cones.