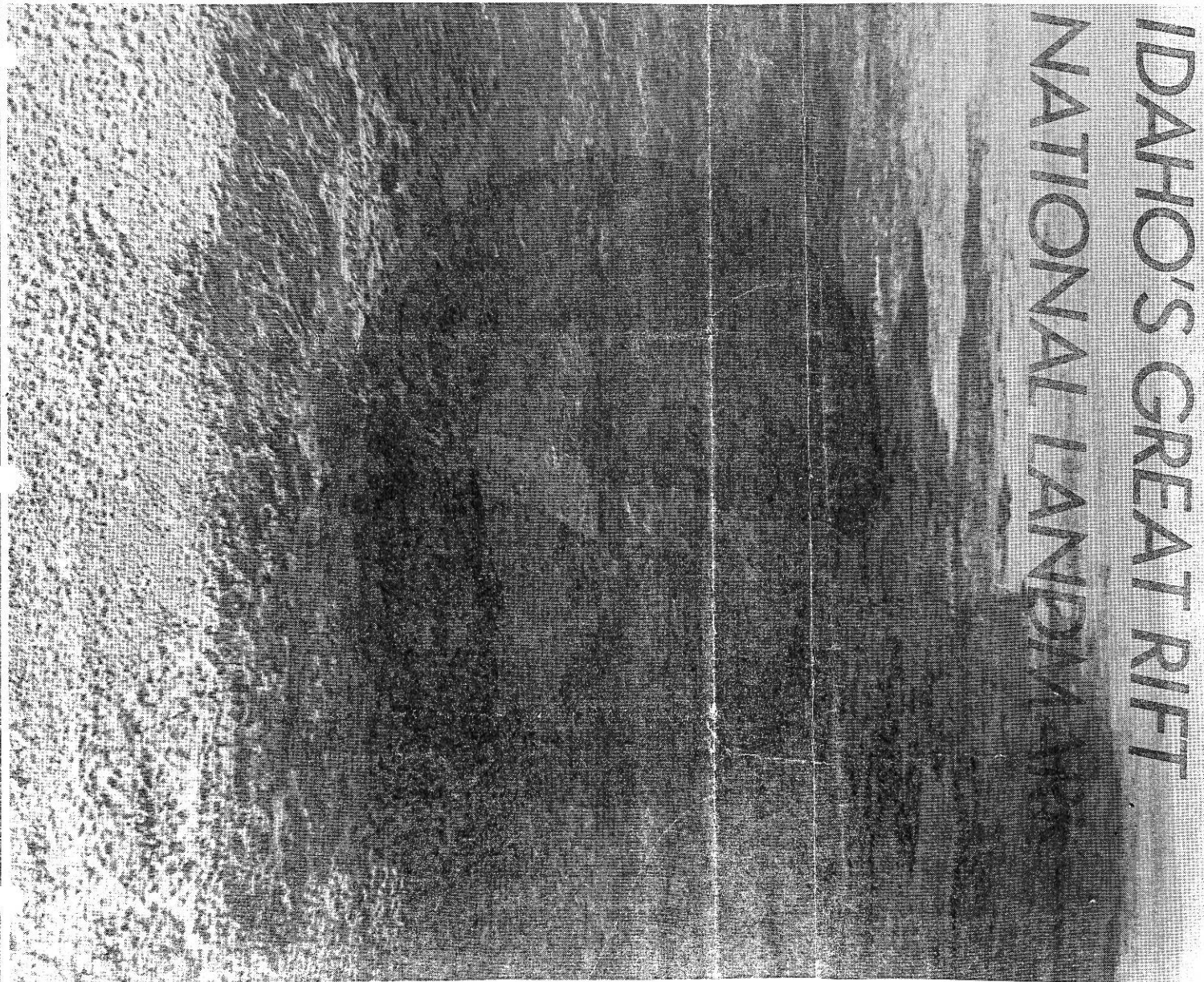


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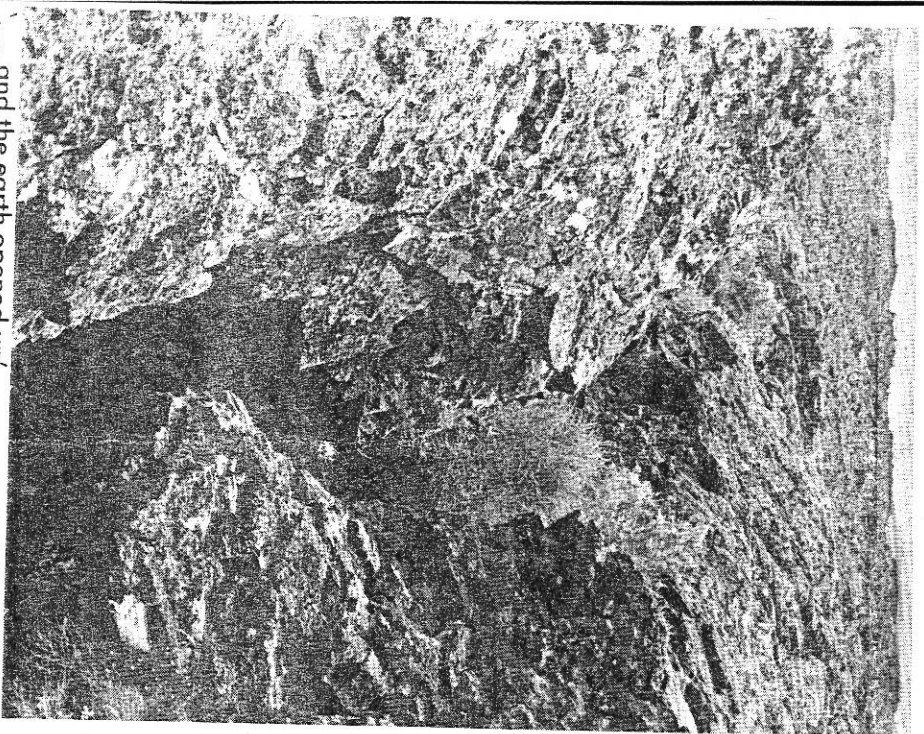
magazine

IDAHO'S GREAT RIFT NATIONAL LANDMARK



GREAT RIFT

'Geologists tell us that once a volcano has erupted it can occur again. It has been over 2,000 years since the rift's eruption, and should it occur again, more than likely a new rift would form alongside the present one. Most believe this possibility would not occur for a few thousand years.'



By PEGGY PAPADAKIS
Journal Correspondent

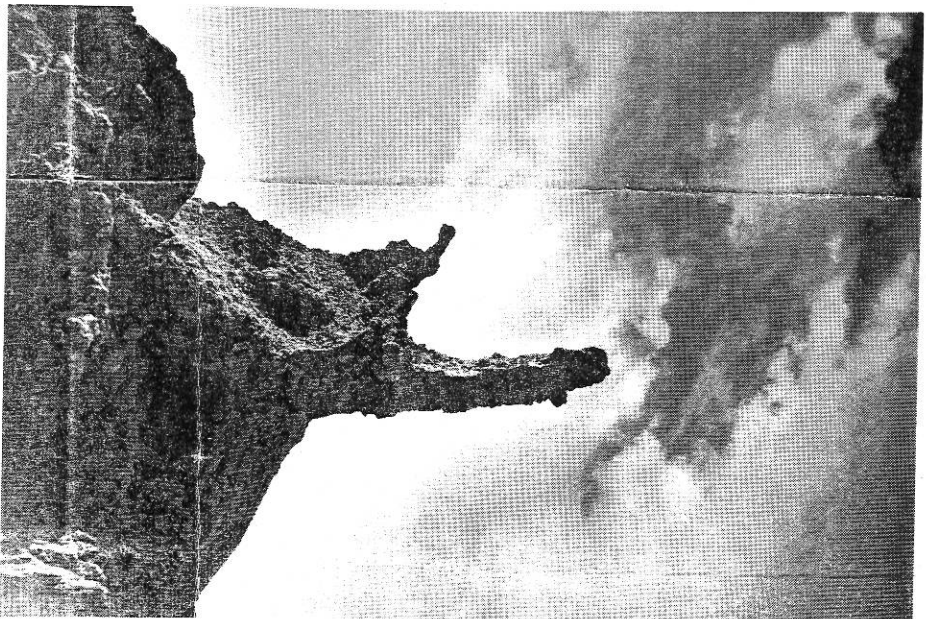
Cutting through the brush-covered desert of southeastern Idaho is the Great Rift National Monument. A 40-mile-long, 10-mile-wide, serpentine volcanic fissure stretches southward from the Craters of the Moon Lava Field to the edge of the Great Rift. The rift is a series of small, interconnected cracks that seem to disappear under the more recent flows of the Wapi. The Wapi is located about 20 miles west of Highway 39 between Aberdeen and American Falls.

The Great Rift is actually what its name implies: From the air it takes on the appearance of one huge crack, but it is actually a zone of cracks running together. It came into existence about 2,100 years ago when a tremendous pressure within the earth caused the crust to split. Molten lava surged up from the depths (30-40 miles below the surface) and flowed over the surface not once, but several times. When the volcanic eruptions ceased and the lava receded for the last time, the top of the rift crusted over and the molten lava inside began to sink back into the earth. The entire awesome procedure took place within the space of a few days.

The Great Rift is located on the Snake River Plain, an area of about 20,000 square miles which was built up entirely from lava flows. Beneath this virtually uninhabited portion of Idaho moves one of the great underground water flows of the world — the Snake River aquifer. When the lava subsided to the water table level, about 800 feet, the cool underground water began encroaching upon the 2,000 degree Fahrenheit lava. Enormous quantities of steam formed and as the pressure increased some violent steam jets probably started to blow along the length of the rift. The ground shook, rocks flew, and finally the internal pressure became too great to be contained and the rift blew apart. Portions of it were blown open with such force that massive chunks of lava weighing up to ten tons were hurled into the air and then fell back to earth, landing on top of the almost-cooled lava beds.

One of the most awesome creations of the dying rift's violence is a gigantic explosion pit named the King's Bowl located in the Crystal Ice Cave Lava Field, a tiny one-and-one-half square mile area surrounded by the vast fields of the Wapi and the Craters of the Moon. Each of these fields are as distinctly individualistic as a person in appearance and personality. The King's

and the earth opened up'



Stark beauty in stone

... a rift-type eruption is extremely rare, has happened only once in recorded history, without ice, fissure caves are extremely rare, commented one VASA geologist.

Bowl measures 80 feet wide and over 200 feet deep. From the air it appears as a gaping wound in the rift. From the ground it is a huge pit containing some rubble from a crystal-clear pool of water at the bottom, which maintains a constant ice floor. This pool is the only perennially accessible water supply for miles and wildlife is frequently seen, hawks, prairie falcons, and the Great Horned Owl as among the birds which fear their young in the sheer lava walls of the bowl.

Among the many outcrops contained in the Great Rift National landmark are the spectacular columns of ice formations located 160 feet underground at the Crystal Ice Cave (see page 14). The cave is 40 feet high and 370 feet long, air was formed when the rift was in the final stages of erupting. Over the centuries, moisture from desert rains and winter snows has seeped through tiny fissures in the lava to drip constantly into the cave. The 32 degree air trapped in the cave, and the water seeping in, form a combination which creates the ice. (See "On our feet," page 3.)

The Great Rift is reputed to be the deepest, open volcanic rift in the world. Cave explorers have penetrated the open portions to a depth of a time 300 feet where they were

stopped by an ice floor. The rift is a zone but is an active rifting of

it could be pushed back together places where it would fit the. A fault is slippage of the earth. An example of this is California's San Fault. Geologists measure the fault with delicate instruments and can much slippage occurs each year. A the fault travels the opposite direction.

Dr. Fred M. Juchacz of the United States (Austin) says that a rift is extremely rare and has only once in recorded history.

No living person has observed an eruption. "Even without fire, these are extremely rare," commented geologist. Scientists from around the world are constantly studying the area learn more about the earth. The rift is a Carbon-14 dating. Volume studies of sequence of flows, etc., tell us that once a volcano has been can occur again. It has been over 2, since the rift's eruption, and should again more. "Likely a new rift will arise," present day. However, believe this possibility would lead a

few thousand more years.

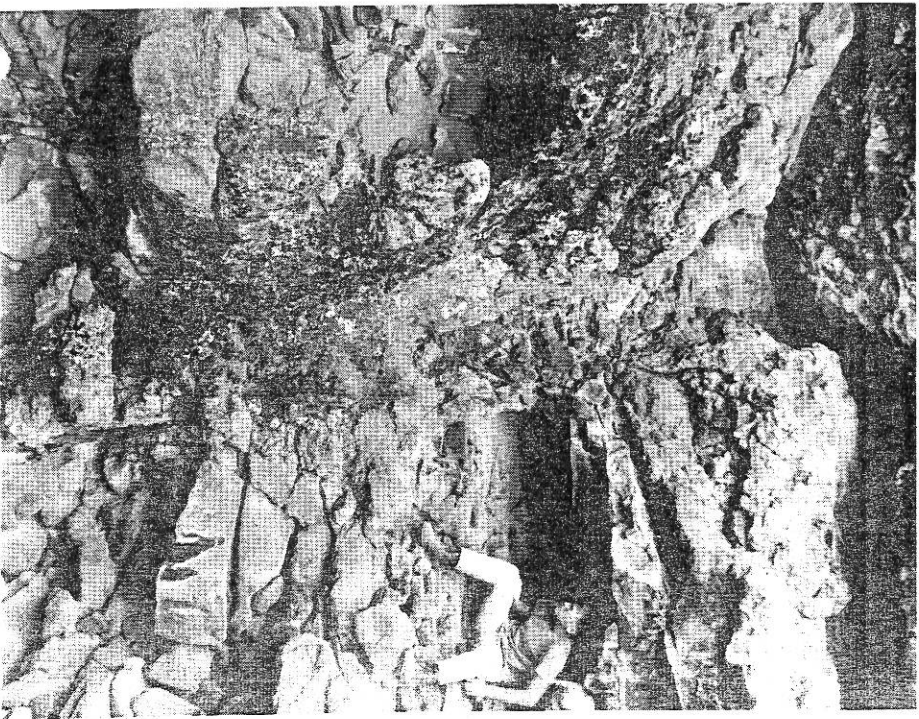
Though the surrounding areas have long been settled, the Great Rift National Landmark is almost as much of a mystery as it was to those who first viewed it with awe. Birch Creek and the Big and Little Lost Rivers sink out of sight into a lava formation in the northeastern portion of the Snake River Plain and remain hidden (some believe) in the form of the Thousand Springs which gush from lava cliffs near Hagerman, Idaho, some 100 miles to the south.

The entire area is a paradox for in the rich volcanic soil of the plain some of the finest crops in the world are grown on well-irrigated farms which are fertilized with deep-well water from the great underground aquifer, yet more miles away the unyielding desert takes over producing nothing but the toughest brush and primitive plants. Va-

for appears to be non-existent, but suddenly appears in the form of cool, bubbling springs pouring from barren rock cliffs. Lava outcroppings cover the land, breaking farm and construction equipment and wearing the patience of men who try to lay foundations for progress.

In the desert, sheepherders combine their forces to roll huge boulders overmuch-acting lava springs so no more of their sheep will disappear, and the flows are carefully charted for the sake of human and men — but most of the charting has been by guesswork for no one can penetrate the secret underworld of the lavas.

In 1968, because of its uniqueness, U.S. Secretary of the Interior Stewart Udall designated it an area to be recognized and protected, making it Idaho's first national landmark.



Late flow inside rift chasm

By PETER B. MAUPIN
ENJOY magazine Editor

Two area spelunkers (cave explorers), Perry Fast-maker, an Aberdeen teacher, and Dave Forsich, an Idaho State University geology student, discovered the cave now known as Crystal Ice Cave by accident in 1956 when Forsich dropped a flashlight and it disappeared down a hole. Going after it, Forsich slid down an icy incline into the blackness of the cave. Once he stopped he located his flashlight and was astounded by the huge formations of ice all around him. The two explored the cavern as well as possible with flashlights and carbide lamps, then returned home to tell stories of pillars of ice in the desert to unbelieving friends. Chagrined, they dubbed their own "1,1a's Cave."

For the next six years only the hardy climbed down the rugged abyss on a 150-foot rope to view the awesome crystal columns. In 1961, Jim Papadakis, who had developed Caverns of Sonora in Texas, was vacationing in the area and persuaded a local speleothem to show him the cave. Due partly to his previous success and partly to his vision of what is now called Crystal Ice Cave, Papadakis secured permission of the Bureau of Land Management to begin work as a concessionaire on opening the caves to public view.

Blasting the narrow, winding, 1,200-foot tunnel which curves around then parallels the rift's most spectacular ice caverns 160 feet underground took Papadakis two years.

Now, an average of 10,000 persons a year visit the cave. In 1972 alone, visitors have come from every state except Delaware, and every Canadian province except Nova Scotia. Over the years every major continent of the world has been represented.

The King's Bowl area, a few hundred yards south of the cave entrance also has a tunnel, but it is now unused due to a lack of funds for maintenance and development. Papadakis says he hopes eventually to excavate a 1,000 foot stretch of rock that would connect the Crystal Ice Cave tunnel with that of King's Bowl and open up at least two more chambers he believes hold the equal of the spectacular formations in the first.

A joiefort of many persons persuaded the Department of the Interior that the Great Rift should be protected from vandalism and further exploitation, so in 1966 the U.S. Secretary of the Interior designated the rift a national landmark. The BLM formal ceremony was held June, 1971, and a bronze plaque was mounted on a huge volcanic boulder near the entrance proclaiming it a registered national landmark because "it . . . possesses exceptional value in illustrating the natural history of the United States."

The Cistula Ice Cave is the focus for the rift. It is one of a few fissure caves known in the world, and is the only one open to the public. Ice formations in the constant 32-degree temperature are estimated to be 300–500 years old and still growing. The cave is the only spot along the 45-mile rift where the geology may be easily viewed. Tour guides, in addition to pointing out the geology of the eruptions, also note carbonized plant root systems which enabled dating of the rift's late eruptions at 2,143 years ago plus or minus 100 years.

The Great Rift and the nearby Craters of the Moon National Monument received nationwide publicity in 1969 when geologists and astronauts of the National Aeronautics and Space Administration toured the area to familiarize themselves with an area they believed was similar to the surface of the moon.

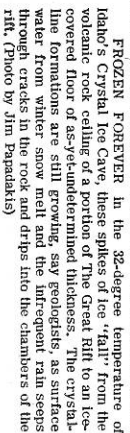
Moves to designate the Great Rift as an addition to Craters of the Moon National Monument have so far been unsuccessful, although supported Papadakis as well as by some in the National Park Service which administers the monument.

The Crystal Ice Cave is reached by a 22-mile country road, most of which is gravel, which leaves State Highway 39 about six miles north of American Falls. The cave is open from 7 a.m. to sunset from May 1 to Nov. 1, and admission is \$1.50 for adults, 75 cents children 6-12, \$1 adults in groups of 10 or more, children 50 cents.

For the hardy in a high-centered vehicle, a connecting road leaves the cave area and goes to the old Mindoka-Aroostroge road, now called simply "desert road." There are no facilities of any kind for the 30 miles to Mindoka, but the road also passes undeveloped Beartrap Cave which may be explored.

Today's cover photo shows an aerial view of Idaho's Great Rift looking south from the Centric area to the spike of Pilar Butte and the Wapi Lava Field in the distance. The rift itself is clearly visible, along with the bountaries of the lava flow which oozed out of the fissure. Crystal Ice Cave is slightly above the middle of the photo.

In the center spread, a photo looking north from King's Bowl shows the six-foot crack in the surface of the earth that was left open when the lava flowed about 2,000 years ago. (The crack was filled in by lava that oozed out of the hole.) Another photo in the center area shows the beauty a stark lava field can have, pictured against a background of snow-capped mountains. The third photo shows Bruce looking into the depths of the Abyssal Pit in the North Exposure Area. The lava that extruded from this vent is still visible on the surface of the rock is then fractured. After having spread over the ground just above Bruce's head, it was covered by yet another lava flow from a nearby portion of the rift that was still active. (All photos except King's Bowl crack were taken by John Papadakis.)



waits Rift visitors

If you've wondered what The Great Rift area around Crystal Ice Cave looks like, here's an aerial artist's-eye view and a distance scale to match.

Not shown on this map is a desert road which leaves the Ice cave area and swings across the rift's lava field just north of the cave's commercial area. This road, best traveled in a high centered vehicle due to ruts and rocks, meanders westward, past other, less spectacular, caves, then joins the old Minidoka-Aroo stage road going north and south.

Exploring in the Crystal Ice Caves Lava Field is encouraged, but should be done with a friend, in case of trouble with tough hiking shoes, not sneakers or street wear; in the early morning or late afternoon, not in the heat of the day; after registering at the Ice cave headquarters giving time of departure and expected return; and with the knowledge one must take nothing but pictures and leave nothing but footprints.

