A DESCRIPTIVE SURVEY OF POTENTIAL DESERT PARKLAND AREAS ALONG THE GREAT RIFT ZONE OF SOUTHEASTERN IDAHO

Compiled by

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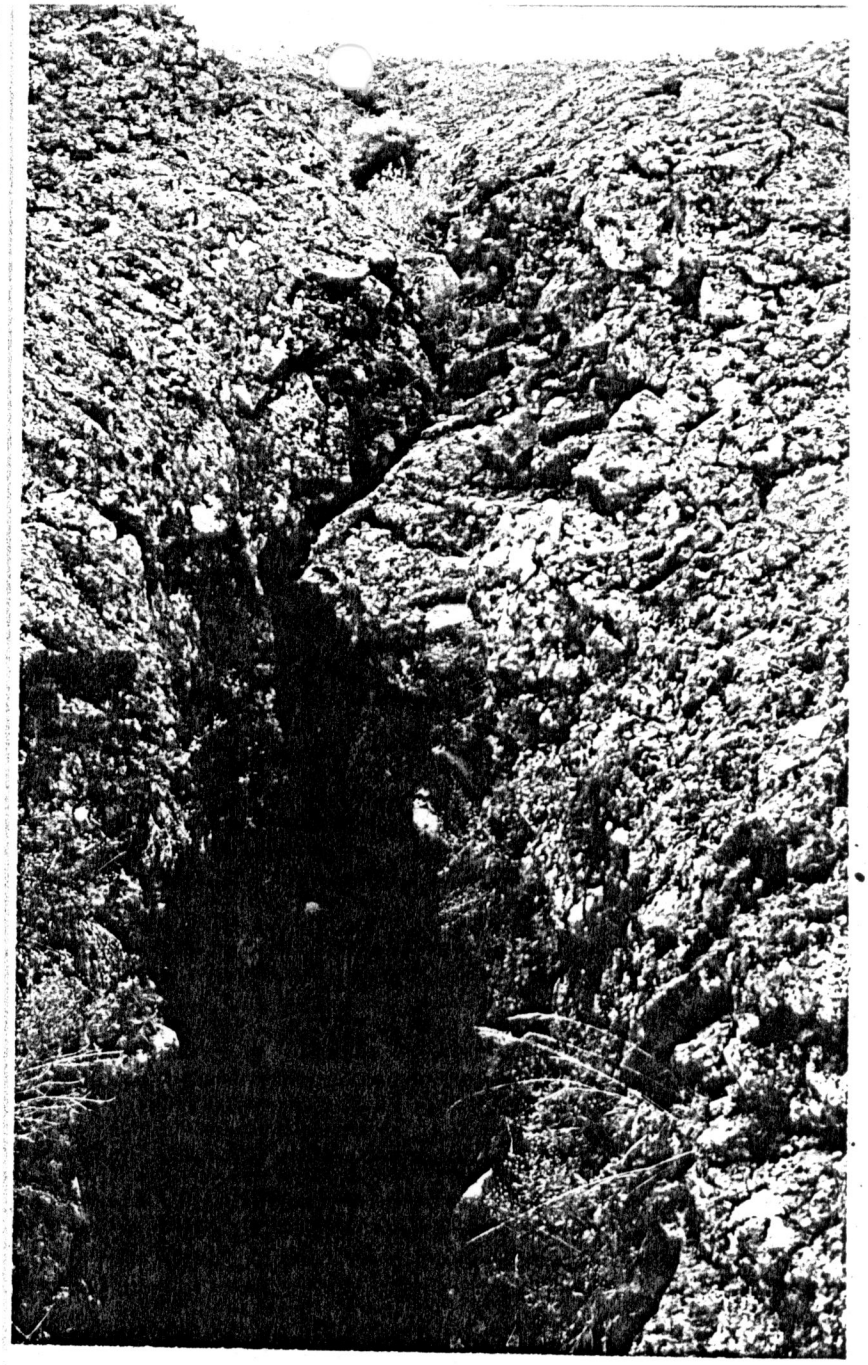
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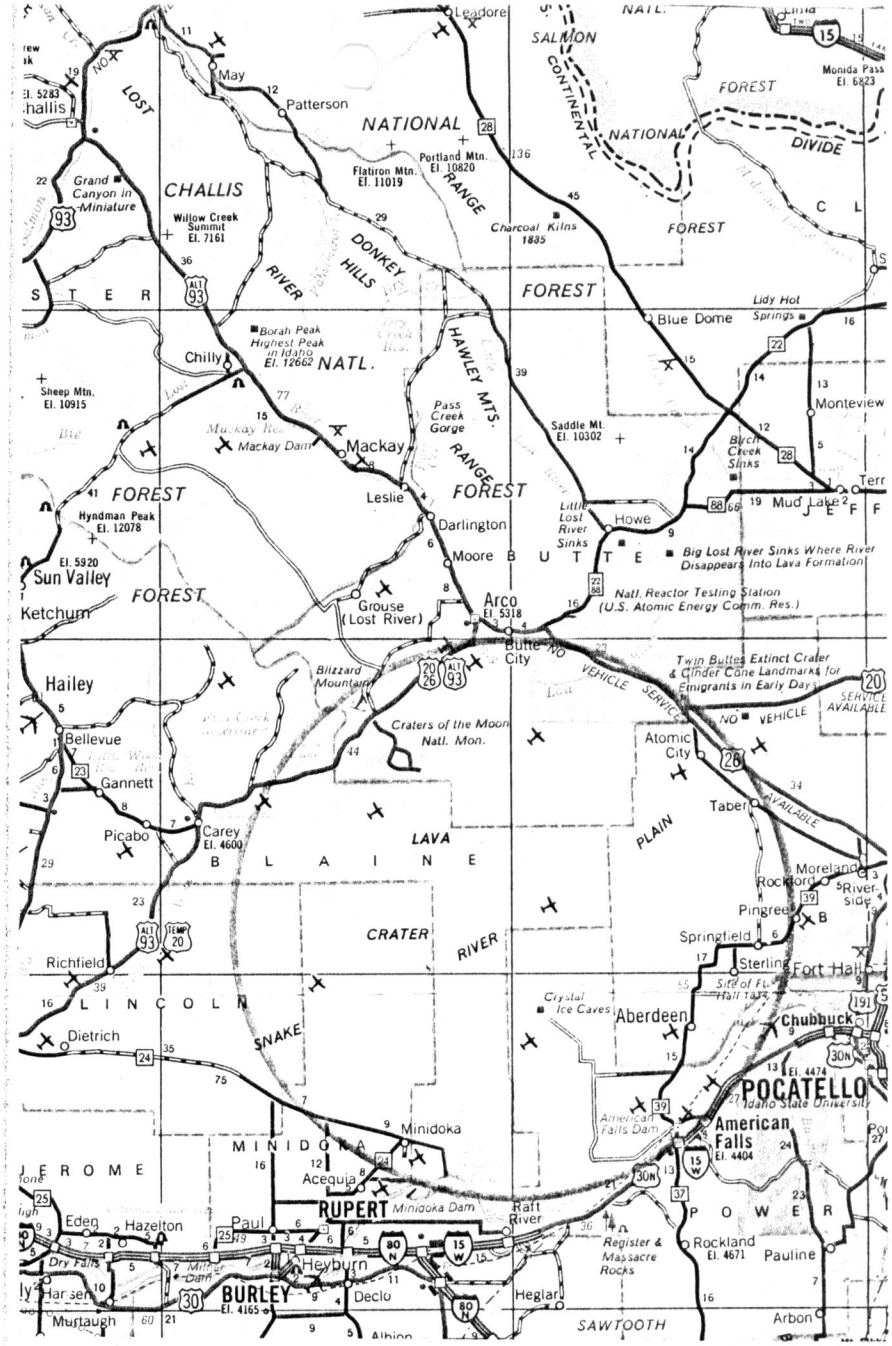
Dave Schnute

August 23-31, 1971



PURPOSE

The purpose of this survey is to provide general descriptions of potential park-land areas along the Great Rift Zone.

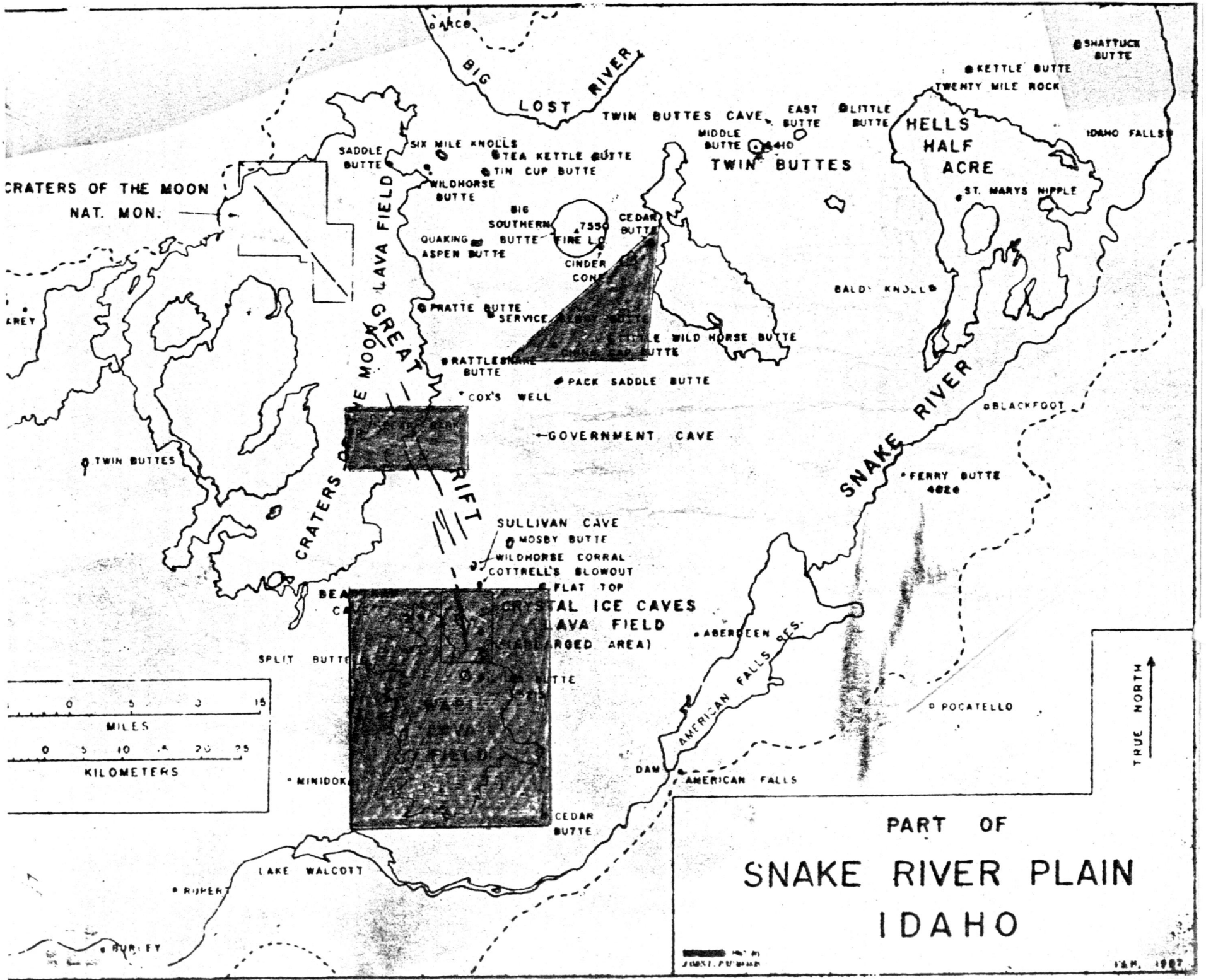


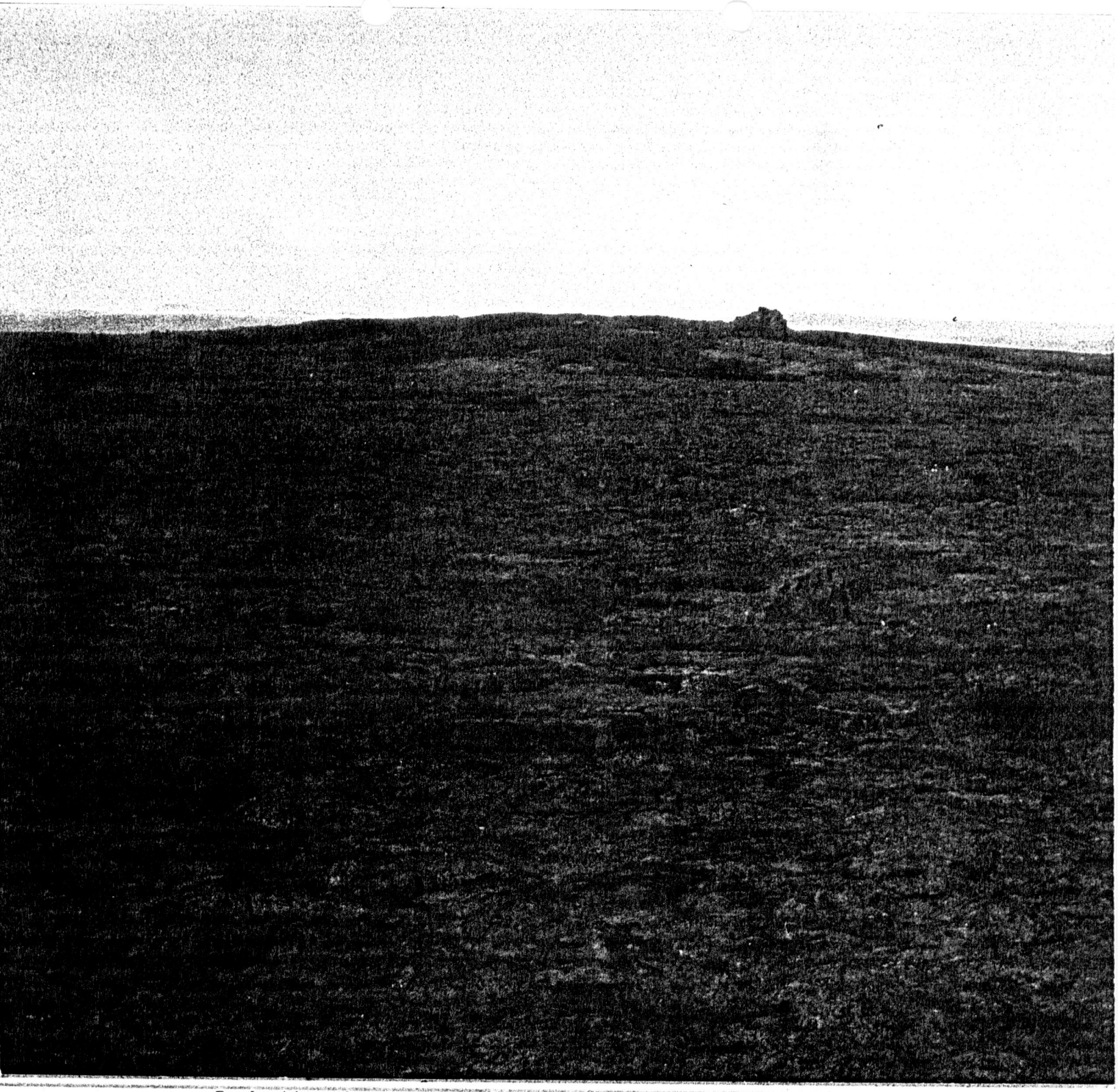
AREAS

I. WAPI LAVA FIELD and ADJACENT AREAS
   - A. Crystal Ice Cave Lava Flow
   - B. Wapi Lava Field
   - C. Split Butte
   - D. Bear Trap Cave

II. BEAR PARK SECTION/ CRATERS OF THE MOON LAVA FLOW
   - A. Bear Park
   - B. Southern Section, Craters of the Moon Lava Flow

III. CONES SURROUNDING BIG SOUTHERN BUTTE
   - A. China Cup Butte
   - B. Little Wildhorse Butte
   - C. Cedar Butte


ARCO
BIG LOST RIVER
TWIN BUTTES CAVE
EAST BUTTE
LITTLE BUTTE
SHATTUCK BUTTE
KETTLE BUTTE
TWENTY MILE ROCK
HELLS HALF ACRE
IDAHO FALLS
MIDDLE BUTTE
6410
TWIN BUTTES
SADDLE BUTTE
SIX MILE KNOLLS
TEA KETTLE BUTTE
TIN CUP BUTTE
WILDHORSE BUTTE
CRATERS OF THE MOON NAT. MON.
BIG SOUTHERN BUTTE
7550
FIRE LO
CEDAR BUTTE
QUAKING ASPEN BUTTE
CINDER CONE
ST. MARYS NIPPLE
BALDY KNOLL
PRATTE BUTTE
SERVICE BERRY BUTTE
LITTLE WILD HORSE BUTTE
CHINA CAP BUTTE
RATTLESNAKE BUTTE
PACK SADDLE BUTTE
COX'S WELL
GREAT RIFT
CRATERS OF THE MOON LAVA FIELD
GOVERNMENT CAVE
SNAKE RIVER
BLACKFOOT
TWIN BUTTES
FERRY BUTTE
4824
SULLIVAN CAVE
MOSBY BUTTE
WILDHORSE CORRAL
COTTRELL'S BLOWOUT
FLAT TOP
CRYSTAL ICE CAVES
LAVA FIELD
ENLARGED AREA)
ABERDEEN
SPLIT BUTTE
AMERICAN FALLS RES.
POCATELLO
MILES
KILOMETERS
TRUE NORTH
MINIDOKA
DAM
AMERICAN FALLS
CEDAR BUTTE
LAKE WALCOTT
RUPERT
BURLEY
PART OF
SNAKE RIVER PLAIN
IDAHO



Dominating the Wapi Lava Field, Pillar Butte is a prominent landmark in Southeastern Idaho.

A R E A I

WAPI LAVA FIELD AND ADJACENT AREAS

A. Crystal Ice Cave Lava Flow
B. Wapi Lava Field
C. Split Butte
D. Bear Trap Cave

A. CRYSTAL ICE CAVES LAVA FLOW

Section 32 T5S R28E

Geological Description (adapted from Crystal Ice Caves publication by Jim Papadakis):

"This tiny (1½ sq. mi.) lava field contains a surprising variety of volcanic features, only a few of which will be mentioned here. Many of the more interesting and prominent features are named. The Great Rift bisects the field and disappears under the north edge of the Wapi Field. A secondary system of fissures occurs about 1700 feet on each side of the main rift. There is no evidence that any lava flowed from these secondary fissures.

A brief study of the Crystal Ice Caves reveals an interesting sequence of volcanic events. The first lavas from the rift flowed over a soil layer. This soil is exposed in the King's Bowl and can be examined close-up at the entrance of the Caves. Here, completely burned blades of grass are conspicuously visible on the bottom of the first flow. Also, roots found in the soil can be radiocarbon dated. This will tell the age of the lava flows and the caves.

After the original outburst of lava took place, a withdrawal followed and the lava surface in the rift receded to a depth of at least several hundred feet. This pattern was repeated over and over again throughout the entire molten phase of the eruption. This fluctuation formed what is known as a composite dike. The dike can be seen by visitors as it is all through the caves. Each vertical layer on one side of the center of the dike has a corresponding layer on the other side. Each one of these sets represents one eruption.

The width of the dike at the Crystal Ice Caves is about six feet --the distance between the two walls of the Great Rift.

The way in which the caves were formed is not completely understood. The following brief account sums up the essential events.

When the molten phase of the eruption ended, the lava receded again in the rift to a depth well below the water table, which is almost 800 feet. This left large openings in the rift both above and below the water table. Water is abundant under the Snake River Plain which is one of the world's great aquifers. When this water began to encroach upon the cooling rift, great quantities of steam were generated. The flowing back of lava at the surface had partially blocked the top of the rift, and the outrushing steam was greatly restricted.

This resulted in a tremendous build-up of pressure within the rift. Finally, the surface rock gave way and the gigantic explosion which followed scattered rock over a wide area. The King's Bowl was formed by this explosion. It is located at one of the two focal points of the explosion.

The other, Hades, is one and three-fourths miles to the north and consists of a series of deep pits. All of the fine debris from Hades and the King's Bowl areas was deposited on the east side of the rift by what must have been a strong westerly wind. The lavas to the east of the King's Bowl are covered to a depth of four feet. This explosion must have left the caves in approximately the form we see them today. Most of the changes since then have probably been caused by ice.

Cold air entering the Crystal Ice Caves through natural openings in the winter chills the air and rock, even in the deepest chambers. Water entering these chambers freezes.

In the summer, the warm, light, outside air tends to float on top of the colder, heavy air in the caves. Mixing of the warmer air with colder air is relatively slight. This is the reason ice caves are referred to as cold air traps.

When slight warming does occur, some of the ice melts, and in so doing absorbs heat. This has the effect of keeping the caves at the freezing point all summer.

The ice and water in the caves are a great stabilizing factor in keeping the temperature near 0° C all year around. They absorb heat all summer, and give off heat all winter.

Three spectacular ice formations decorate the lava walls of the Great Volcanic Rift at Crystal Ice Cave. There are numerous, smaller ice formations and ice crystals in the cave, but these three are the largest and most fascinating.

The Crystal Tower ice formation stands 25 feet tall. Graceful, yet bold, its icy beauty captures the eye. It seems some ancient symbol of a distant past.

Crystal clear ice hangs in graceful, drape-like folds from the top of the cave in the Mansion Window ice formation. Another ice formation rises from the floor, and the top spreads leaf-like, suggesting a type of orbiculate plant. It resembles a great mansion window, with an ornate plant on display.

The Nativity is the most unusual of the three formations. Standing majestically to one side is the figure of a man wearing a long robe and a conical-shaped hat. In front of this formation is a smaller one, suggesting three closely knit figures. To one side are smaller formations against a backdrop of ice, hinting at a group of kneeling figures. Ice crystals sparkle from the surrounding lava walls, giving an abstract impression of a nativity scene."

Biological Description:

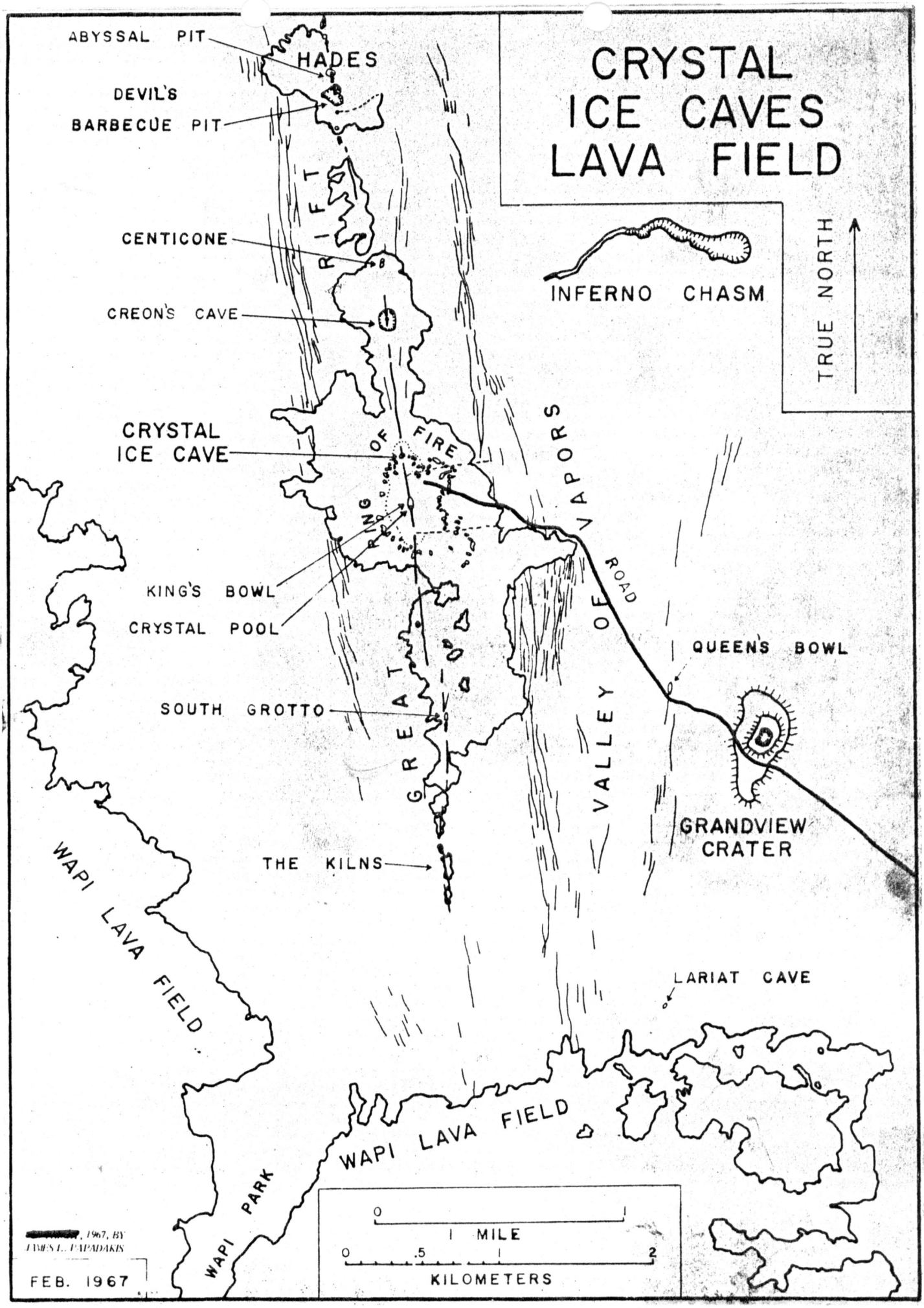
The vegetative communities and microhabitats of the Crystal Ice Caves Lava Flow are remarkably similar to those of Craters of the Moon National Monument. Because of the small size of the flows, the biotic communities are more dependent upon the adjacent area. Because of the sparsity of plant life on the lava flows, associations are not readily discernable.

The flow surface habitat supports communities of crustose lichens and small mosses (unidentified species). The shallow crevices of the unusually thin, brittle, basaltic pahoehoe flows supports mosses, scabland penstemon (Penstemon deustus), dwarf goldenweed (Haplopappus nanus), cinquefoil (Potentilla glandulosa), and wire lettuce (Stephanomeria tenuifolia). The shrubs more commonly found on the slopes of the cinder cones at Craters of the Moon grow in the deep pahoehoe crevices of the Crystal Ice Caves Lava Flows. Dominant shrubs include the syringa (Philadelphus lewisii), tansybush (Chamaebatiaria millefolium), rubber rabbitbrush (Chrysothamnus nauseosus), the golden currant (Ribes aureum), rock spirea (Holodiscus dumosus), and bitterbrush (Purshia tridentata).

The cinder garden habitat so conspicuous at Craters of the Moon is lacking in the Crystal Ice Caves Lava Flow. The dominant tree of the Monument, the limber pine (Pinus flexilis), is absent from this relatively small area. Prickly pear cactus (Opuntia polyacantha) is conspicuously more abundant while antelope bitterbrush (Purshia tridentata) is less abundant than at Craters of the Moon.

The Crystal Ice Caves Lava Flow provides habitats for wildlife similar to those of Craters of the Moon. Consequently, the fauna of the area is similar to that of the NPS-administered area. Because of the scarcity of antelope bitterbrush, the mule deer population of the Crystal Ice Cave area is undoubtedly smaller than at Craters of the Moon. The fauna of the area includes coyotes, bobcats, weasels, jackrabbits, Great Basin rattlesnakes, and numerous small rodents.

Of particular biological significance is the population of recently-described blind beetles, Glaciacavicola bathyscioides (Westcott, 1968) found in the Crystal Ice Caves. The fascinating evolutionary history of these insects and their remarkably narrow ecological amplitude are both significant factors to be considered in preserving this unique area.


CRYSTAL
ICE CAVES
LAVA FIELD
ABYSSAL PIT
HADES
DEVIL'S
BARBECUE PIT
CENTICONE
CREON'S CAVE
CRYSTAL
ICE CAVE
KING'S BOWL
CRYSTAL POOL
SOUTH GROTTO
THE KILNS
INFERNO CHASM
TRUE NORTH
RIFT
RING OF FIRE
VALLEY OF VAPORS
ROAD
QUEEN'S BOWL
GRANDVIEW
CRATER
LARIAT CAVE
WAPI LAVA FIELD
WAPI LAVA FIELD
WAPI PARK
0
1 MILE
0 .5 1 2
KILOMETERS
, 1967, BY
JAMES L. PAPADAKIS
FEB. 1967

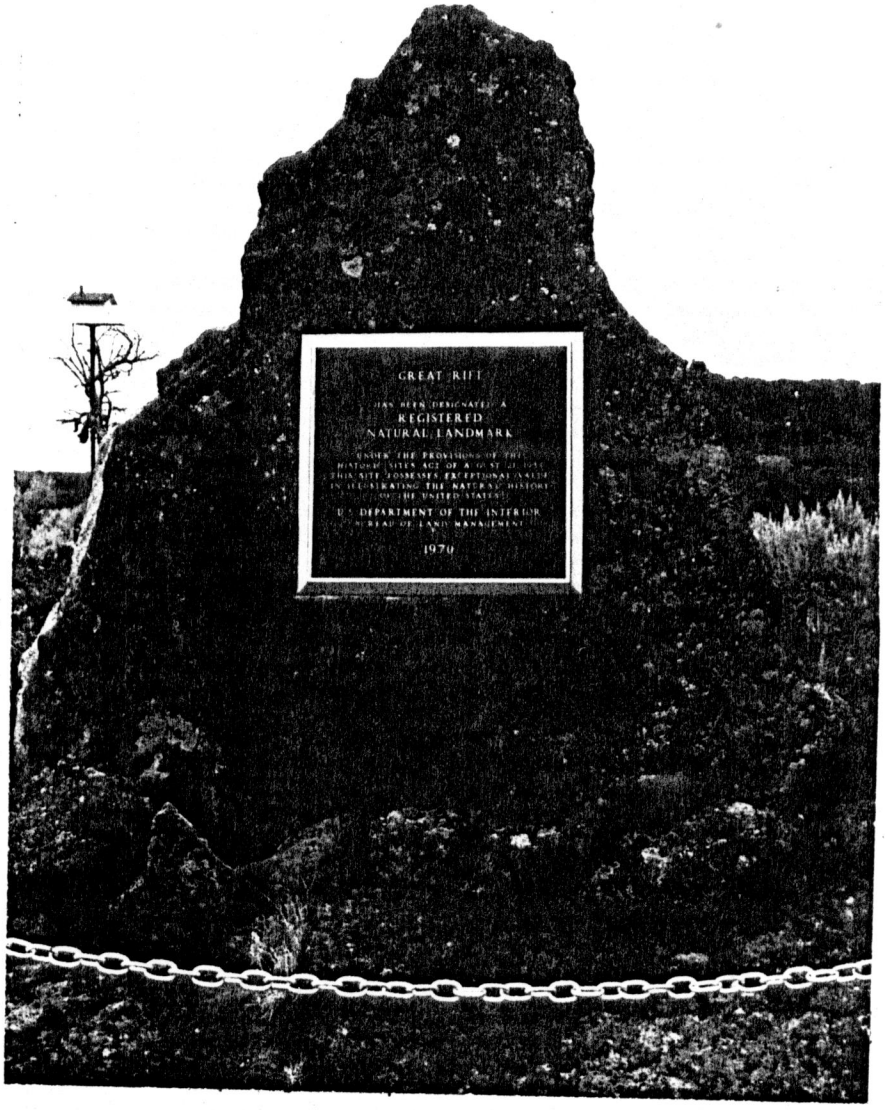


Figure 16. Because of its uniqueness as a volcanic rift cave, Crystal Ice Cave was officially designated a Natural Landmark in 1970.

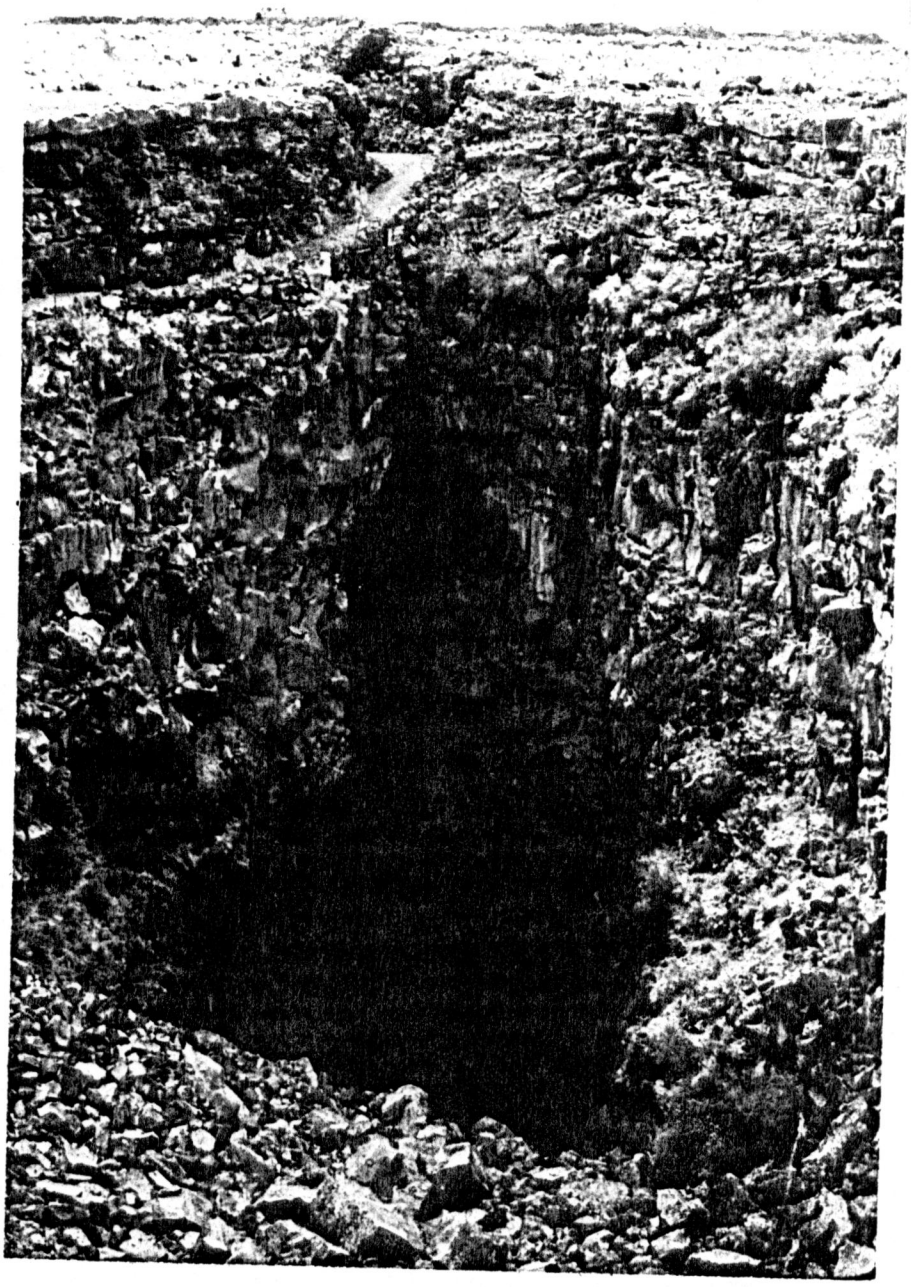


Figure 7 . One of the most prominent features of the Crystal Ice Caves Lava Flow is an explosion pit known as the King's Bowl.

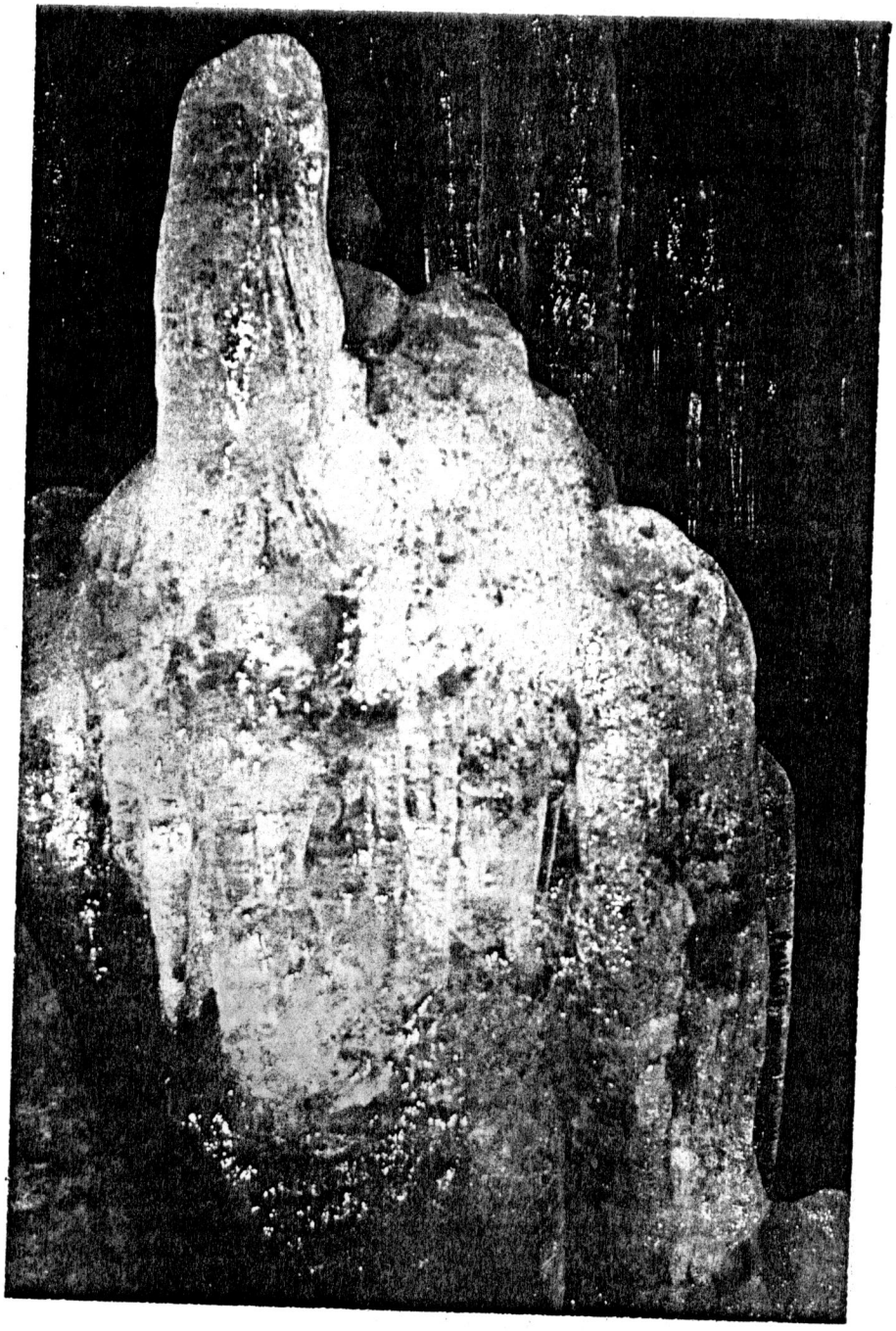


Figure 8 . Spectacular ice formations line the Great Rift within Crystal Ice Cave.

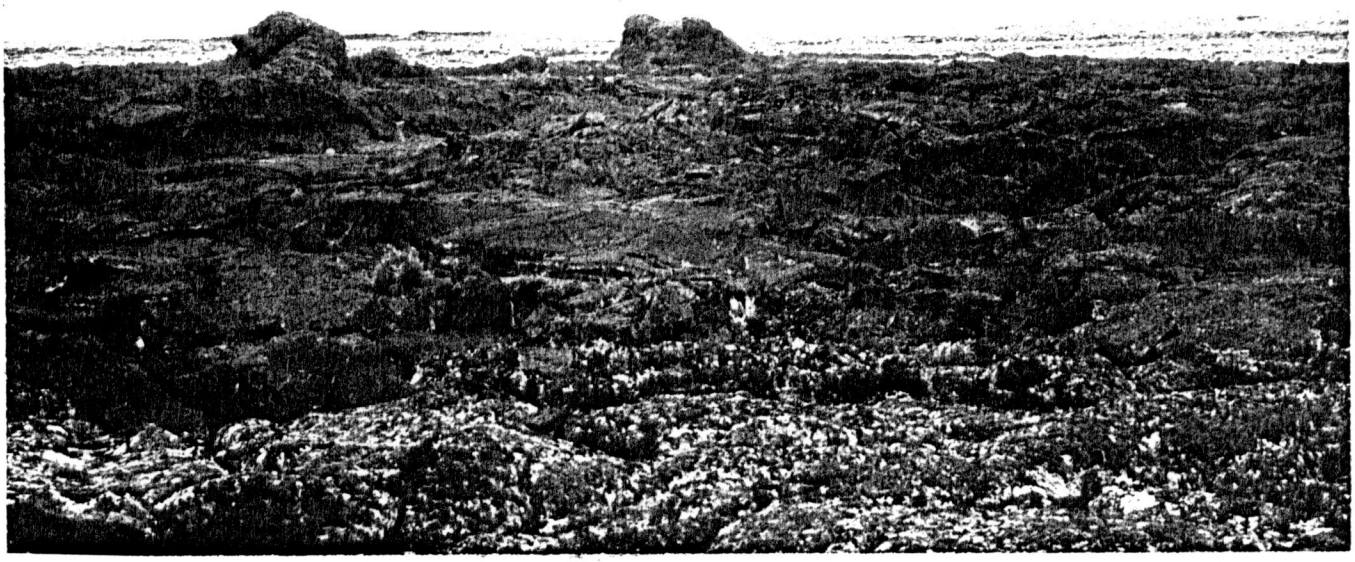


Figure 9. Several spatter cones project above the thin, brittle Crystal Ice Caves Lava Flow.

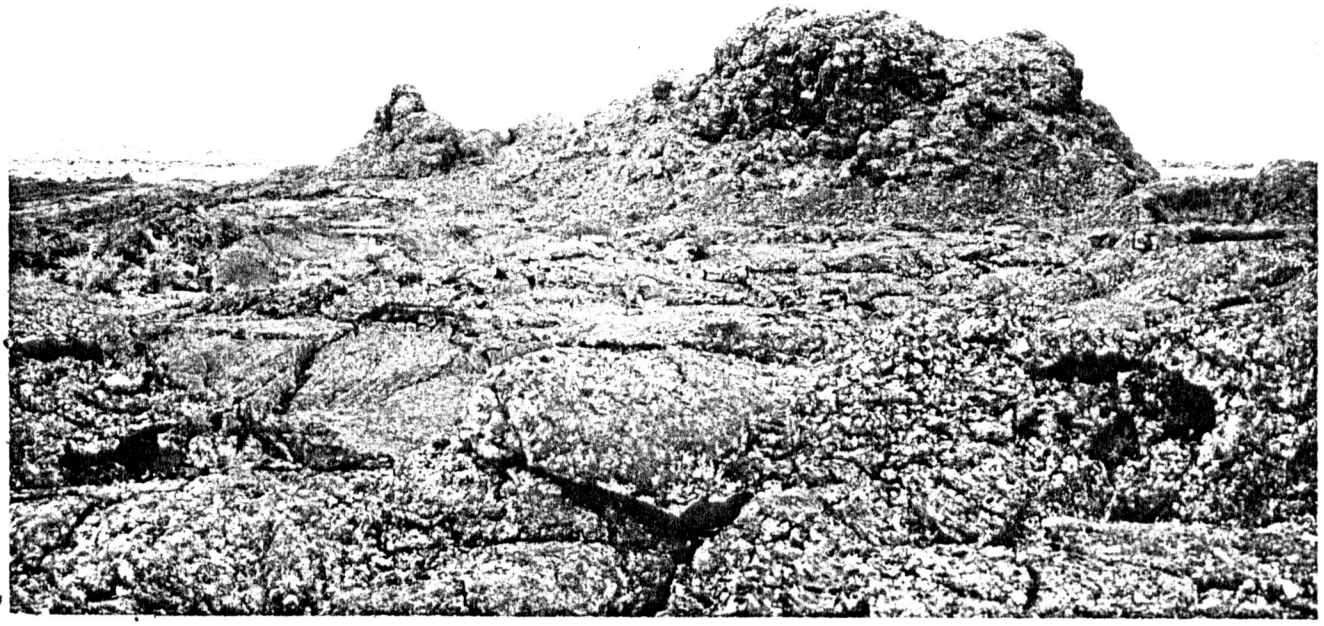


Figure 10. Near the northern margin of the Crystal Ice Caves Lava Flow is a prominent spatter feature known as Centicone.



Figure 11. The Crystal Ice Caves Lava Flow is characterized by thin, brittle layers---indicating that the lava was extruded in an extremely fluid condition.



Figure 12. Shrub associations of rabbitbrush and bitterbrush grow near the eastern margin of the Crystal Ice Caves Lava Flow.

B. WAPI LAVA FIELD

Section 21 T6S R28E

Geological Description:

The Wapi Lava Field, an elongate area roughly 16 miles in a north-south direction and 9 miles in an east-west direction, covers about 160 square miles. It represents eruptions of a very fluid basaltic lava from a series of central vents of which Pillar Butte is the highest and most prominent. Pillar Butte stands on the margin of one of several pit craters which occur at the summit, aligned roughly N. 10° W. A rift essentially parallel and immediately to the east of the pit craters is present at least in the summit area. The major volume of lava flowed to the southeast from these vents.

The Wapi lavas exhibit striking examples of many of the surface features of pahoehoe lavas, such as ropy structure, lava streams with outstanding lateral dikes, miniature lava tubes, and collapse structures. Some of the best examples of these features in the entire region are to be found in the Wapi area.

The Wapi Lava Field appears to represent an early stage in the development of a "shield volcano"---the type which gave rise to the lava flows which formed the Snake River Plain. The Great Rift, prominently displayed at Crystal Ice Caves, extends southward and is covered by Wapi lavas. The relationship of the Wapi Lava Field to the Great Rift is yet to be determined.

Biological Description:

The vegetative communities of the Wapi Lava Field show striking similarities to those of the basin and range (salt-desert shrub) biotic province. Although the microhabitats for plant life are similar to those of Craters of the Moon National Monument, the species composition differs significantly. The microhabitats of plant life include the flow surfaces; the shallow pahoehoe crevices; the deep pahoehoe crevices; and, in a few relict areas (kipukas) cinder gardens.

The flow surface habitat supports an abundance of crustose lichens (species undetermined). Mosses are found in the shallow crevices of the older pahoehoe flows, but several flowering plants---Potentilla glandulosa, Haplopappus nanus, and Stephanomeria tenuifolia---form the major associations. The deep crevice habitat supports numerous associations of shrubs---some typical of the northern desert, others typical of the basin and range province. The southern section of the flow supports an unusual stand of curl-leaf mountain mahogany (Cercocarpus ledifolius). At the eastern margin of the Wapi Flow are found associations of Rocky Mountain Juniper (Juniperus scopulorum) and curl-leaf mountain mahogany (Cercarpus ledifolius); and syringa (Philadelphus lewisii) and curl-leaf mountain mahogany (Cercocarpus ledifolius).

Several cinder cone summits project above the Wapi flow (SW¼ Sec 24 T6S R28E and NE¼ Sec 36 T6S R28E) and constitute relict areas or kipukas. Dominating the kipuka at SW¼ Sec. 24 T6S R28E is an association of three-tipped sagebrush (Artemisia tripartita) and spiny hopsage (Grayia spinosa). Subdominants include downey chess or cheat grass

(Bromus tectorum); prickly pear cactus (Opuntia polyacantha); and Idaho fescue (Festuca idahoensis). The abundance of Bromus tectorum and the proximity of this small kipuka to the adjacent farmland both indicate that the pristine condition of this cone has been altered.

The breached vent of a cinder cone situated at NE¼ Sec 36 T6S R28E exhibits unusual vegetative zonation. The outer slopes of the cone are covered with an association of Artemisia tripartita and Gravia spinosa. Subdominants include Festuca idahoensis, Opuntia polyacantha, and Eriogonum microthecum. The inner slopes of the cone support stands of very old (estimated 750 years) junipers (Juniperus scopulorum) and a few patches of golden currant (Ribes aureum). Smaller junipers and prickly pear cactus (Opuntia polyacantha) grow in the joints (cracks) of the pahoehoe flow that fills the vent. Tansy bush (Chamaebatiaria millefolium), syringa (Philadelphus lewisii), and rock spirea (Holodiscus dumosus) are shrubs of the deep crevices of this flow.

The animals of the Wapi Lava Field are similar to those of the Craters of the Moon lava flows. Predatory birds, mourning doves, coyotes, bobcats, jackrabbits, horned lizards, and rattlesnakes were observed on this brief reconnaissance of the area. There was little evidence of mule deer activity except near the eastern edge of the Wapi Flow adjacent to the farming areas.

The kipukas of the Wapi Lava Field have significant research potential for areas of the salt desert shrub vegetative type. The cone at NE¼ Sec 36 T6S R28E is in a relatively pristine condition; the cone at SW¼ Sec 24 T6S R28E could probably be restored to "pseudo-pristine" condition for research purposes. Both kipukas could function as true indicators of range conditions.

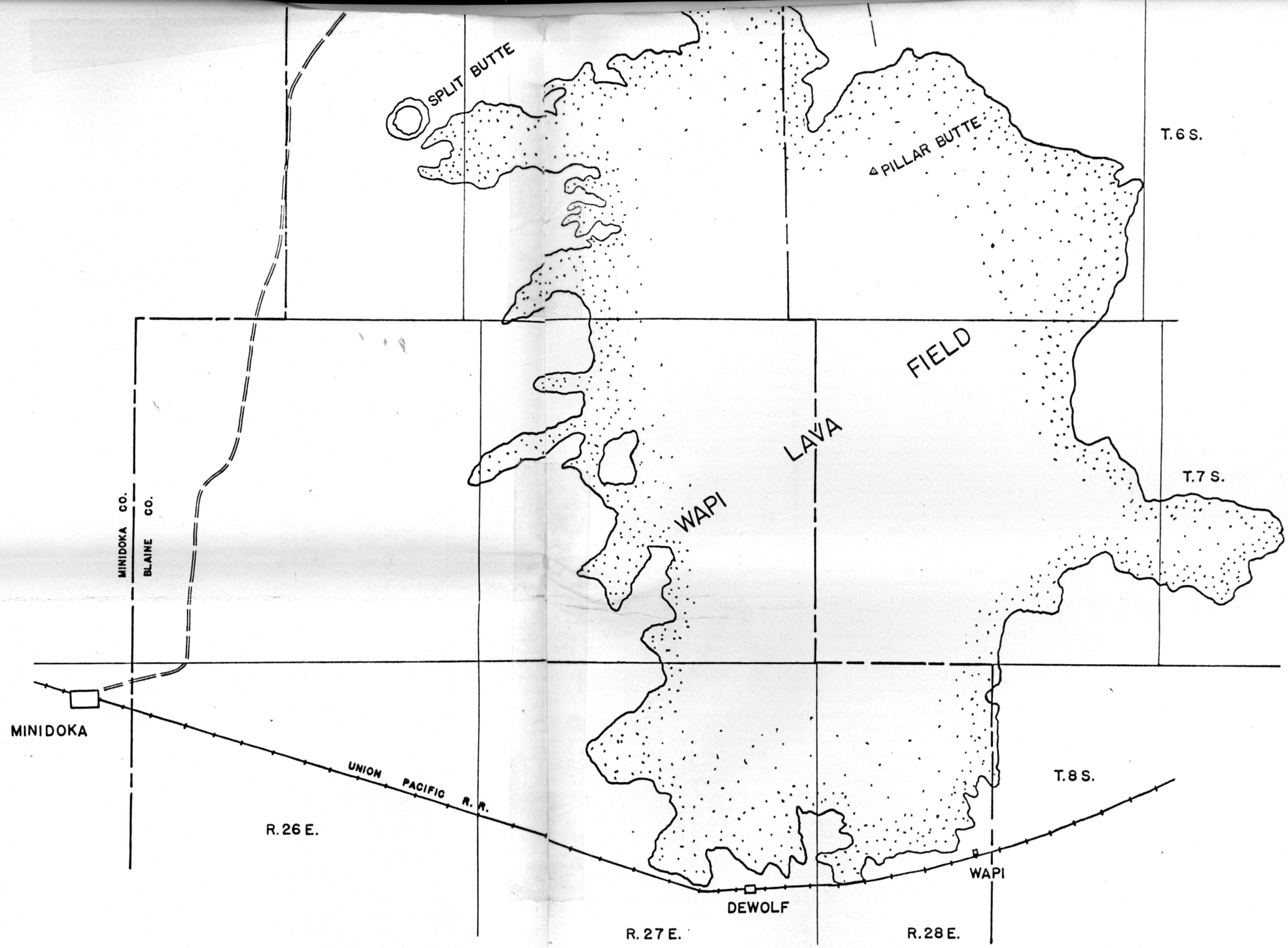


PLATE I. LOCATION OF AREAS STUDIED

0 5 MILES

SCALE

R.26E.

R.27E.

BEAR PARK

HOLOCENE LAVAS

GREAT RIFT

T.3S.

BLAINE CO.

POWER CO.

MINIDOKA CO.

BLAINE CO.

T.4S.

R.25E.

HOLOCENE LAVAS

BEAR TRAP LAVA TUBE

BEAR TRAP CAVE

T.5S.

BLAINE CO.

POWER CO.

CRYSTAL ICE CAVE

BUTTE



Figure 14. The summit zone of Pillar Butte consists of a series of pit craters.

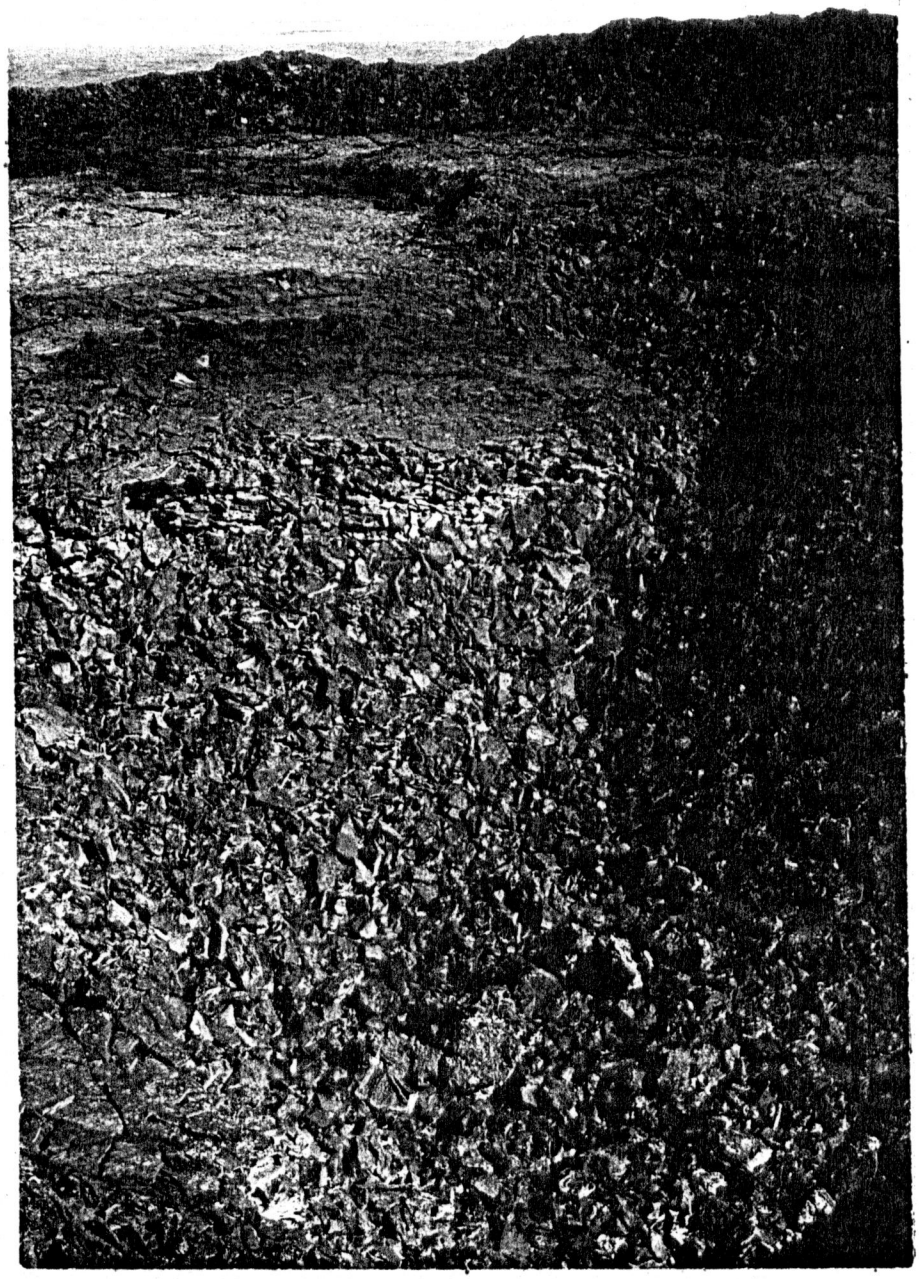


Figure 15. A small waterhole is situated in the bottom of this sizeable pit crater on Pillar Butte.



Figure 16. The slopes of Pillar Butte are covered with numerous lava rivers, troughs, and dikes.



Figure 17. The Wapi Lava Field exhibits striking examples of the surface features of pahoehoe lavas, such as ropy formations.

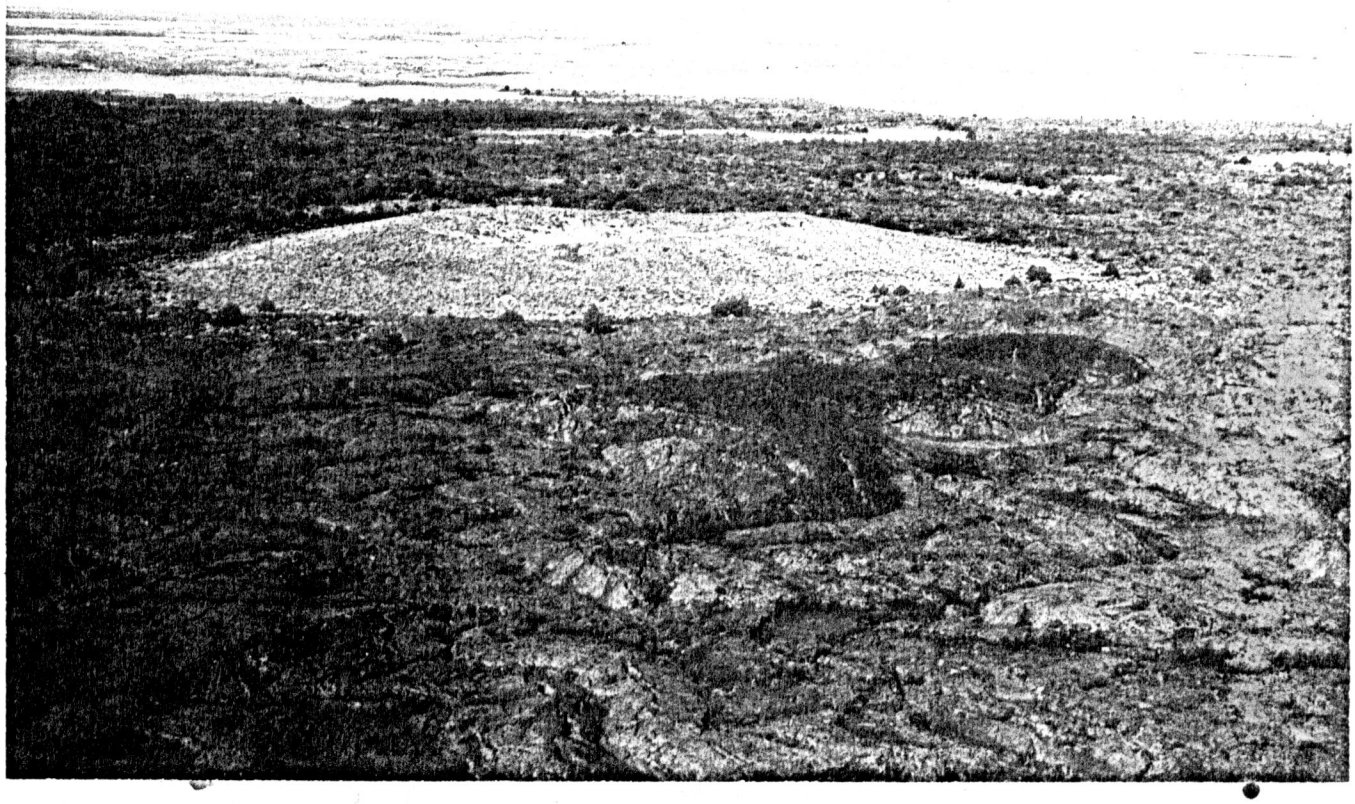


Figure 18 . This kipuka at SW¼ Sec 24 T6S R28 E supports vegetation typical of the basin and range biotic province.



Figure 19. The pahoehoe flows at the eastern edge of the Wapi Lava Field support open juniper stands. Grasses and shrubs dominate the plant communities of this kipuka.

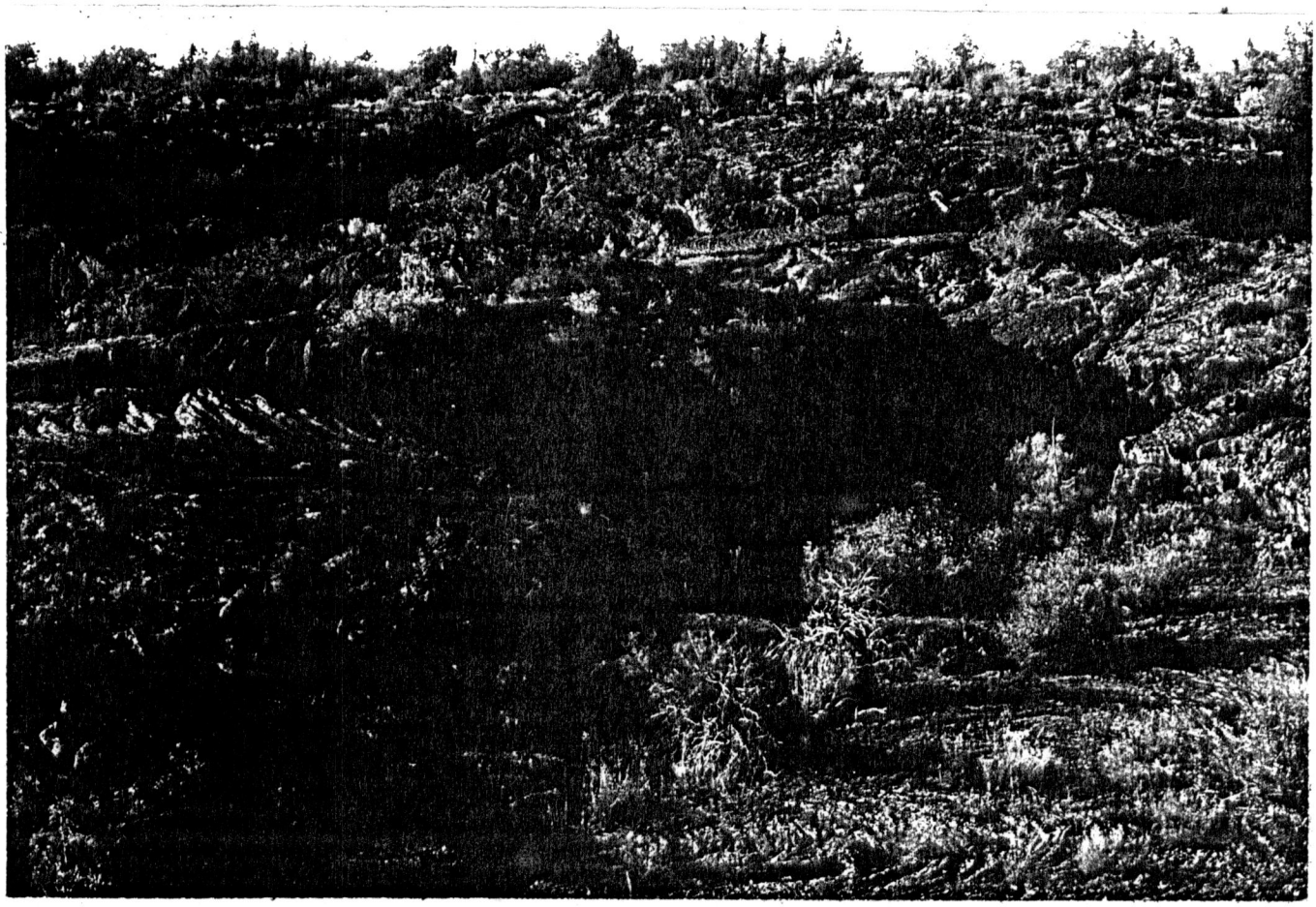


Figure 20 . The deep crevices of the eastern Wapi Lava Field support shrubs of both basin and range and northern desert biotic provinces.



Figure 21 . Thick stands of three-tipped sagebrush, rubber rabbitbrush, and Rocky Mountain juniper grow along the flow margin at the base of the kipuka.

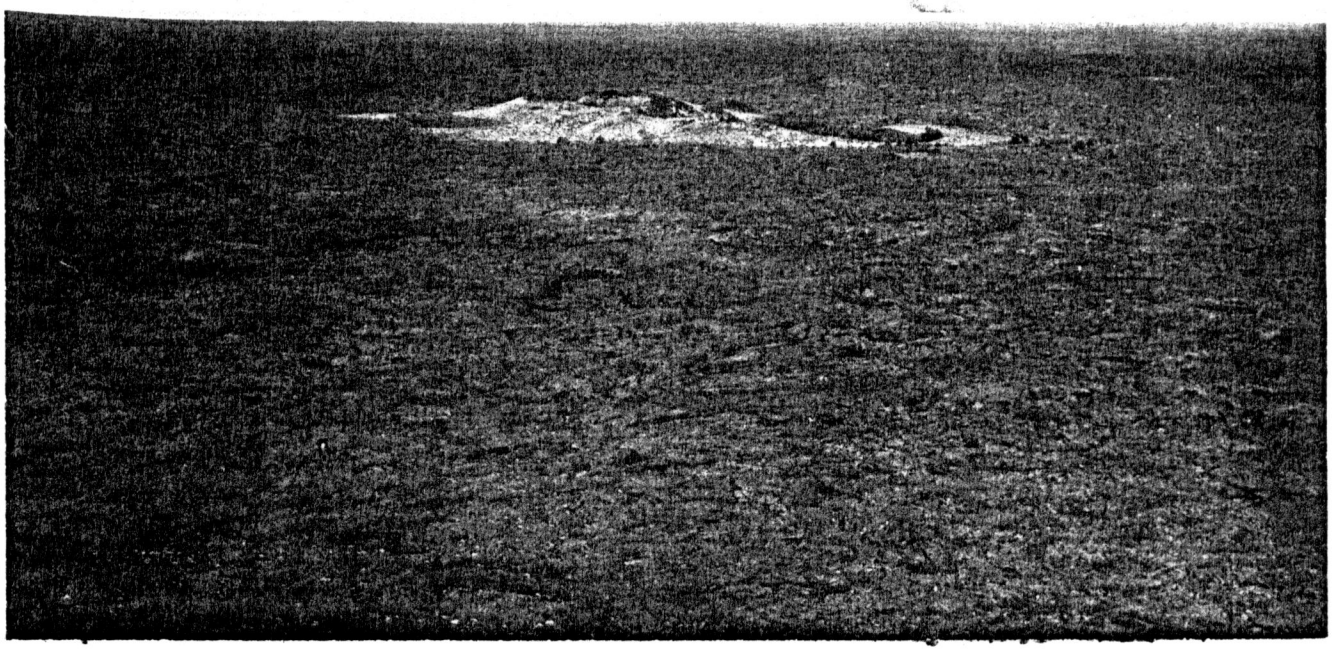


Figure 22 . Because of its location, the kipuka at NE¼ Sec 36 T6S R28E remains in pristine condition.

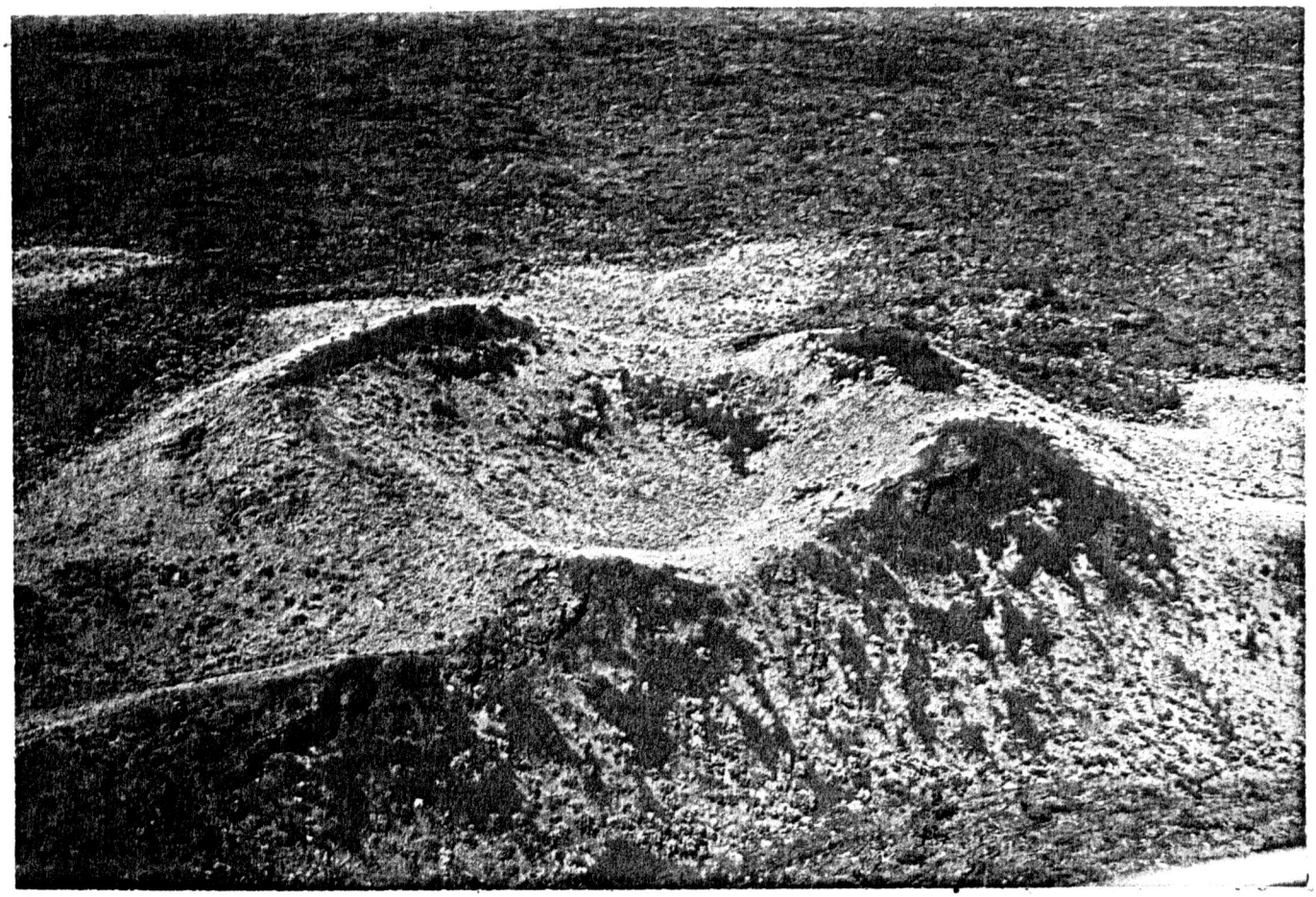


Figure 23 . The unbreached vent of this ancient cinder cone looms above the more recent Wapi Lava Field.

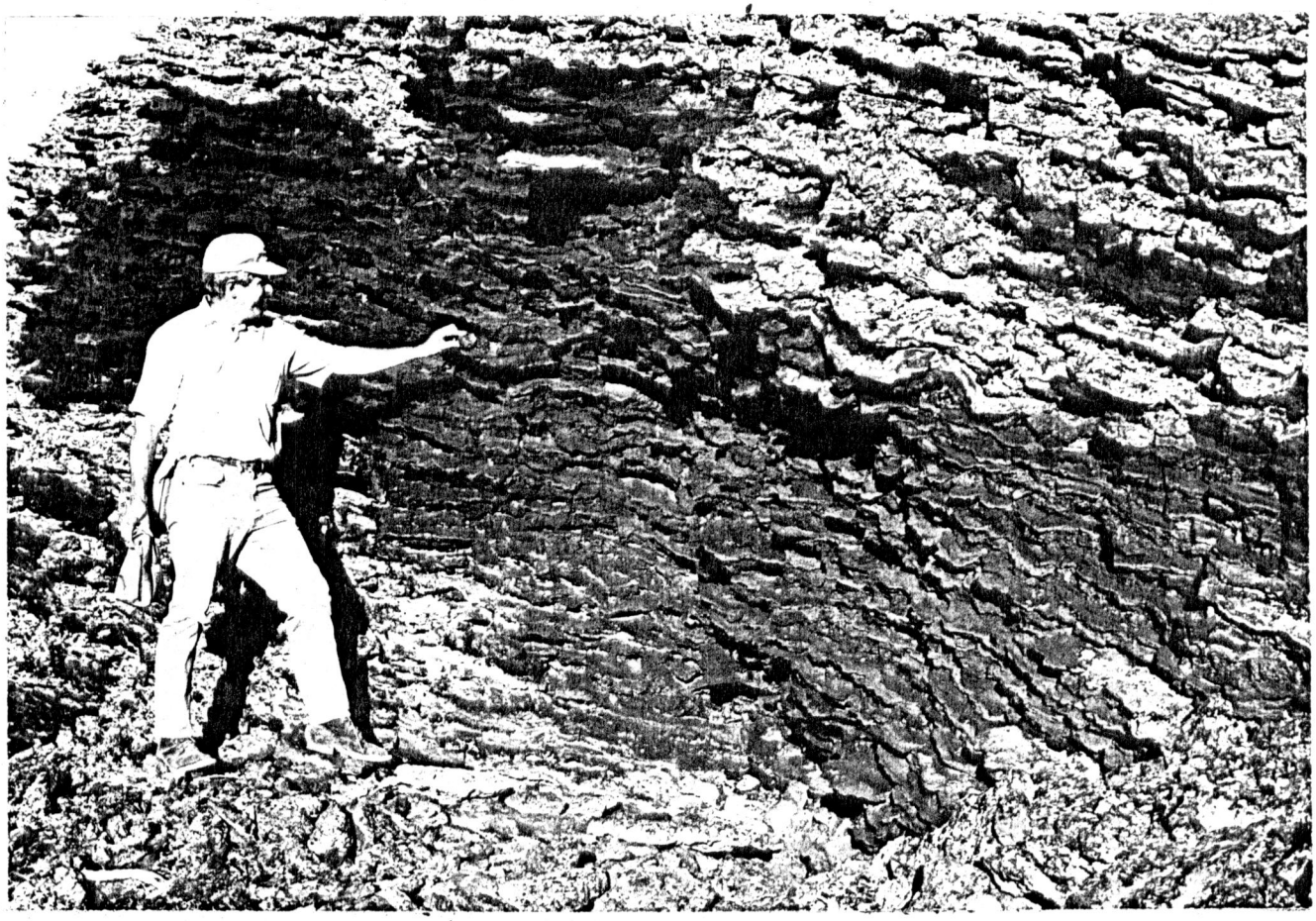


Figure 24. Eroded walls of the cinder cone (kipuka) situated at NE¼ Sec 36 T6S R28E show layers of thin, brittle lava flows.



Figure 25 . Huge Rocky Mountain junipers estimated to be at least 750 years old grow along the southern rim of the cinder cone kipuka situated in Section 36 of the Wapi Lava Field.

C. SPLIT BUTTE

SW¼ Section 13 T6S R26E

Geological Description:

The crater walls consist of well-bedded volcanic tuff dipping away from the Crater. The relatively coarse material contains many pea-sized pellets suggesting an ash eruption through a lake bed. Xenoliths of old lavas and underlying bedrock occur in the tuffs. If this interpretation is correct Split Butte represents a tuff ring or maar. This is the first such feature to be identified in this area but detailed work will doubtless uncover others. A dark basaltic dike cuts through the tuff walls of the crater rim on the west side. A prominent pit crater indicates that a lake of lava occupied the crater of Split Butte in its final stage of activity.

Biological Description:

This cone of older Snake River lavas supports the regional climax community of sagebrush and grass. Artemisia tridentata, Chrysothamnus nauseosus, and Bromus tectorum are the most abundant species. The fauna of Split Butte is typical of the northern desert. The cone has been overgrazed and the rangelands surrounding it are in poor condition.

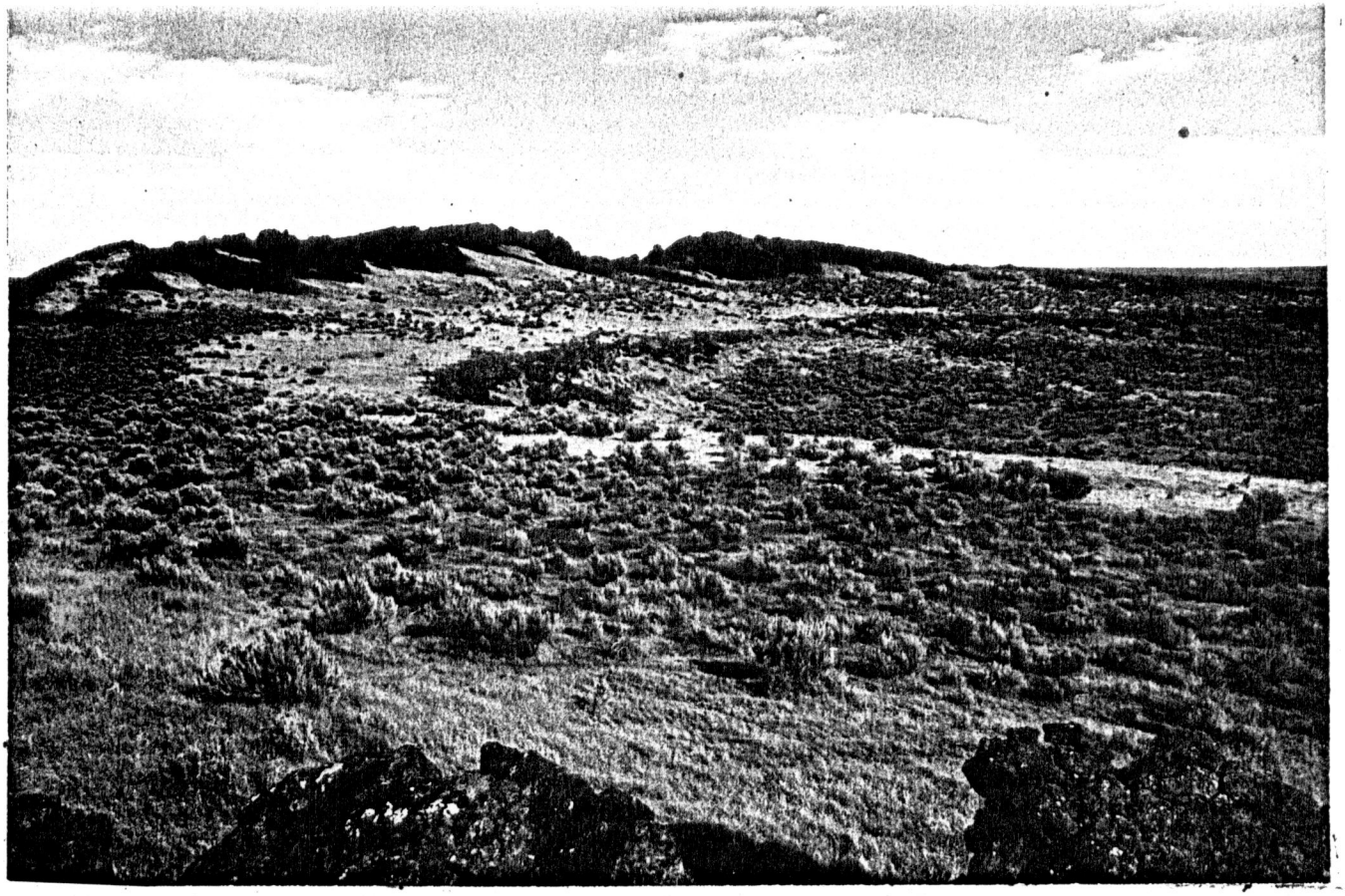


Figure 26 . The ancient shoreline of a lava lake is evident in Split Butte.

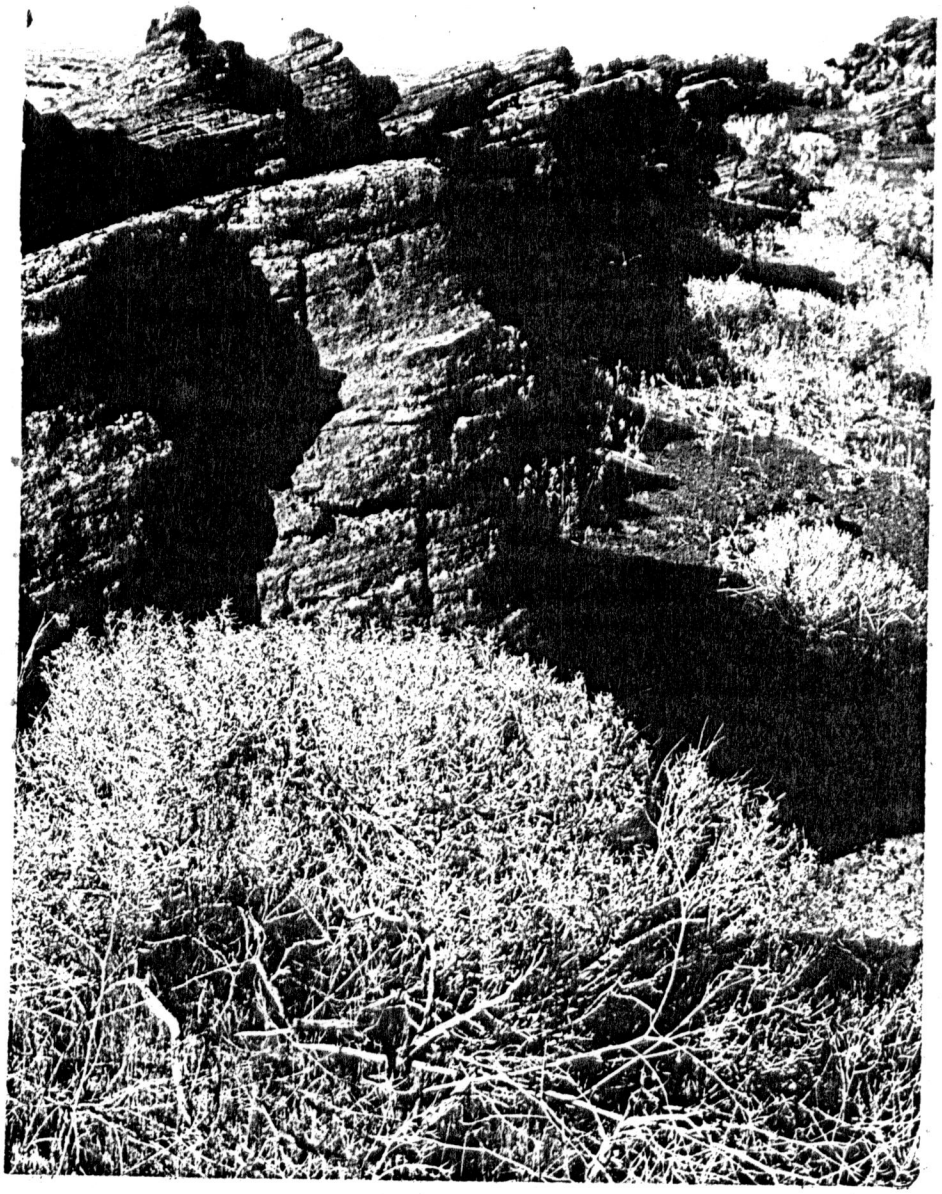


Figure 27. The rimrocks of Split Butte consist of pea-sized "mud" pellets embedded in a volcanic tuff.

D. BEAR TRAP CAVE

SW¼ Section 18 T5S R27E

Geological Description:

The cave is a lava tube which is entered at a point where the roof has collapsed. The cave itself, a lava tube roughly 55 feet in diameter which can be followed for 600 feet, is a portion of an extensive lava tube which can be traced on the surface by a line of collapse pits for a distance of 9 to 14 miles. The tube follows a winding course but generally trends northwest-southeast. The abrupt right angle turn midway along the tube is well shown on the accompanying diagram.

Biological Description:

The vegetation surrounding the Bear Trap Cave is of the sagebrush-grass vegetative type characteristic of the Snake River Plain. In the section of the tube accessible from the Minidoka-Arco desert road grow plants that are typically found in more mesic habitats. The most remarkable plants of the tube are *Marchantia polymorpha* and *Mimulus floribundus*.

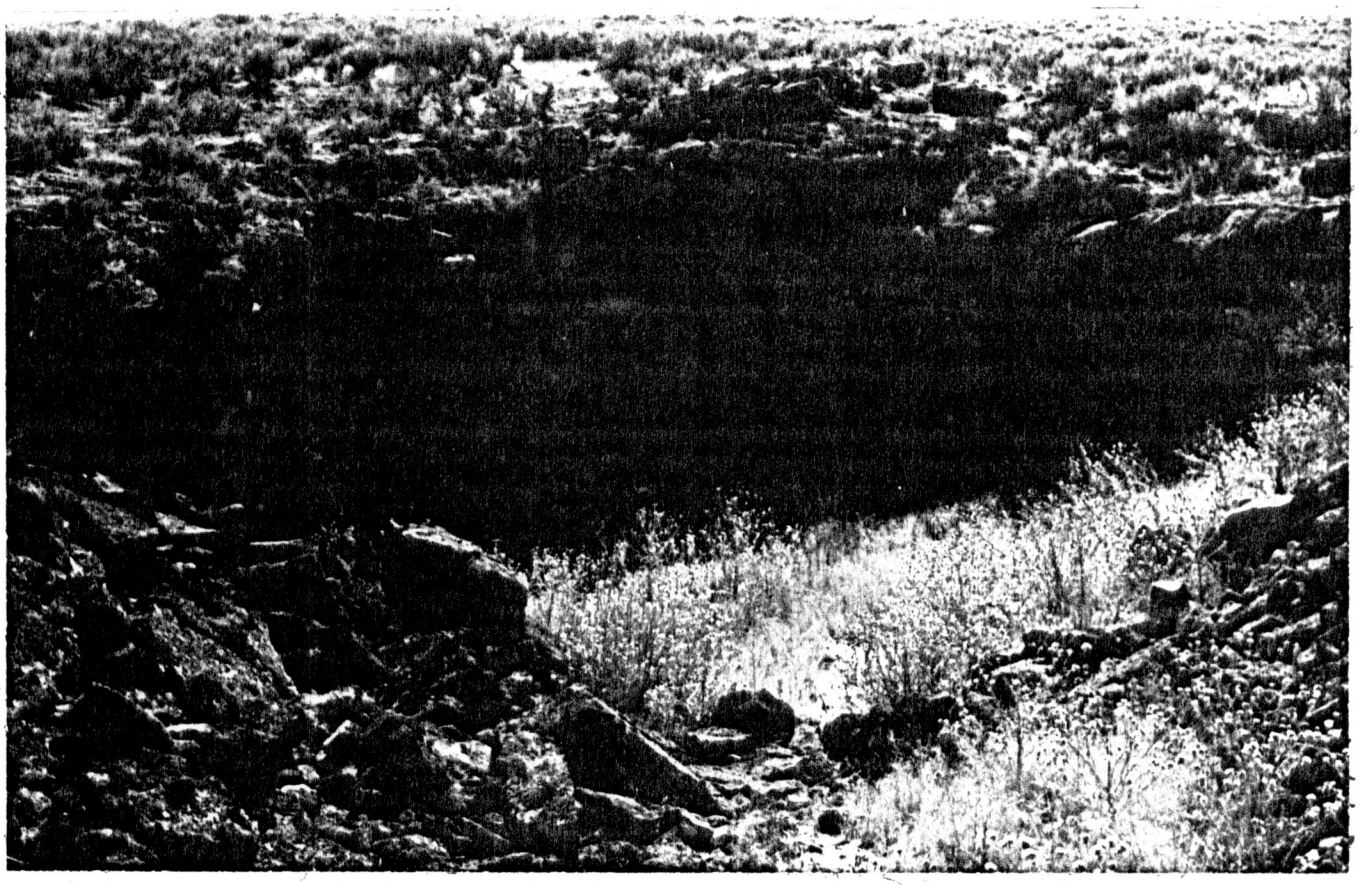


Figure 29 . Bear Trap Cave is readily accessible from the Minidoka-Arco desert road.

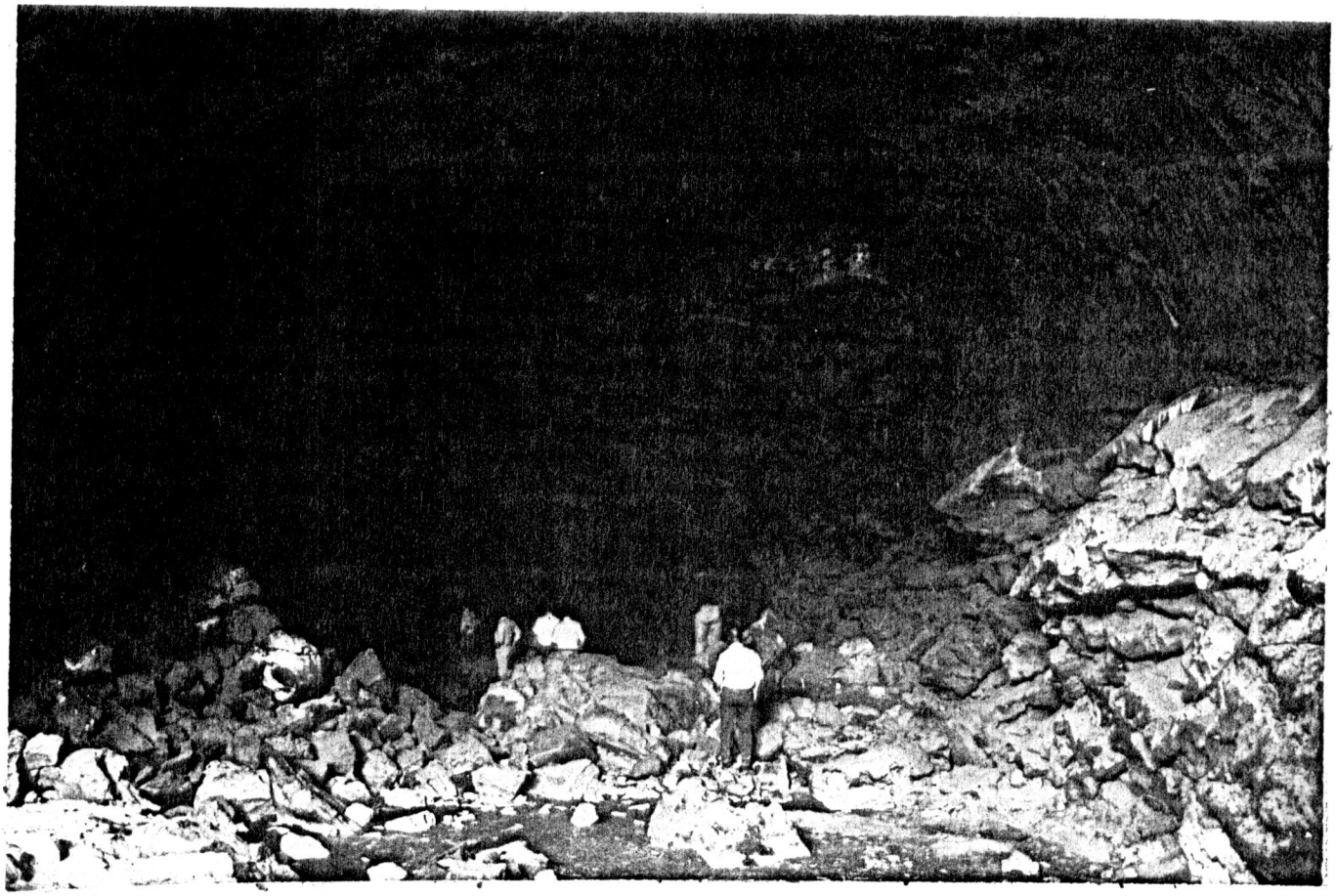


Figure 30 . Near its entrance, Bear Trap Cave is approximately 55 feet in diameter. The readily-accessible section of the lava tube is more than 600 feet long.

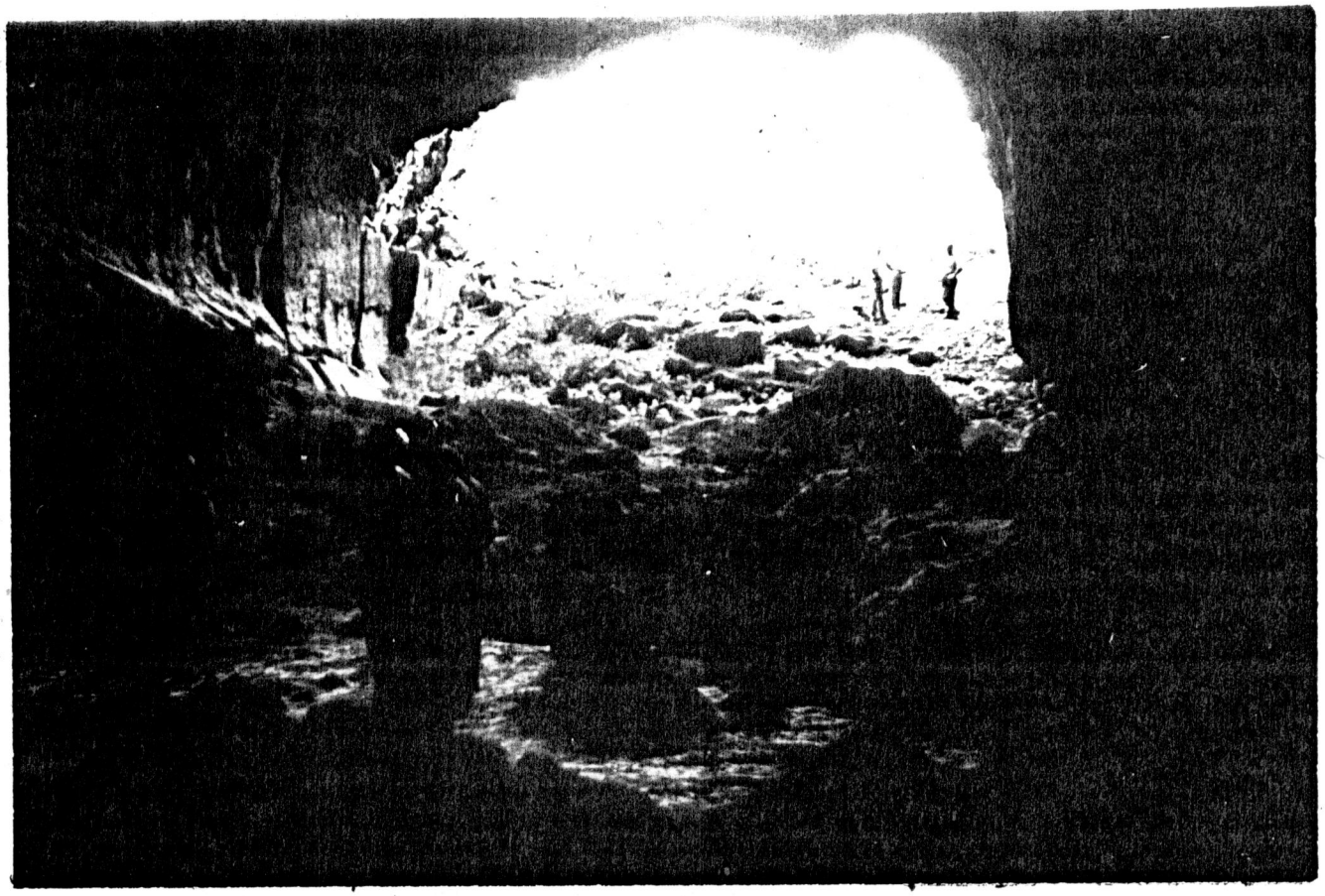


Figure 31. Numerous gas vesicles lining the walls of Bear Trap Cave attract the attention of cave explorers.



Intricate patterns characterize the surfaces of the southern Craters of the Moon Lava Flow.

A R E A II

BEAR PARK SECTION/ CRATERS OF THE MOON LAVA FLOW

A. Bear Park

B. Southern Section, Craters of the Moon Lava Flow

A. BEAR PARK

SE¼ Section 12 T3S R26E

Geological Description:

Bear Park is apparently the eroded remanent of an old vent area. A shallow compound crater is still visible at the summit. The crag-like points which form the highest points are portions of the old crater rim.

Biological Description:

The slopes of Bear Park support a regional climax community of sagebrush and grass. Dominant shrubs include *Artemisia tripartita*, *Chrysothamnus nauseosus*, and *C. viscidiflorus*. Grasses of the park include *Bromus tectorum*, *Festuca idahoensis* (scarce), and *Stipa occidentalis*. The present condition of the range is so poor that the area offers little potential for restoration or for purposes of biological research.



Figure 33 . The vegetative cover of an old shield volcano known as Bear Park is indicative of its relative age. Black Tail Butte, on the Great Rift, is evident on the upper left horizon.

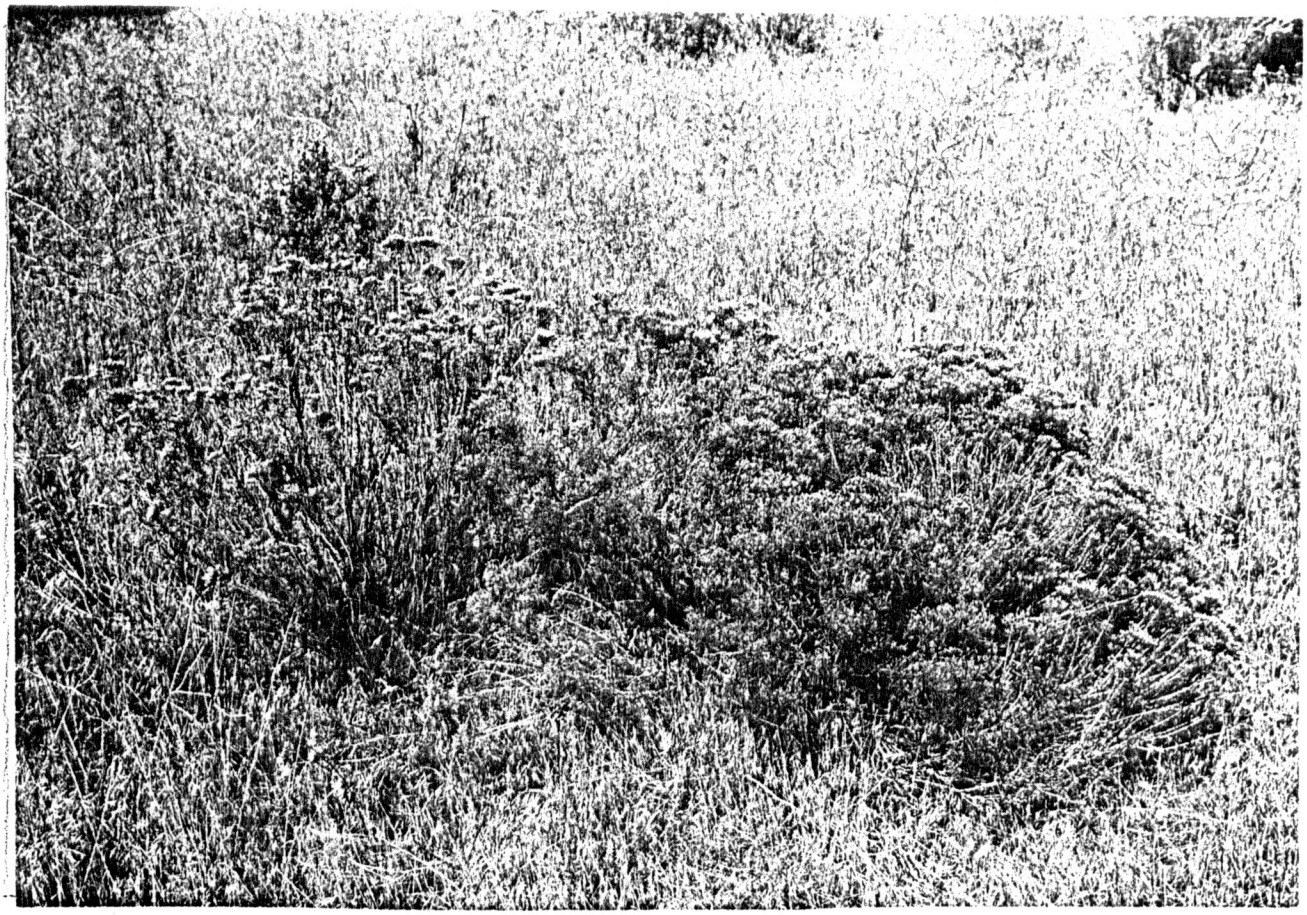


Figure 34 . Large patches of cheat grass are interspersed with the shrubs of Bear Park. Range restoration would, at best, be a difficult task.

B. SOUTHERN SECTION/ CRATERS OF THE MOON LAVA FLOW

Geological Description:

The flows in the southern section of the Craters of the Moon Lava Flows are similar to those situated within Craters of the Moon National Monument. Flow features include pressure ridges, squeeze-ups, ropy pahoehoe formations, and glassy "blue dragon" surfaces. Generally, the area is covered with pahoehoe flows, although vast expanses are covered with fractured pahoehoe which appears to be aa and occasional ridges of aa lava.

Biological Description:

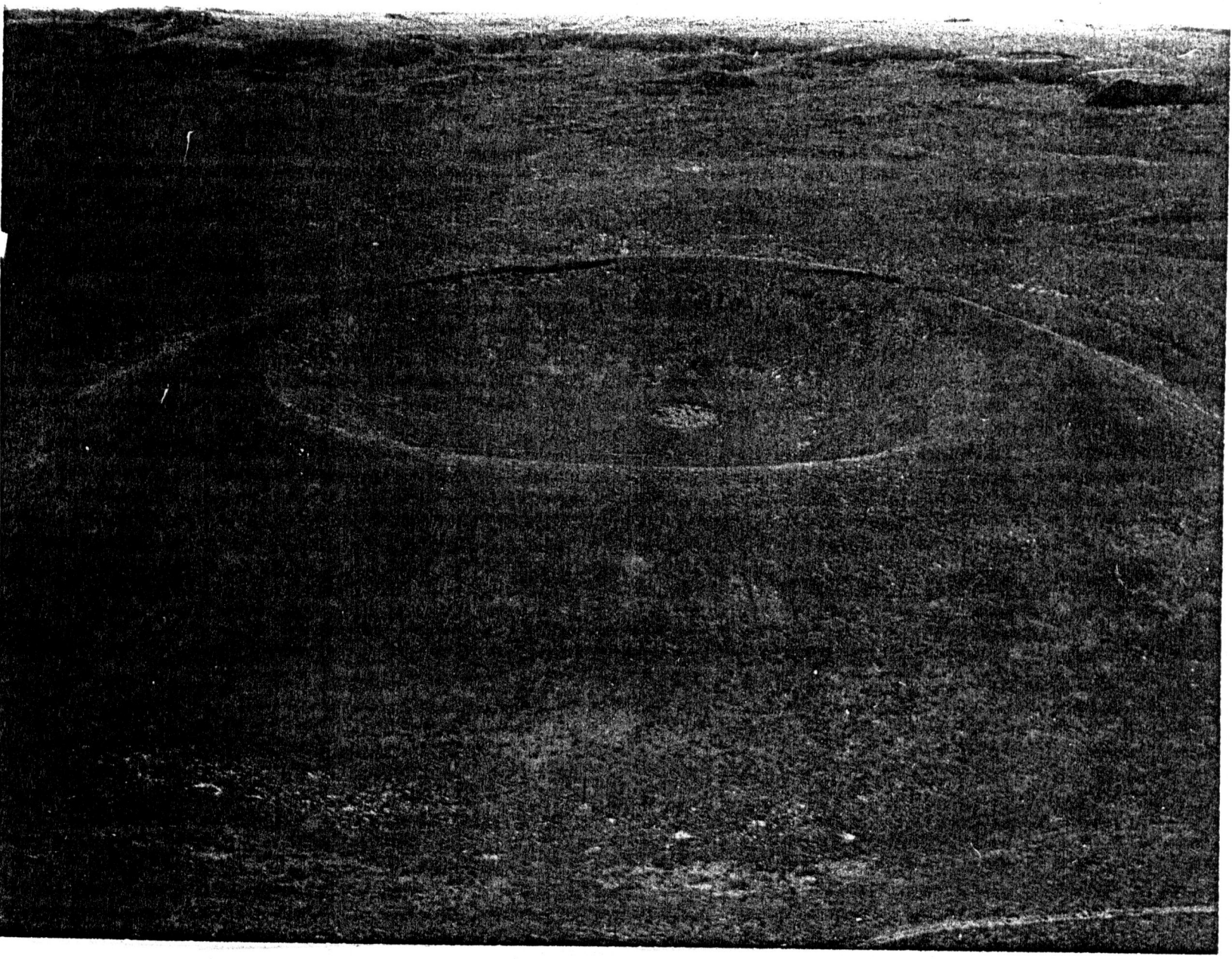
The plant habitats and associations of the southern section of the Craters of the Moon Lava Flows are essentially the same as those of Craters of the Moon National Monument, with the exception of the cinder garden habitat which is absent from this area.



Figure 35 . Fractured flow surfaces and squeeze-ups characterize the southern section of the Craters of the Moon Lava Flows.



Figure 36. True aa lava flows are rare in the southern section of the Craters of the Moon Lava Flow. These jagged surfaces are fractured pahoehoe.



The vent of China Cup Butte is perfectly symmetrical.

A R E A III

CONES SURROUNDING BIG SOUTHERN BUTTE

A. China Cup Butte

B. Little Wildhorse Butte

C. Cedar Butte

A. CHINA CUP BUTTE

S½ Section 4 T2S R29E

Geological Description:

From the air China Cup Butte appears to be a perfectly round cinder cone with smooth slopes and a symmetrical bowl-shaped crater. It had been assumed that it was a cinder or perhaps a tuff ring type of cone. However, on-the-spot inspection revealed that the cone was composed of scoriaceous lava and spatter. The crater floor was covered with a fine yellowish soil, presumably largely windblown dust. The perfectly symmetrical shape remains unexplained.

Biological Description:

The bowl-shaped crater of China Cup Butte supports communities of salt desert shrub type vegetation. Interesting vegetative zonation occurs on the inner slopes of the cone. These slopes are covered with shrub (Atriplex-Grayia) and grass (Festuca idahoensis) associations and at the bottom of the vent is a thick layer of soil which supports a lush patch of giant wild rye (Elymus cinereus). The cone offers potential for arid zone soil genesis studies.

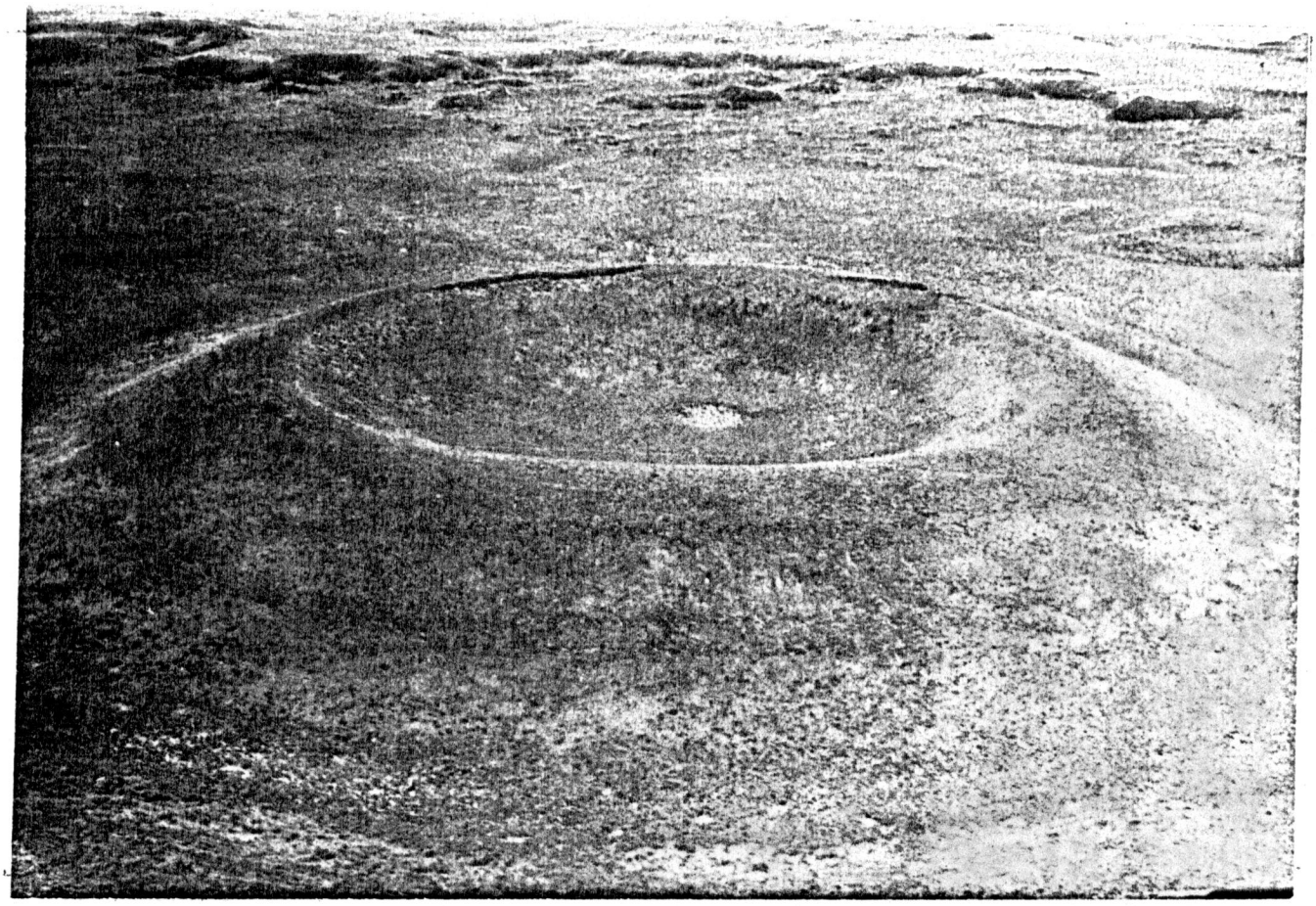


Figure 38 . The unmatched symmetry of China Cup Butte remains unexplained.

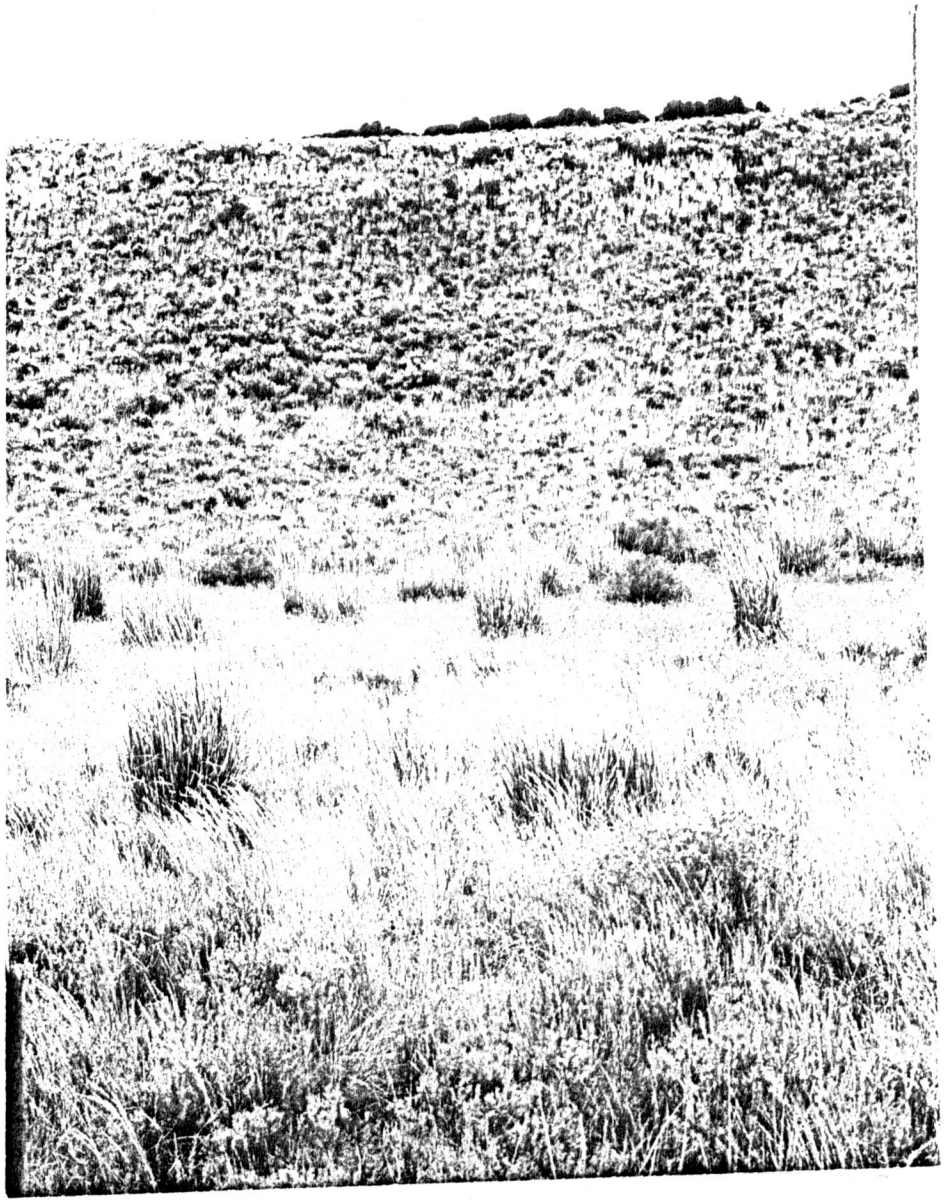


Figure 39 . Interesting vegetative zonation occurs on the inner slopes of China Cup Butte. The steep slopes of the vent support salt desert shrub communities, while the floor supports lush grasslands.

B. Little Wildhorse Butte

NW¼ Section 6 T2S R30E

Geological Description:

The deeply eroded remanents of a vent (shield volcano) of the Snake River lavas constitutes Little Wildhorse Butte. There is an irregular-shaped depression at the top which may be a remanent of a crater, or perhaps a compound crater. Near the north end of the depression there is a feature which resembles an "hornito," or active gas vent surrounded by a chimney-like pile of scoriaceous lava.

Biological Description:

Climax vegetation typical of the Northern Desert (sagebrush-grass vegetative type) covers Little Wildhorse Butte. The dominant shrubs of the cone are Artemisia tridentata and Chrysothamnus nauseosus. The fauna of the butte is apparently similar to that of Craters of the Moon --a horned toad and a rattlesnake were observed during the reconnaissance. The integrity of the cone has been disrupted by grazing activity.

Of possible historical value, an interesting system of horse or sheep corrals is situated in the vent of this ancient shield volcano.



Figure 40 . A horned toad was observed during the reconnaissance of Little Wildhorse Butte.

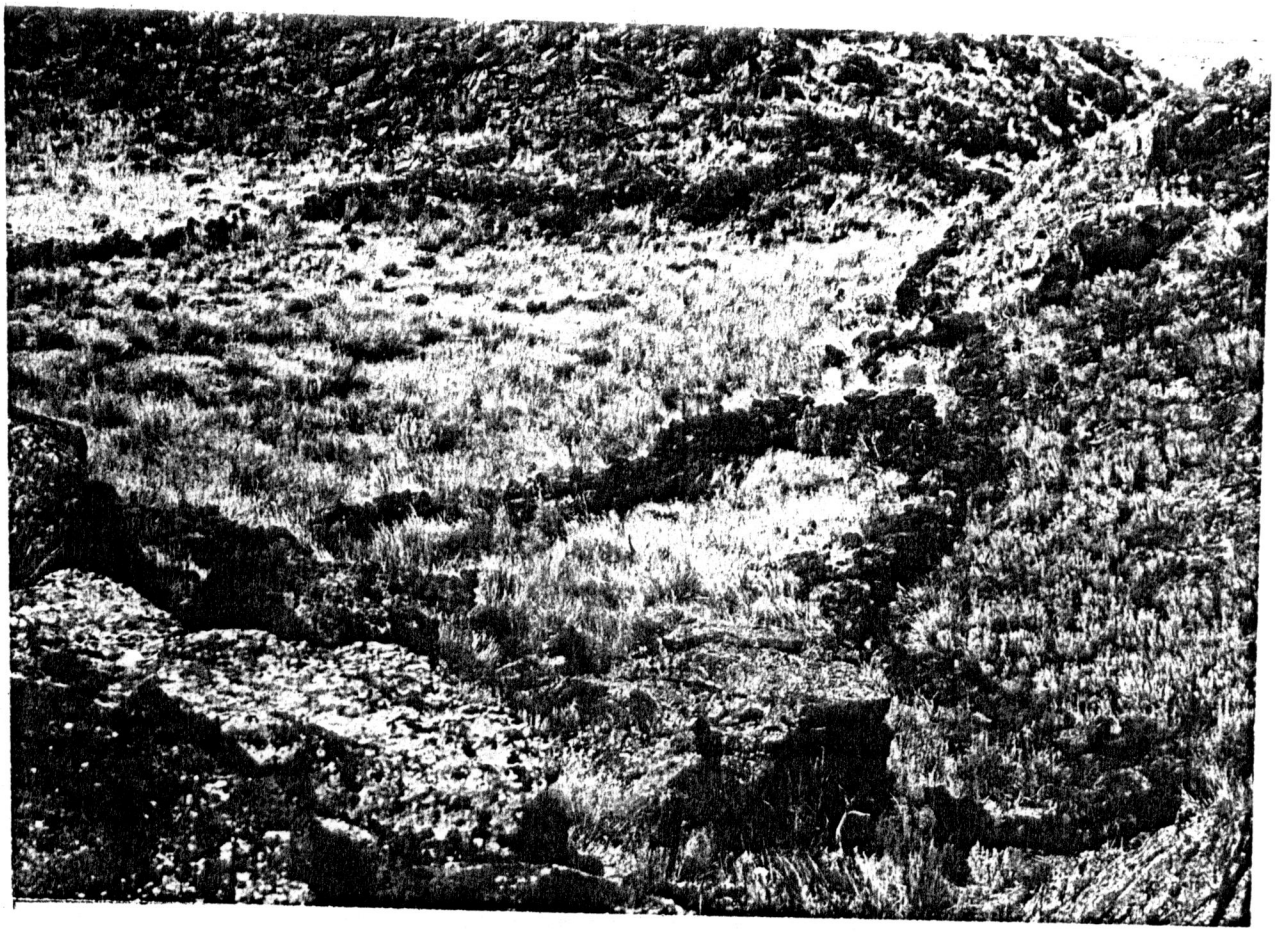


Figure 41. Of possible historical significance, an interesting system of horse or sheep corrals is situated in the vent of this ancient shield volcano.

C. CEDAR BUTTE

Section 26 T1N R30E

Geological Description:

Cedar Butte is a rhyolitic cone with the remanents of a crater breached on the north side. The crags on the eastern margin of the crater rim are the highest point on the butte. They consist of coarse pumice breccia, loosely welded, mixed with many fragments of obsidian. The pumice is cream colored but is reddish brown on weathered surfaces. Fragments of a reddish tuff with streaks of black glass were common. It seems obvious that this was a center of explosive pumice eruptions which produced ash flows that doubtless spread over the adjacent plains.

Rising from the western edge of the crater and cutting across the cone to the north is a dike-like mass of basaltic lava. It is believed that this may be the source of the basaltic lava which occurs at Cedar Butte.

The association of rhyolitic and basaltic material at Cedar Butte makes it a small scale replica of Big Southern Butte which lies about five miles to the west.

Biological Description:

Cedar Butte represents an ecotone between salt desert shrub and sagebrush-grass vegetative types. The lower slopes of the cone support open communities of Rocky Mountain juniper (*Juniperus scopulorum*) while the upper slopes of the cone support various associations of shrubs and grass (*Atriplex-Artemisia-Chrysothamnus*). There is an

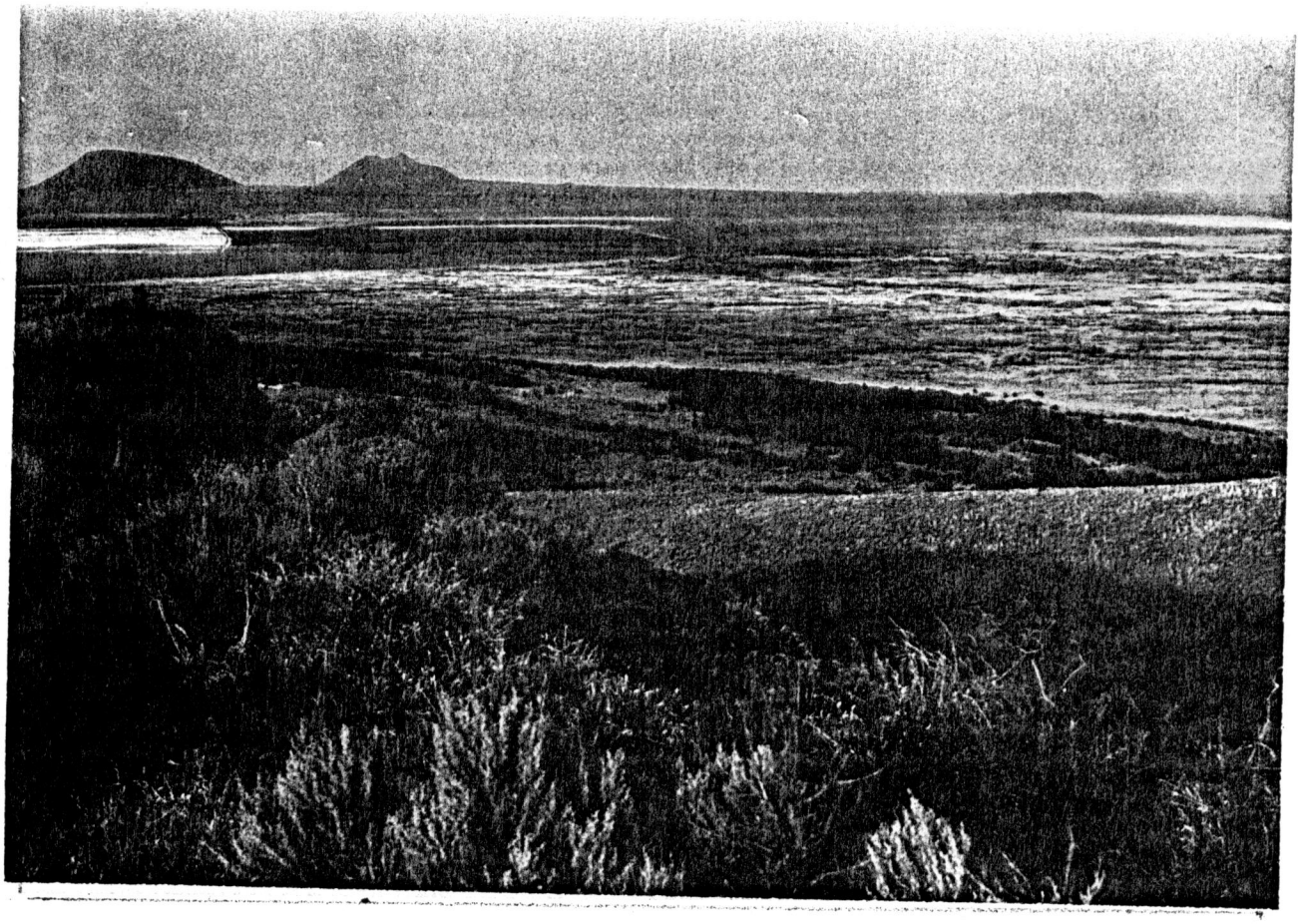


Figure 43 . Cedar Butte is a rhyolitic cone with remanents of a crater breached on the northeast side. The southern slope of the breached vent is evident in this photograph.



Figure 44 . Cedar Butte consists of coarse pumice breccia, loosely welded, mixed with fragments of obsidian.

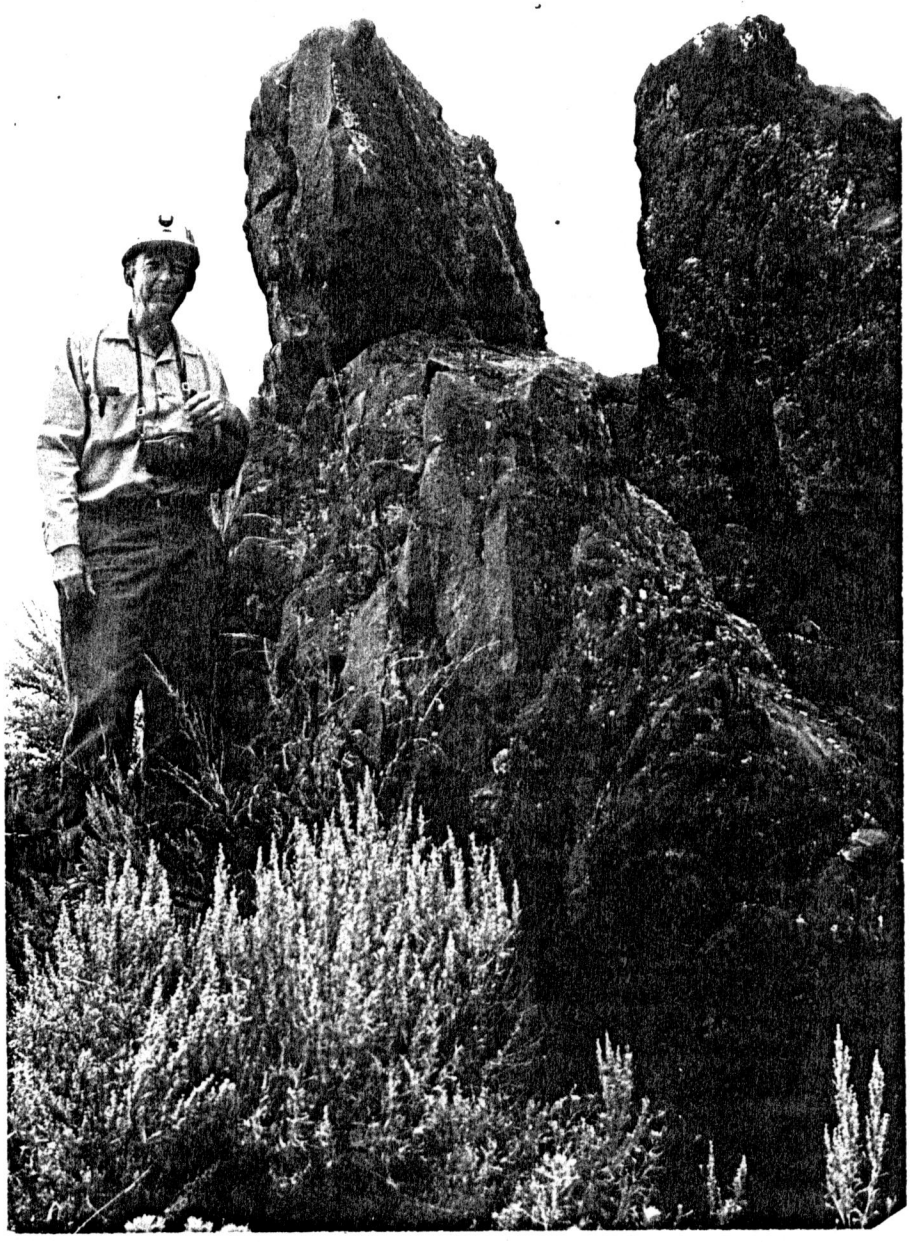


Figure 45 . Rising from the western edge of the crater of Cedar Butte and cutting across the vent of the cone to the northeast is a dike-like mass of basaltic lava.



Figure 46 . Bunchgrasses and Rocky Mountain junipers are representative of the plant associations of Cedar Butte.