

Research Natural Area Recommendation for

BRASS CAP KIPUKA

Bureau of Land Management

Shoshone District, Idaho

October, 1983

INTRODUCTION

Brass Cap Kipuka was suggested as a potential Research Natural Area (RNA) by Bureau of Land Management (BLM) personnel during a meeting on May 17, 1983, of Edwin Tisdale and Charles Wellner, Idaho Natural Areas Coordinating Committee (INACC) with Shoshone District BLM people. Joe Carter of the Shoshone BLM District, Edwin Tisdale, and Steve Caicco of the Idaho Committee examined Brass Cap Kipuka on June 13, 1983, and agreed that it was an excellent candidate RNA.

Members of the Idaho Committee were working under an agreement with the Western Regional Office of The Nature Conservancy, San Francisco, to identify, describe, and propose needed RNAs on public lands administered by the BLM in southern Idaho.

JUSTIFICATION

Brass Cap Kipuka (symbol: IDBRA) was selected to represent undisturbed examples of a major range habitat type. The type, in which alkali sagebrush and Idaho fescue are the dominant species, covers nearly 100 acres of the kipuka. In addition to this type, threetip sagebrush and Idaho fescue dominate a few acres of the kipuka. Also occurring within the proposed area, and surrounding the kipuka, is a large area of recent lava flows. Some of these flows are unvegetated, while others have a sparse vegetation of mixed shrubs. All of these situations are needed in a RNA network to include the range of natural diversity of Idaho (Wellner and Johnson, 1974). The lack of significant disturbance due to general inaccessibility to livestock makes Brass Cap Kipuka an especially good choice.

PRIMARY FEATURES

Botanic: K-055 sagebrush steppe. Idaho Natural Diversity Scorecard-eastern Snake Plain sage/grass. Other vegetation type-ARL04/FEID; ARTR2/FEID. Endemic-*Primula wilcoxiana* (recommended from listing as Federal Threatened, Steele et al., 1981).

Zoologic: Unknown

Aquatic: None

Landforms: Basin; kipuka; lava flows

Geologic: Igneous; basalt; Pahoehoe lava; Aa lava; Recent.

Alterations: None

LOCATION, SIZE, OWNERSHIP, ACCESS

District: Shoshone

Resource Area: Monument

County: Blaine

Latitude: 43°22'00" N

Longitude: 113°42'00" W

Section(s): SE $\frac{1}{4}$ of Section 34 and SW $\frac{1}{4}$ of Section 35, T1N, R23E; W $\frac{1}{2}$ Section 2 and all of Section 3, T1S, R23E.

Location: Brass Cap Kipuka is located about 1.0 mile south of Idaho Highways 20 and 26, from a point 1.3 miles east of Lava Lake.

Size: 854 acres total (kipukas = 120 acres)

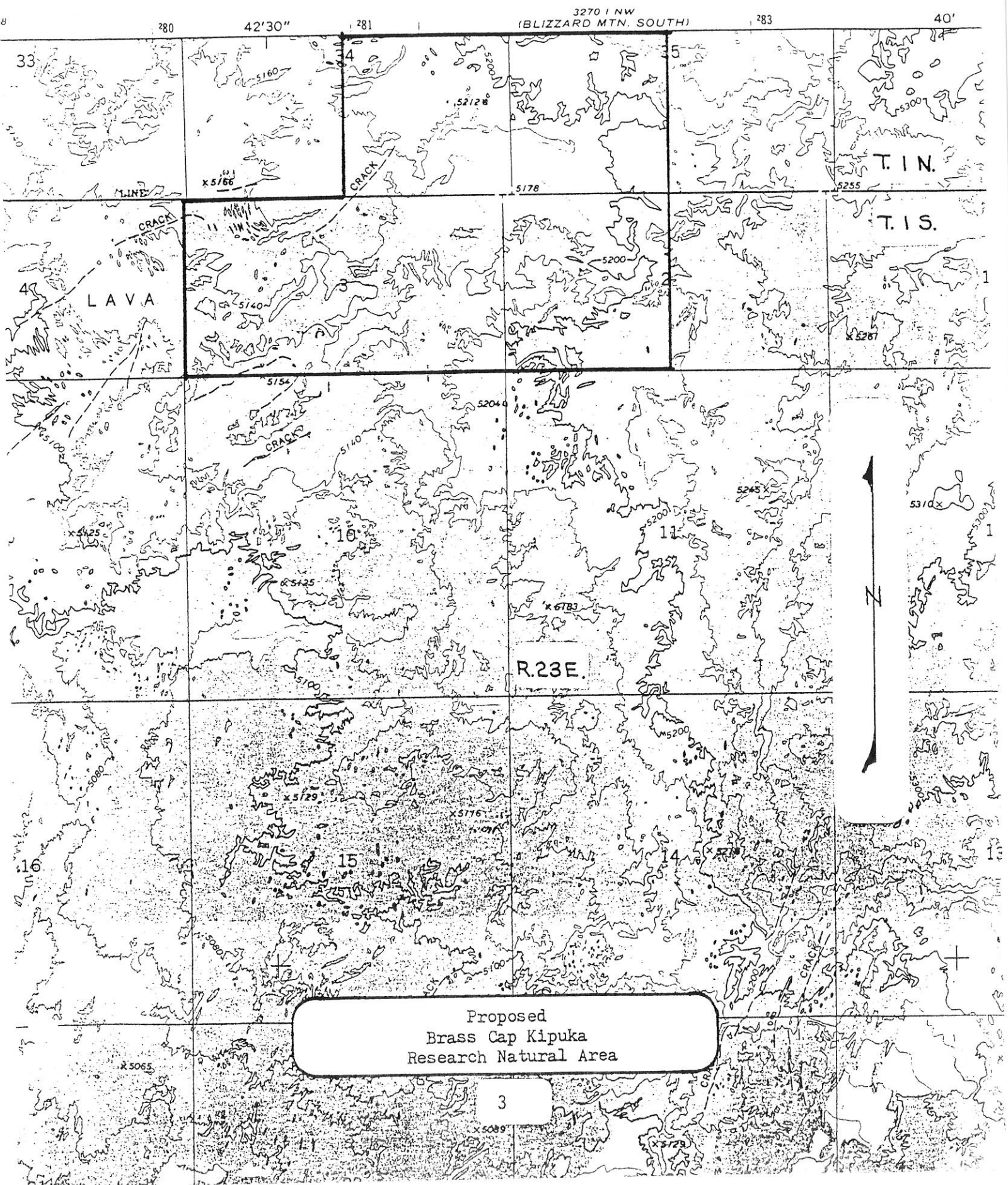
USGS Quad: Little Park, Idaho (7.5'), 1972

Aerial Photos: BLM Photo 05-23-11 (1980)

Elevation: The kipuka is at an elevation of 5,178 feet. It is surrounded by lava flows, the upper surface of which varies from 10 to 20 feet in height above the kipuka.

Physical Boundaries: From the SW corner of Section 3 (T1S, R23E), the proposed boundary runs north following the section line to the south boundary of Section 33. Here it turns east, following the section line to the $\frac{1}{4}$ corner of Section 34. Here it runs north to the center of Section 34, then due east to the center of section 35, where it turns south until it reaches the southern section line of Section 2 (T1S, R23E). From this point it follows the section line due west to the SW corner of Section 3 (see map, page 3).

Access: Brass Cap Kipuka is reached by a one-hour hike over very rough lava from the point described under "Location" above.



Proposed
Brass Cap Kipuka
Research Natural Area

Ownership/Status: Surface and mineral rights are administered and managed by the BLM.

PHYSICAL AND CLIMATIC CONDITIONS

Climate: The weather station nearest to the site is located at the Craters of the Moon National Monument (Station No. 10-2260); it is located 8 miles to the east at an elevation of 5,897 feet. Temperature and precipitation data are available for the period 1962-1981, and are summarized in Table 1 (Molnau, 1983).

Table 1. Temperatures and precipitation for Craters of the Moon, Idaho, weather station (1962-1981).

Month	Temperature (°F)		Precipitation (in)	
	Average Maximum	Average Minimum	Mean Monthly	Percent Annual
January	27.5	8.2	2.82	16.4
February	33.5	13.4	1.51	8.7
March	39.1	18.2	1.29	7.6
April	50.9	27.4	1.30	7.6
May	63.8	36.2	1.86	10.8
June	72.3	43.9	1.37	8.0
July	83.8	50.9	0.55	3.2
August	81.3	48.9	0.83	4.9
September	72.2	41.0	0.82	4.8
October	58.3	30.6	0.84	4.9
November	40.7	20.4	1.58	9.1
December	29.5	10.6	2.41	14.0
Annual	54.0	28.9	17.18	100.0

The average monthly maximum temperature reaches its highest point during the month of July, a month which also marks the beginning of a pronounced dry season; less than 20 percent of the total annual precipitation falls during the period from July through October. Two periods of peak precipitation occur, one in January and the other in May. The length of the period between the last freezing temperature (32° F) in the spring and the first freeze of fall is about 107 days. As an elevational difference of about 700 feet exists between this station and the kipuka, general weather patterns are probably similar, although the absolute values of the data are only approximate. The kipuka, being the lower of the two is perhaps slightly warmer and drier than the data indicate.

Physiography: The Brass Cap Kipuka lies within the eastern Snake River Plain section of the Columbia Intermontane geomorphic province. The kipuka is a nearly flat, topographic depression surrounded by lava flows (Photo 1). It is elongate in an east-west direction, and is connected in the southeast corner to a much smaller depression. Another small kipuka lies to the southwest of the larger one, in the center of Section 3.

Geology: No detailed investigation of the geology of the site has been conducted. Studies have been completed, however, at the Craters of the Moon National Monument, which is geologically similar (Stearns, 1947; Murtaugh, 1961). The kipuka is surrounded by at least two younger lava flows. The older of these flows resembles and is perhaps equivalent in age to the Blue Dragon flow of the National Monument. Like the latter flow, the surface is coated with a pale blue mineral, hence the name. The Blue Dragon flow at the Craters of the Moon comprises a number of Pahoehoe flow units; the similar flows which surround the Brass Cap Kipuka are also of the Pahoehoe type. Murtaugh (1961) indicates that some of the Blue Dragon flows are the most recent in the Monument. Younger flows which locally overlie the "Blue Dragon" flows near the kipuka are of Aa lava. No ages are available for the flows.

Soils: The soils in the kipuka are part of the Goodington-Manard complex. The two components are intricately intermingled with the Goodington silt loam accounting for about 55 percent of the area, and the Manard stony silt loam making up 30 percent. Also present are the Polecreek very stony loam (10 percent) and rock outcrop (5 percent). The Goodington soil is deep; it has slow permeability with an effective rooting depth of 40 to 60 inches. The Manard soil is moderately deep with very slow permeability; the effective rooting depth is 20 to 40 inches. Both soils were derived dominantly from basalt and are well drained.

RESOURCES

Principal Resources: The principal feature of the Brass Cap Kipuka is the extensive vegetation dominated by alkali sagebrush (*Artemisia longiloba*)^{1/} in ungrazed condition (Photo 2). The dominant grass in the understory is Idaho fescue (*Festuca idahoensis*). Although this type is also found in the Owyhee Uplands, it is most extensive in Blaine and Camas counties; the type is restricted to claypan soils which are supersaturated in the spring (Hironaka et al., 1983).

A small area in the southwestern extension of the kipuka is dominated by threetip sagebrush (*Artemisia tripartita*); the understory in this type is

^{1/} Botanical nomenclature for the genus *Artemisia* follows Beetle (1960). The authority for all other taxa is Hitchcock and Cronquist (1973). Plant symbols follow Plummer et al. (1977).

Photos 1, 2, and 5 by S. Calicco; Photos 3, 4, and 6 by E. W. Tisdale

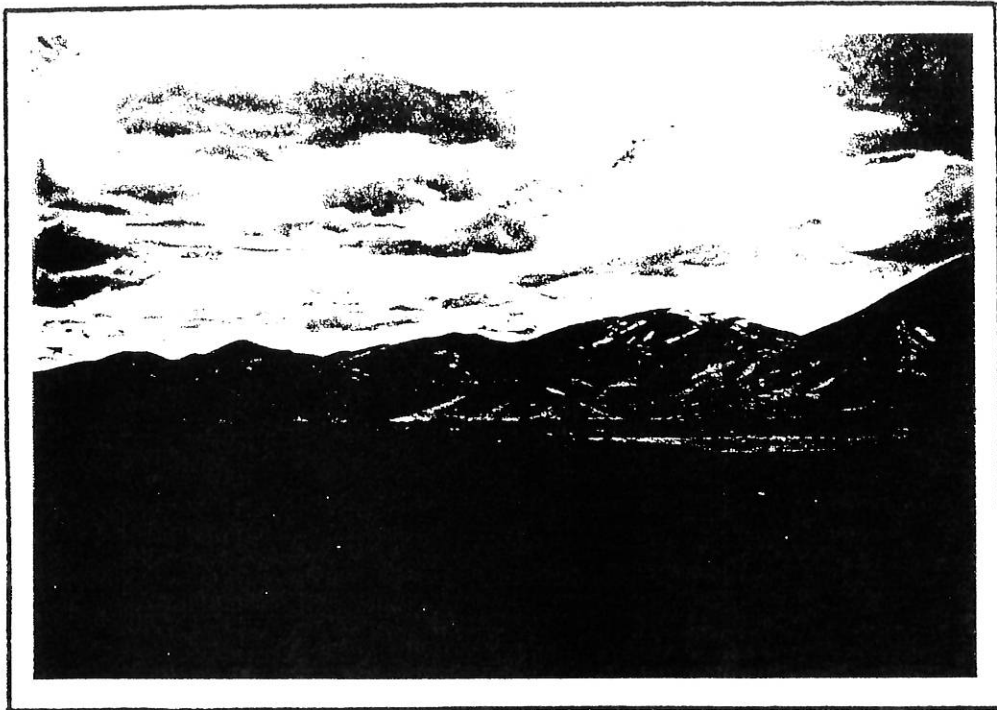


Photo 1. Brass Cap Kipuka surrounded by lava flows.
Pioneer Mountains in the background.

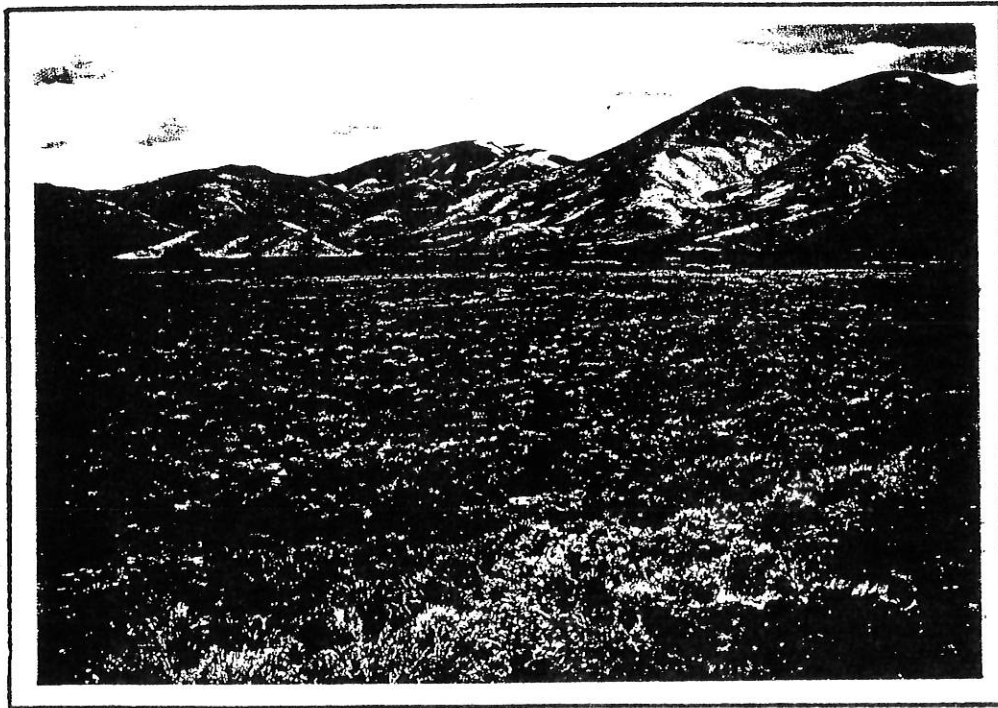


Photo 2. Extensive stand of Artemisia longiloba on
Brass Cap Kipuka.

also dominated by Idaho fescue. Both basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*) and mountain big sagebrush (*A. tridentata* ssp. *vaseyana*) are also present but uncommon.

Biotic Systems: As described above, most of the kipuka is covered by a single major range habitat type, although a small area of a second type also occurs. A brief summary of the types present and their distribution follows.

ARLO4/FEID h.t.: The most extensive of the types present, it is the only type represented in the larger portion of the kipuka where it covers about 100 acres. It is developed on the Manard stony silt loam (Photo 3).

ARTR2/FEID h.t.: This type occupies only a few acres in the southwestern extension of the kipuka (Photo 4).

In addition to these types, a mixed shrub vegetation is developed on some of the lava flows which surround the kipuka (Photo 5). The floristic composition of the small kipuka near the center of Section 3 is not known.

Idaho Natural Diversity Scorecard Category (Crawford, 1982): eastern Snake Plain sage/grass.

Historic Alteration: The area is inaccessible to domestic grazing animals due to the large expanse of very rough lava which surrounds it (Photo 6). In addition, no water is available. The only evidence of disturbance is that due to frost-heaving of the high clay content soil.

Geology: The kipuka has considerable geologic value as an example of an uncommon geologic phenomenon, and its consequent scientific interest.

Physiography: The site is of considerable interest because of the physiography associated with the geologic phenomenon.

Soils: The high clay content of the soils in combination with their super-saturated condition in the spring could lead to severe compaction due to trampling, if used for grazing during that period (Hironaka et al., 1983). Such use is not feasible, however, due to the general inaccessibility of the site.

Diversity: A high degree of floristic diversity is present on the site. At least 50 species are present within the ARLO4/FEID h.t. alone (see Appendix 1). Overall habitat diversity is low.

Other Known Examples of Primary Features: Although other sites of the ARLO4/FEID h.t. are known, their accessibility, and the susceptibility to trampling of the clay-rich soils, make the occurrence of examples of this vegetation in similarly high quality very rare.

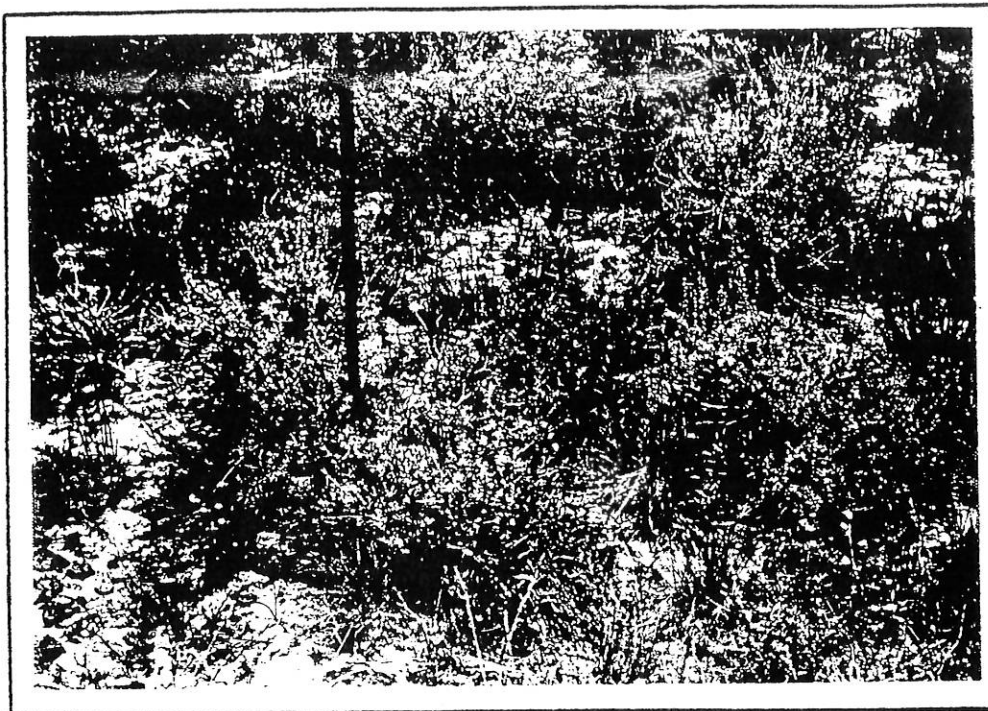


Photo 3. Alkali sagebrush/Idaho fescue habitat type
on Brass Cap Kipuka.



Photo 4. Threetip sagebrush/Idaho fescue habitat type
on Brass Cap Kipuka.

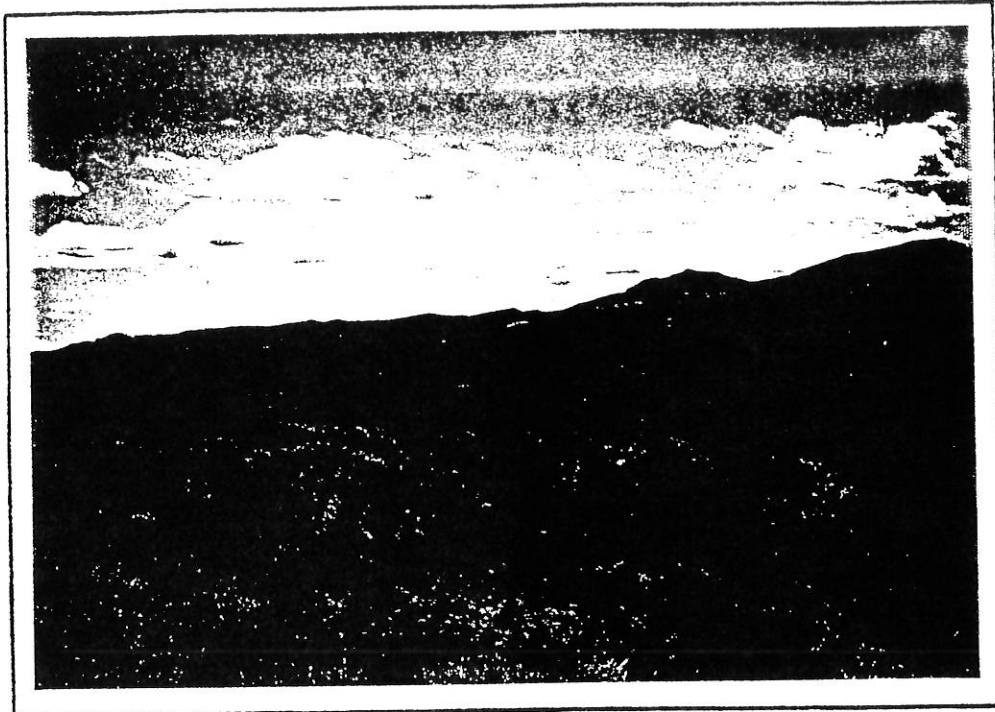


Photo 5. Mixed shrub vegetation on the lava flow at the edge of Brass Cap Kipuka.

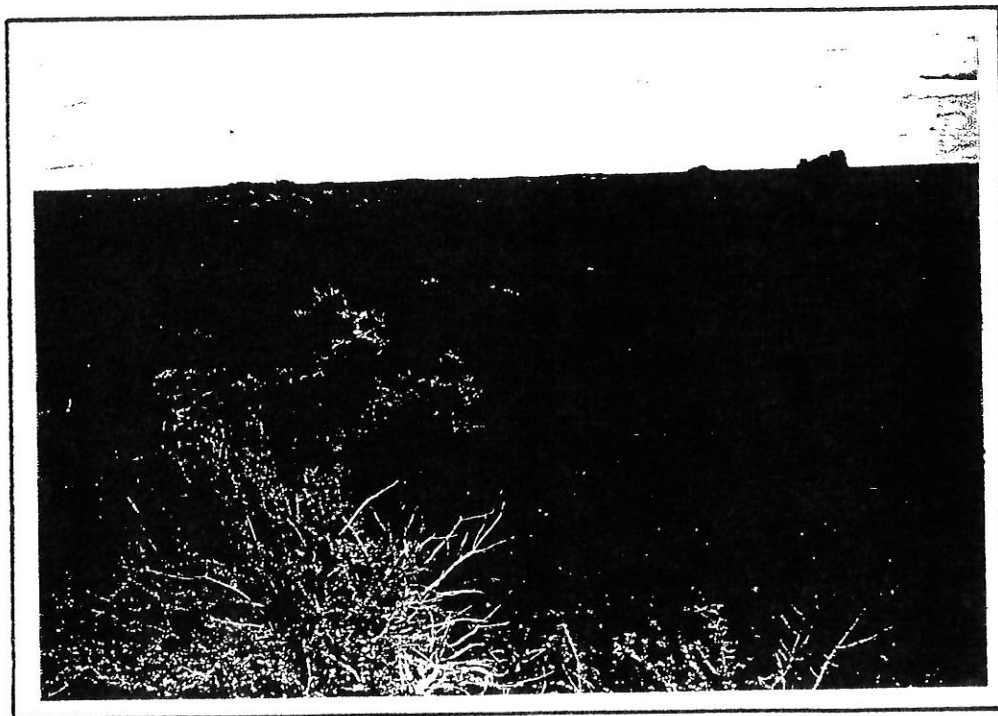


Photo 6. Very rough lava surrounds Brass Cap Kipuka.

VALUES AND POSSIBLE CONFLICTS

Cultural Values: Fragments of worked obsidian found in the kipuka indicate that its location was known in prehistoric times. No inventory of the site has been conducted.

Mineral Values: As of August, 1983, no mining claims had been established within the proposed area. The geology of the area makes it unlikely that any such claims will be established at a future date.

Grazing Values: Minimal due to the lack of water and general inaccessibility because of the large expanse of rough lavas which surround it.

Timber Values: None

Watershed Values: The kipuka has no external drainage.

Recreation Values: The site is of high scenic value, and offers an opportunity for primitive recreation and solitude, although most recreationists will most likely be drawn to the Craters of the Moon National Monument, which lies only eight miles to the east. In any case, recreational use by foot travelers is unlikely to conflict with proposed RNA designation. No ORV usage has occurred on the site, and such usage is unlikely due to impassable terrain.

Transportation Plans: No roads exist within the proposed area, and no roads are currently being planned.

Wildlife Values: Evidence of mule deer and coyote was seen, as well as a number of non-game species of birds. Appendix II lists possible wildlife species in the plant communities found in the proposed RNA.

Other Values: None

MANAGEMENT CONSIDERATIONS

The high quality of the vegetation in Brass Cap Kipuka suggests that conservation of the resource values is consistent with current management practices.

INFORMATION SOURCES

Shoshone BLM District
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