



United States Department of the Interior

NATIONAL PARK SERVICE
P.O. Box 37127
Washington, D.C. 20013-7127

IN REPLY REFER TO:

L60(490)

Memorandum

To: Regional Director, Pacific Northwest Region

From: Director *Edward J. Davis Sr.*

Subject: Research Natural Area Proposal: Carey Kipuka, Craters of the Moon National Monument

Your proposal to designate the Carey Kipuka Research Natural Area in Craters of the Moon National Monument is approved.

Your justification is clear that, based on comparison with ecologically similar areas in the region, the area is an outstanding example of mixed sagebrush and grass communities. The lack of grazing and human disturbance makes the site a suitable benchmark for monitoring and assessing the effects of human influences in the surrounding region. The very low level of visitor use and remote location in the heart of the park's wilderness augur well for protecting the integrity of the site.

RNA designation is an important component of strategic planning for park use and management. We acknowledge the park's initiative in proposing this RNA in the 1992 general management plan and in following through in implementing this recommendation. The designation underscores the Carey Kipuka's importance for conserving the region's biological diversity and for long-term ecological monitoring, as evidenced by 35 years of vegetation studies at the site. It also underscores the Service's commitment to protect the site, and to encourage appropriate scientific uses.

We encourage you to review the status of available inventory and monitoring data for the site and to include appropriate proposals in the resource management plan to fill identified gaps. Special consideration should be given to coordination of these activities with ecologically similar sites elsewhere in the region.



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Pacific Northwest Region
83 South King Street, Suite 212
Seattle, Washington 98104



N44(PNR-RE)

JUN - 9 1993

Memorandum

To: Chief, Wildlife and Vegetation Division

From: Regional Director, Pacific Northwest Region

Subject: Research Natural Area Proposal: Carey Kipuka, Craters of the Moon

Enclosed is a copy of the subject proposal. The proposed Carey Kipuka Research Natural Area (RNA) is located 22.53 km (14 mi.) east of Carey, Idaho in the south end of Craters of the Moon National Monument. The kipuka, which is an area of older landscape surrounded by recent lavas, is isolated within the wilderness area of the Monument. The proposed Carey Kipuka Research Natural Area occupies 68.9 ha (170.3 acres) and is part of the Snake River plain. If this area is established, it will be the first RNA designated within a National Park Service area in the state of Idaho and the eleventh one in the Pacific Northwest Region.

The evaluation of Carey Kipuka by the Idaho Natural Heritage Program and the National Park Service has concluded that the area is an excellent representation of the Low Sagebrush Theme. Of the six sites in Oregon and Idaho that could represent this theme, Carey Kipuka was judged to be the best.

I believe this would be a valuable addition to the Natural Area system and would serve to foster research in the National Park System. I recommend its approval.

for Mike Callahan
Charles H. Odegaard

Enclosure

cc:
Superintendent, Craters of the Moon w/o enc.
PNR-RS, JLarson w/enc.
PNR-OR, KJoep w/enc.

NATURAL AREA INFORMATION

This form should be made in quadruplicate. The original should be submitted to the Washington Office through the Regional Director. One copy should be furnished to the region. One copy should be sent to the applicable Service Center (Chief, Office of Resource Planning) and one copy retained for the park Research Natural Area files. See reverse for further instructions.

TO: WASHINGTON OFFICE - ATTENTION: Chief, Office of Natural Science Studies (N)

THROUGH: Regional Director

1. NAME OF NATURAL AREA	CAREY KIPUKA
2. ADMINISTERING AGENCY	NATIONAL PARK SERVICE, DEPARTMENT OF INTERIOR
3. SUPERVISING FIELD UNIT	CRATERS OF THE MOON NATIONAL MONUMENT
4. STATE AND COUNTY	BUTTE, IDAHO
5. LATITUDE AND LONGITUDE <i>(This information will not be given to the general public)</i>	42 19' 00", 113 37' 30"; T1S, R24E
6. PRIMARY TYPE ON AREA	Low Sagebrush Theme, Low Sagebrush/Idaho Fescue Sub-theme
7. OTHER IMPORTANT TYPES REPRESENTED ON AREA	
A. BOTANIC	Low Sagebrush/Idaho Fescue Association
B. ZOOLOGIC	Representative of High Desert Area
C. GEOLOGIC	Underlain by Quaternary Snake River Basalt; Surrounded by aa lava of the Carey Kipuka, Little Park flows, which emanated from Silent Cone 6000 years ago.
D. AQUATIC	No surface water sources within the kipuka.
8. ACREAGE	68.9 ha., 170.3 acres
9. ELEVATION AND TOPOGRAPHY	Maximum elevation is 1639.2 m (5378'), minimum elevation is 1592.6 m (5225'). A kipuka is an "island" of original topography surrounded by lava flows.
10. FOR INFORMATION CONTACT:	Superintendent, Craters of the Moon NM, POB 29, Arco, ID 83213

PREPARED BY: Vicki J. Snitzler-Neeck	TITLE Res. Man. Spec.	DATE 3-27-93
SUPERINTENDENT (Signature) 		DATE 5-28-93

PROPOSAL TO ESTABLISH A CAREY KIPUKA RESEARCH NATURAL AREA

Narrative Addendum to Form 10-229

LOCATION:

The proposed Carey Kipuka Research Natural Area (PRNA) is located 22.53 km (14 mi.) east of Carey, Idaho in the south end of Craters of the Moon National Monument. A kipuka is an area of older landscape surrounded by recent lavas. The Monument is administered by the National Park Service (NPS). The kipuka is isolated within the wilderness area of the Monument.

Access is via a series of dirt roads within the Shoshone District of the Bureau of Land Management that begin at the intersection of the Carey-Kimama Desert Road and U.S. Highway 20/26/93, about 6.44 km (4 mi.) northeast of Carey. Follow the Carey-Kimama Desert road to the Laidlaw Park road. From this point the kipuka can be approached from either the northeast side or the northwest side. Both sides have short, rough hiking trails that lead to the interior of the kipuka. Due to the unmarked nature of the roads access can be moderately difficult.

MAPS OF THE PRNA:

1. Craters of the Moon National Monument Regional Map, prepared by the NPS Denver Service Center for the Monument's General Management Plan.
2. USGS Little Park 7.5 Quadrangle; only a portion of the map is enclosed.

DESCRIPTION OF THE AREA:

The PRNA occupies 68.9 ha (170.3 acres) in the southwest corner of the Monument which is part of the Snake River plain. A relatively flat volcanic surface that bisects southern Idaho. The kipuka is underlain by Quaternary Snake River Basalt similar to that of Little Park. It is surrounded by aa lava of the Carey Kipuka and Little Park flows, which are presumed to have emanated from Silent Cone about 6,600 years ago.

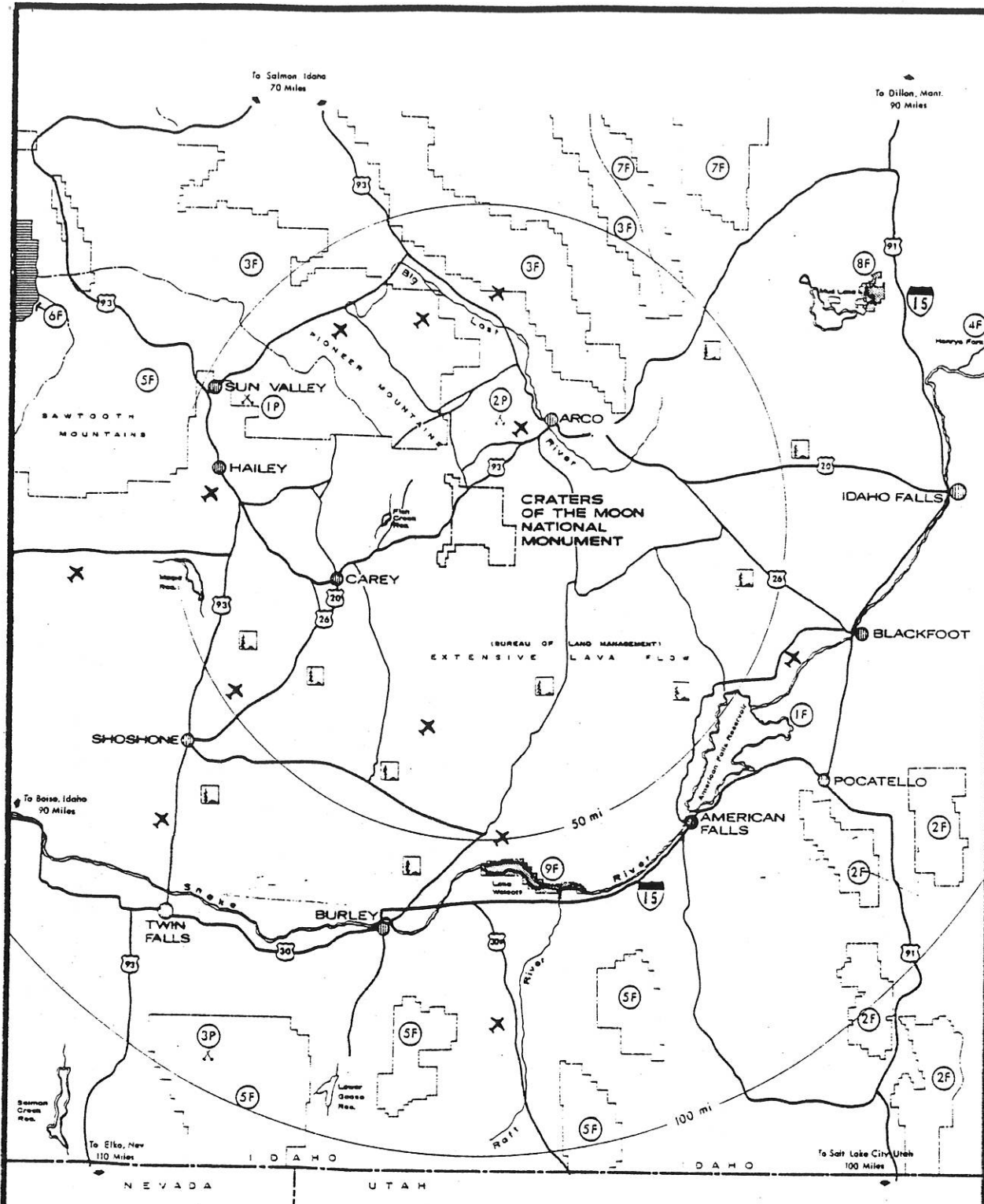
The kipuka is representative of Low Sagebrush-Idaho Fescue vegetation of the Upper Snake River Plain. It is an area that has been minimally disturbed by fire, grazing, or other similar influences.

CLIMATE:

The continental climate of the area is characterized by variable precipitation, cold winters, and hot dry summers. Winds are common at all seasons. The average annual temperature is 5.5 degrees C (42 degrees F), and the mean annual precipitation is about 35.56 cm (14 in.). Snow covers the soil in the winter and melts slowly in the spring. There is usually a plentiful supply of soil moisture at the beginning of the growing season. Summer rains are usually of short duration and soil moisture is quickly lost through evaporation and transpiration.

SOILS:

Soils of the kipuka were formed mainly from loess, basaltic ash, and basaltic cinders. They are six soil groups within the kipuka, Tetonia silt loam, Eagle Cone very stony silt loam, Carkip silt loam, Goodington silt loam, Gooding loam, and Bancroft silt loam.



KEY TO AREAS

- | | |
|-------------------------------|-------------------------------------|
| (1P) AMERICAN FALLS RESERVOIR | (7F) TARGHEE NATIONAL FOREST |
| (2P) CARIBOU NATIONAL FOREST | (8F) CAMAS NATIONAL WILDLIFE REFUGE |
| (3P) CHALLIS " " | (9F) MINIDOKA " " |
| (4P) HENRY'S FORK-SNAKE RIVER | (1P) SUN VALLEY |
| (5P) SAWTOOTH NATIONAL FOREST | (2P) BLIZZARD MTN. } SKI AREA |
| (6P) SAWTOOTH PRIMITIVE AREA | (3P) MAGIC MTN. |

KEY TO SYMBOLS

- ROADS
- CITY OR TOWN
- AIR STRIP
- AGRICULTURE AND GRAZING
- MONUMENT BOUNDARY
- NATIONAL FOREST
- NATIONAL WILDLIFE REFUGE
- FOREST SERVICE PRIMITIVE AREA
- RECREATION FACILITY
- FEDERAL
- PRIVATE

CRATERS OF THE MOON NATIONAL MONUMENT REGIONAL MAP

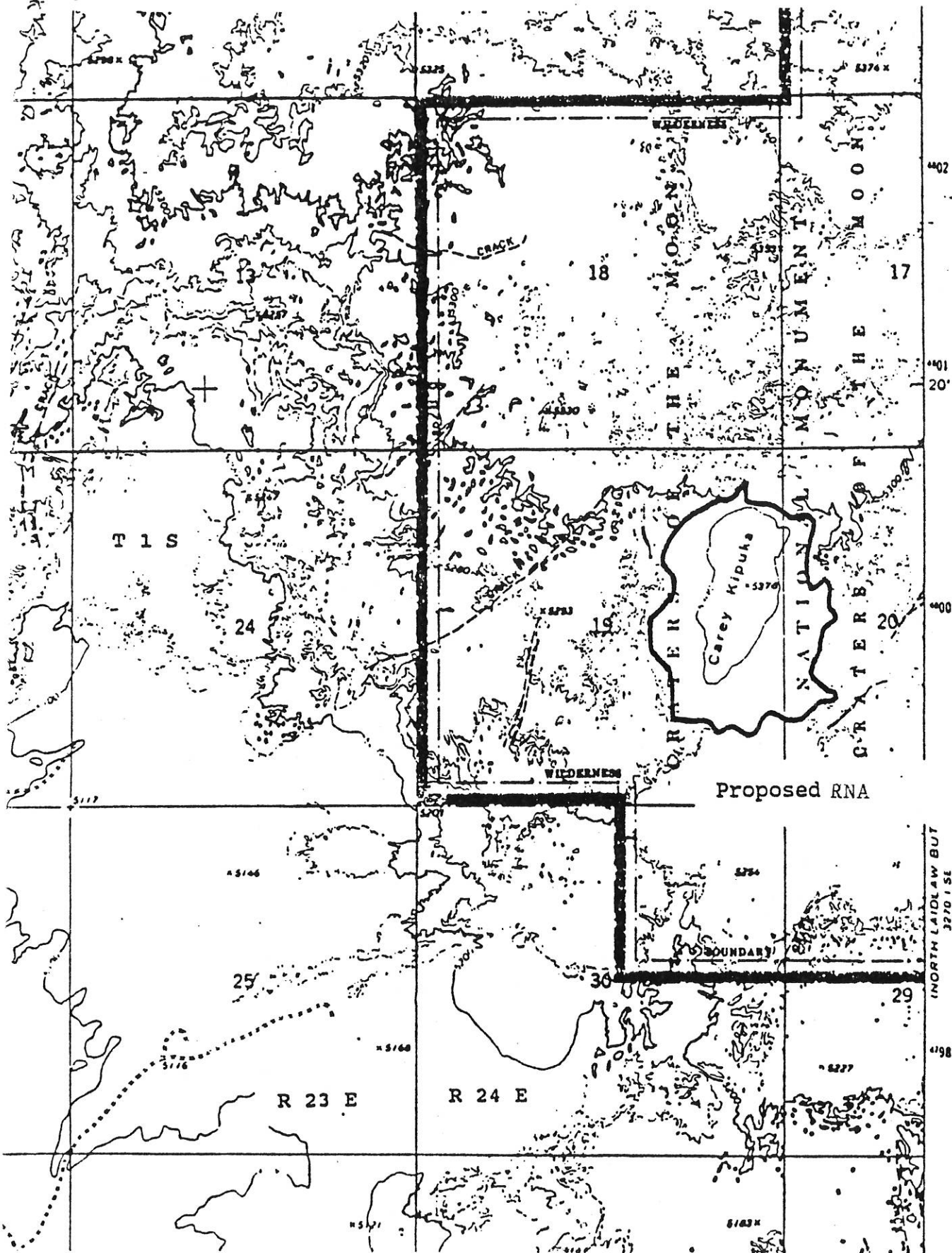
0 5 10 20 30 SCALE IN MILES

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE



Figure 3. Location of Carey Kipuka, the _____ Unit of the proposed Craters of the Moon National Monument RNA (portion of Little Park 7.5' Quadrangle).

93



GEOLOGY:

The Craters of the Moon lava field covers 1600 square kilometers, contains more than 30 cubic kilometers of lava flows and pyroclastic deposits, and is the largest predominantly Holocene lava field in the coterminous United States. The field includes at least 60 lava flows, 25 cinder cones, and eight eruptive fissures. The lava field at Craters is at the northern part of the Great Rift. The rift system is composed of separate rift sets. South of the Great Rift is the Open Crack rift set, the King Bowl rift set, and the Wapi rift set. There were eight eruptive periods along the Great Rift that ranged from several hundred to about three thousand years. It is predicted that the next eruptive period will be within the next one thousand years.

WATER:

There are no surface water sources within the kipuka.

FAUNA:

Extensive information on the fauna within the kipuka is lacking. Evidence of rodents, bobcats, snakes, coyotes, sage grouse, and deer have been noted.

FLORA:

The entire kipuka is occupied by sagebrush-grass vegetation, but variation in local habitats has resulted in significant differences within this complex. Three major plant communities have been recognized with two of these occupying most of the area. These communities are the *Artemisia tripartita*/*Festuca idahoensis*, the *Artemisia tridentata*/*Festuca idahoensis*/*Agropyron spicatum*, and *Artemisia longiloba*/*Festuca idahoensis*/*Stipa thurberiana*.

The *Artemisia tripartita*/*Festuca idahoensis* association occurs over a large part of the kipuka, on north and east slopes and slight depressions. It is associated with the moister and/or cooler parts of the area, and with relatively deep, fertile soils. The shrub cover consists of a stand of *Artemisia tripartita* averaging 14 plants per 9.29 sq. m. (100 sq. ft.), with a mean foliage cover of 10%, and a height of .52 m (1.7 ft.). The *Artemisia tridentata*/*Festuca idahoensis*/*Agropyron spicatum* community is largely confined to south and west slopes. It occurs on drier slopes than those of *Artemisia tripartita*/*Festuca idahoensis* type. The density of *Artemisia tridentata* is relatively low, ranging from three to seven mature individuals per 9.29 sq. m. (100 sq. ft.), with a mean foliage cover of 13%, and a height of 1.07 m. (3.5 ft.). The *Artemisia longiloba*/*Festuca idahoensis*/*Stipa thurberiana* is a small but sharply defined and edaphically determined community. The shrub cover consists of a thin stand of *Artemisia longiloba* with about 25 plants per 9.29 sq. m. (100 sq. ft.), but a foliage cover of only 1.5%, and a mean height of 25.4 cm. (10 in.).

CULTURAL RESOURCES:

The cultural materials observed during surveys of the Monument consist of an assortment of diagnostic and non-diagnostic artifacts suggesting a Late Archaic (ca. 2000-250 B.P.) affiliation. The Late Archaic Period is better known than any of the preceding periods in regional pre-history, and may, in part, represent Shoshonean occupation of the Upper Snake and Salmon River country. The kipuka was first surveyed in the mid-1960's and an open camp site was documented. This site was re-surveyed in 1992 and it contained several dozen flakes spread over a wide area. This site, like the other sites within the Monument are indicative of sporadic, seasonal, task specific use of the area. Most sites in the Monument are associated with water sources and game trails.

LAND USE:

On November 21, 1962 (Proclamation No. 3506) President John F. Kennedy added Carey Kipuka to the Monument, stating that the kipuka is scientifically valuable for ecological studies because it contains a mature, native sagebrush-grassland association which has been undisturbed by man or domestic livestock. The kipuka was included in the Monument's wilderness area in 1970. The kipuka is also being considered for nomination as a National Natural Landmark. The wide expanse of aa lava surrounding the kipuka has helped to protect it from livestock grazing. A previous researcher found no evidence of grazing by domestic livestock, but mention an unconfirmed verbal report of grazing by sheep during one winter in the 1920's. One time use of vegetation in a dormant state would not be likely to cause any observable changes.

Cheatgrass (*Bromus tectorum*) is abundant in some vegetation types in the kipuka, thought by some to be an indication of past grazing disturbance. However, surveys of numerous isolated kipukas of varying size, in the Craters of the Moon, Wapi, Hells Half Acre, Shoshone, and Cerro Grande lava fields have found cheatgrass in all of them. This indicates that cheatgrass has a tremendous dispersal ability, and has established itself in naturally disturbed gaps in pristine stands, especially those on loess substrates. A considerable mortality of Idaho fescue plants in Carey Kipuka was observed between 1961 and 1963. Much of the space released by this die-off was invaded by cheatgrass.

A trail, marked by cairns, leads to Carey Kipuka from Laidlaw Park. Recreational activity in the kipuka appears to be minimal. However, horse tracks have been observed in the kipuka on more than one occasion. The rough nature of the surrounding aa lava and lack of significant attractions, including hunting opportunity, will preclude significant recreational use of the area.

The kipuka is part of a prescribed natural fire zone according to the draft 1993 Fire Management Plan of the Monument. In this zone, man-caused fires are suppressed, while natural fires may be controlled at the discretion of Monument management.

Currently, types and levels of land use in Carey Kipuka are not considered incompatible with its designation and future use as a research natural area.

JUSTIFICATION:

The concept of recognizing and preserving outstanding natural areas has been supported by the NPS since the early 1960's. The 1991 draft NPS Natural Resource Management Guideline (NPS-77) addresses research natural areas in chapter 4, pages 13-17, under special park designations and selection, designation and management procedures.

The 1992 General Management Plan (GMP) for the Craters of the Moon National Monument states that Carey Kipuka will be designated as a research natural area in the section entitled Interrelationships with Studies, Plans, and Proposals. This section also discusses the nomination of Carey Kipuka as a National Natural Landmark. Appendix A provides a description of the Monument and includes a discussion of the importance of the vegetative community at Carey Kipuka.

Project Statement CRMO-N-150.06 Monitor Vegetative Communities in the latest version of the Monument's Resource Management Plan lists the eight permanent transects established in 1991 to use frequency data for monitoring changes in vegetative communities. A transect has been established in Carey Kipuka.

E.W. Tisdale from the Department of Range Resources at the University of Idaho who has conducted research at the kipuka since 1958 has long maintained the indispensability of Carey Kipuka for vegetative research. The kipuka provides a site for comparative research to areas that have been disturbed by grazing, as well as a site for monitoring fluctuations in presumably stabilized vegetation.

V. K. Hugie from the USDA Soil Conservation Service who conducted research on soils of the kipuka in 1964 maintains that the kipuka provides a site where plant-soil relationships can be observed with the assurance that they have not been influenced by domestic grazing, fire, or other factors. In this way the information collected can be extrapolated to other areas with similar soils.

In 1989, Robert K. Moseley of the Idaho Natural Heritage Program in conjunction with the NPS prepared an evaluation of Carey Kipuka for nomination as a National Natural Landmark. The site is representative of the Low Sagebrush Theme. Under this theme there are two sub-themes, Low Sagebrush/Bluebunch Wheatgrass and Low Sagebrush/Idaho Fescue. Carey Kipuka represents Low Sagebrush/Idaho Fescue. Of six sites in Idaho and Oregon that could represent these themes, Carey Kipuka was selected as the best example. The criteria for selection were illustrative character, condition, diversity, rarity, and value for science and education.

REFERENCES

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1988 A Review of Scientific Research at Craters of the Moon National Monument. Station Bulletin 50. Moscow, Idaho: University of Idaho, College of Forestry, Wildlife and Range Sciences.
- Hugie, V.K., H.B. Passey, and Erasmus W. Williams
1964 "Soil Taxonomic Units and Potential Plant Community Relationships In A Pristine Range Area Of Southern Idaho". American Society of Agronomy Special Publication 5: 190-204.
- Moseley, Robert K.
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1992 Craters of the Moon National Monument General Management Plan. Arco, Idaho.
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- Tisdale, E.W., M. Hironaka, and M.A. Fosberg.
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