

CRATERS OF THE MOON

Administrative History



ADMINISTRATIVE HISTORY

Craters of the Moon National
Monument, Idaho

By
David Louter

1992

CULTURAL RESOURCES DIVISION
PACIFIC NORTHWEST REGION
SEATTLE, WASHINGTON

TABLE OF CONTENTS

CRATERS OF THE MOON

Administrative History



TABLE OF CONTENTS

[COVER](#)

[ACKNOWLEDGMENTS](#)

[DEDICATION](#)

[Chapter 1](#)

INTRODUCTION

- A Weird and Beautiful Place
- Purpose of Report and Methods

[Chapter 2](#)

SETTING AND SIGNIFICANCE

- Location
- Purpose
- Geologic Significance
- Resources

[Chapter 3](#)

HISTORICAL BACKGROUND

- Early History
- Monument Movement

[Chapter 4](#)

LAND ISSUES AND LEGISLATIVE HISTORY

- The Northern Unit
 - 1928 Addition
 - 1930 Withdrawal
 - 1931 Exchange Bill
 - 1936 Deletion
 - Boundary Adjustments
 - Martin Mine--Last of the Private Land
- Other Land Issues
 - 1941 Highway Cession
 - 1952 School Lands Condemnation
 - 1962 Carey Kipuka Addition
 - 1970 Wilderness Designation
 - Park versus Monument

[Chapter 5](#)

ADMINISTRATIVE EVOLUTION

- Overview of NPS History and National Monuments
- Overview of Craters of the Moon's Administration
 - Early Years
 - The New Deal
 - The War Years
 - The Superintendents and the Postwar Era
 - Mission 66
 - Post-Mission 66 Era

Chapter 6

RESOURCE MANAGEMENT

- Overview of NPS Trends in Resource Management
- Resource Management at Craters of the Moon
 - Program Development
 - Natural Resource Management
 - Geologic Resources
 - Setting Guidelines
 - Site-specific Discussion--Frontcountry Features
 - Vegetation
 - Grazing
 - Control of Exotic Species
 - Fire Ecology and Management
 - Carey Kipuka
 - Wildlife Management
 - Program Development
 - Law Enforcement and Hunting
 - Reintroduction of Extirpated Species
 - Water Resources
 - Ice and Waterholes
 - Administrative Supply
 - Air Quality Management
 - Program Development
 - Idaho National Engineering Laboratory
 - External Threats--Some Past and Present Concerns
 - Cultural Resource Management

Chapter 7

RECREATION MANAGEMENT

- Skiing
- Wilderness/Backcountry Management
- Windshield Tourists

Chapter 8

INTERPRETATION

- Overview of Interpretation at Craters of the Moon
- The Program: Personal and Nonpersonal Services

Chapter 9

DEVELOPMENTS

Overview of NPS Development Trends
The Compact Monument: A Development Overview
The Physical Plant
Roads
Trails
Buildings and Visitor Facilities

[Chapter 10](#)
CONCESSIONS

Concessions: A Short History
Guide Services
Crater Inn: Hard Luck Business and Forgotten Rustic
The Blizzard Mountain Junction: Testing the Policy

[Chapter 11](#)
CONCLUSION

[ENDNOTES](#)
[BIBLIOGRAPHY](#)

APPENDICES

- A. [Chronology of Key Events](#)
- B. [Copies of Key Legislation](#)
- C. [Key Personnel](#)
- D. [Visitation Figures](#)

<<< [Previous](#) <<< [Contents](#)>>> [Next](#) >>>

CRATERS OF THE MOON

Administrative History



ACKNOWLEDGMENTS and DEDICATION

ACKNOWLEDGMENTS

The writing of this history depended upon many people. For the opportunity, I am indebted to John Findlay, my advising professor at the University of Washington, who recommended me for this job. I am equally indebted to Stephanie Toothman, chief of the Cultural Resources Division of the Pacific Northwest Regional Office, who hired and guided me through this project with a steady hand.

Research was a collaborative effort. I would like to thank Barry Mackintosh, the Park Service's bureau historian, for fielding my questions on agency history; Tom Durant, the NPS photo librarian, for helping me track down historic photos; and Jane Merritt, fellow graduate student and project historian, for retrieving files from the National Archives. I owe a special thanks to Marian Schenck, Horace Albright's daughter, who shared with me her father's impressions of the monument.

For assisting me in obtaining records from the National Archives and Record Center--Pacific Northwest Region, I thank Dwight Grinolds. At the Pacific Sierra Region, Kathleen O'Connor and Richard Boyden worked long distance to cut through red tape and to locate and send me important monument records, an invaluable service. In Idaho, Elizabeth Jacox assisted me with the Idaho State Historical Society's collections and willingly researched over the phone. I am particularly grateful for the assistance of Allan Virta and Mary Carter at Boise State University Library's Special Collections. The library's manuscripts were critical to the study of the monument's history, and both Allan and Mary were highly supportive and helpful. The librarians of the Pacific Northwest Regional Office, Nancy Hori, Mary Ellen Bartholomew, and Richard Arokhaar, deserve high honors for their enthusiastic support, interest, and energy in helping me with research questions and countless interlibrary loans.

I am also thankful for the assistance of others in the regional office. Kathy Jope tutored me in resource management, Rick Wagner in land issues, and Glenn Hinsdale in interpretation. Members of the Cultural Resources Division shared their knowledge of the monument as well as their humor and made me feel at home. In particular I extend my thanks to Marsha Tolon for helping me with the report's graphics, Claudia Chalden for transcribing interviews, and Associate Regional Director Richard Winters for his encouragement. Regional Historian Gretchen Luxenberg created the monument's archives and started its administrative history file prior to my arrival, and was a tireless source of enthusiasm, support, and criticism. She read every word of this tome--twice. I perhaps owe her the greatest debt.

But that honor goes to the former and present staff of Craters of the Moon. For their candid interviews and valuable assistance, I thank Dan Davis, Roger Contor, Paul Fritz, Robert Hentges, Robert Scott, Jon Jarvis, Robert Zink, Ed Menning, Robert Reynolds, David Clark, Neil King, Lora Hall, Shelly Hall, Bruce Edmonston, and Lee Taylor. Through them I gained a better understanding of the monument and its management.

To all those individuals and institutions who assisted me in research, read and commented on this document, and to those I may have forgotten, I also offer my sincere thanks.

Finally, I would like to thank my wife, Rebekah, a geologist who taught me to see the beauty of rocks and to know their names, and to appreciate places like Craters of the Moon.

DEDICATION

To the past, present, and future staff of Craters of the Moon National Monument. May this help.

[**<<< Previous**](#)

[**<<< Contents >>>**](#)

[**Next >>>**](#)

adhi/ack.htm
Last Updated: 27-Sep-1999

CRATERS OF THE MOON

Administrative History



Chapter 1: INTRODUCTION

A WEIRD AND BEAUTIFUL PLACE

Today, we open to the public for another year a different type of national monument. This is a scene of desolation, it is true, but it was not manufactured by shot and shell.

It was created by terrific winds that whirled out of space over a boiling earth. It was created by the settling of the earth's crust into its final shape hundreds of thousands of years ago.

Time has no reckoning here--only the works the Creator put here forever show us the wonders of the firmament. This park is aptly named Craters of the Moon. It is a weird spot, yet beautiful. Its mysteries half revealed in laval ridges are the mysteries of a celestial birth, the origin of the planet. Now the roarings are stilled and the lava no longer flows. But the spirit of the place remains, impressive and awesome beyond anything constructed by man.

Governor Clarence A. Bottolfson
on Opening Day, May 7, 1939 [1]

On May 2, 1924, President Calvin Coolidge created Craters of the Moon National Monument. The monument preserves around 53,500 acres of volcanic formations and lava flows on the northern rim of the Snake River Plain in southcentral Idaho. A desolate yet sublime landscape that could only be described as "weird," the monument has never failed to inspire, if not evoke ambivalent responses from even its most ardent supporters left speechless by the unusual lava terrain. As with anything unusual, a better understanding of the volcanic region increased the appreciation of its national significance. The monument's founding document reflected this trend, stating that Craters of the Moon's purpose was to preserve "a remarkable fissure eruption," its associated features, all of which were of scientific and educational value and general interest, contained in a "weird and scenic landscape peculiar to itself." For nearly seventy years, it has been the challenge of the National Park Service to manage this weird and beautiful place, to protect its scenic, natural, and historic resources, while providing for the educational needs and enjoyment of the visiting public.

PURPOSE OF REPORT AND METHODS

Although the monument's founding document gives the National Park Service general direction, federal regulations and agency policies further define the Service's responsibilities. The Park Service's Cultural Resource Management Guideline (NPS-28) calls for preparation of an administrative history for each unit in the National Park System. These studies

document the history of the park unit itself; they record the evolution of its management and programs in order to familiarize new superintendents, staff, and other agency officials with the area, and provide them with a historical basis for future management decisions.

This report constitutes the first administrative history for Craters of the Moon National Monument. Even though the monument is fast approaching its seventieth year, this study is at present the only comprehensive source for the monument's management history. Despite the monument's age, Craters of the Moon's written record is thin. Many of its records have been purged, and only through the heroic efforts of park staff were some important files and papers saved. For these reasons, research was limited to known and available records in national archive branches, manuscript collections, the files of Craters of the Moon and the Pacific Northwest Regional Office, as well as oral histories.

Preliminary research was accomplished in 1988 by Gretchen Luxenberg, Pacific Northwest Regional historian, who organized the monument's archives and collected material from the monument's files for an administrative history. The archives and files formed the nucleus of the research conducted by the author beginning in the summer of 1990. The monument existed prior to the creation of regions, and has been in both Western and Pacific Northwest regions at different times. Consequently, its records were stored in several repositories across the country, including the National Archives in Washington, D.C.; the National Archives--Pacific Sierra Region in San Bruno, California; and the National Archives--Pacific Northwest Region in Seattle, Washington.

With the assistance of librarians, records officers, and Park Service historians from this regional office and the Washington office, important documents were collected from the National Archives in Washington D.C., and were retrieved from the National Archives in San Bruno, California through a loan process. Research trips to the monument, the Idaho State Historical Society, and Boise State University uncovered important documents related to the monument's founding and management. Oral interviews with former superintendents took place in the fall of 1990 and the following year.

Because of the poor conditions of the monument's records and the constraints of time and funding, the author has relied on interviews with current and former staff members, annual reports, and planning documents to fill in the gaps. Mission 66 had the most profound effect on the monument's management, and thus the best known period of the area's management dates from that era, leaving the first several decades in the shadows.

The methodology guiding this study was utilitarian. What has occupied the staff the most in managing the area has been the central focus. As seen in the table of contents, this work is organized to allow the park staff to retrieve information by subject. The first several chapters provide background for the monument and its establishment, a subject heretofore largely unexplored. Subsequent chapters attempt to provide an overall summary and history of the monument's management and the development of management programs. With few exceptions, chapters follow a chronological format within the various topics, moving from broad to specific discussion.

Finally, a study of this type can only scratch the surface of the many issues facing the monument. Other historians, it is hoped, might place the monument within the larger context of preservation history. For those interested, many avenues remain to be explored, especially among the principal players in the monument's past. Some themes such as the history of geological research might be studied by more extensive research in the various government agency records held in the National Archives and the elusive personal papers of early geologists. In the end, while I have attempted to be as accurate and thorough as possible in preparing this document and have relied on the assistance of many, all mistakes are mine.

<<< [Previous](#)

<<< [Contents](#)>>>

[Next](#) >>>

adhi/chap1.htm
Last Updated: 27-Sep-1999

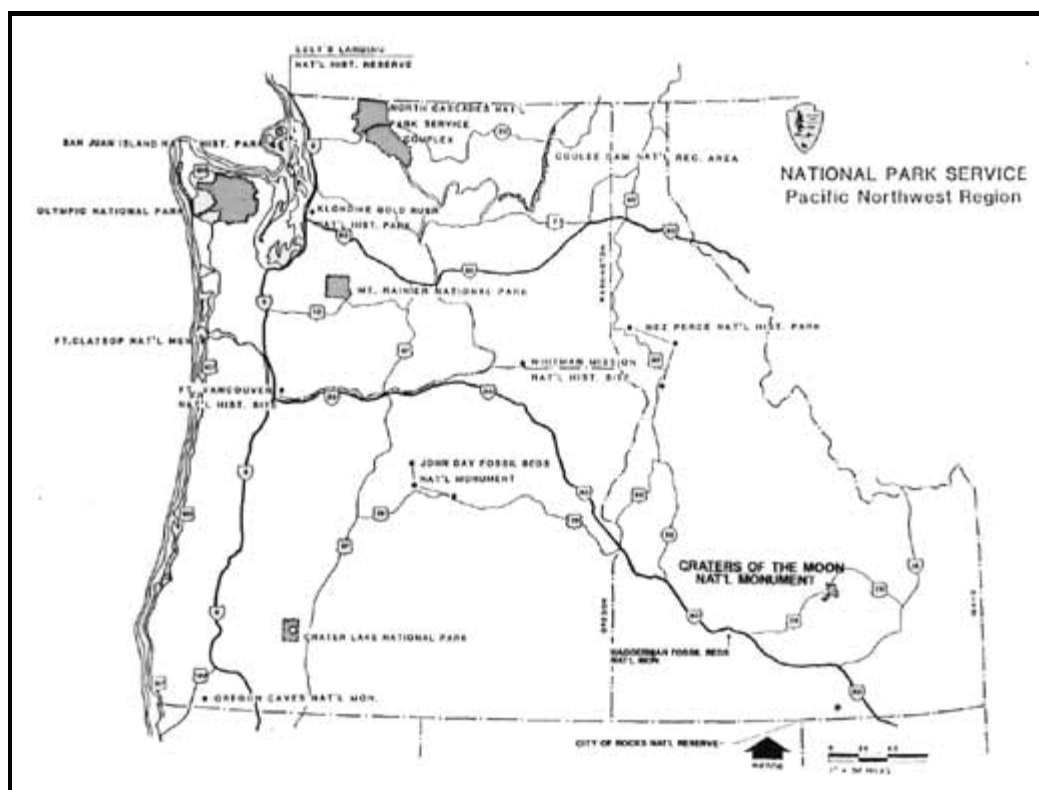
CRATERS OF THE MOON

Administrative History



Chapter 2: SETTING AND SIGNIFICANCE

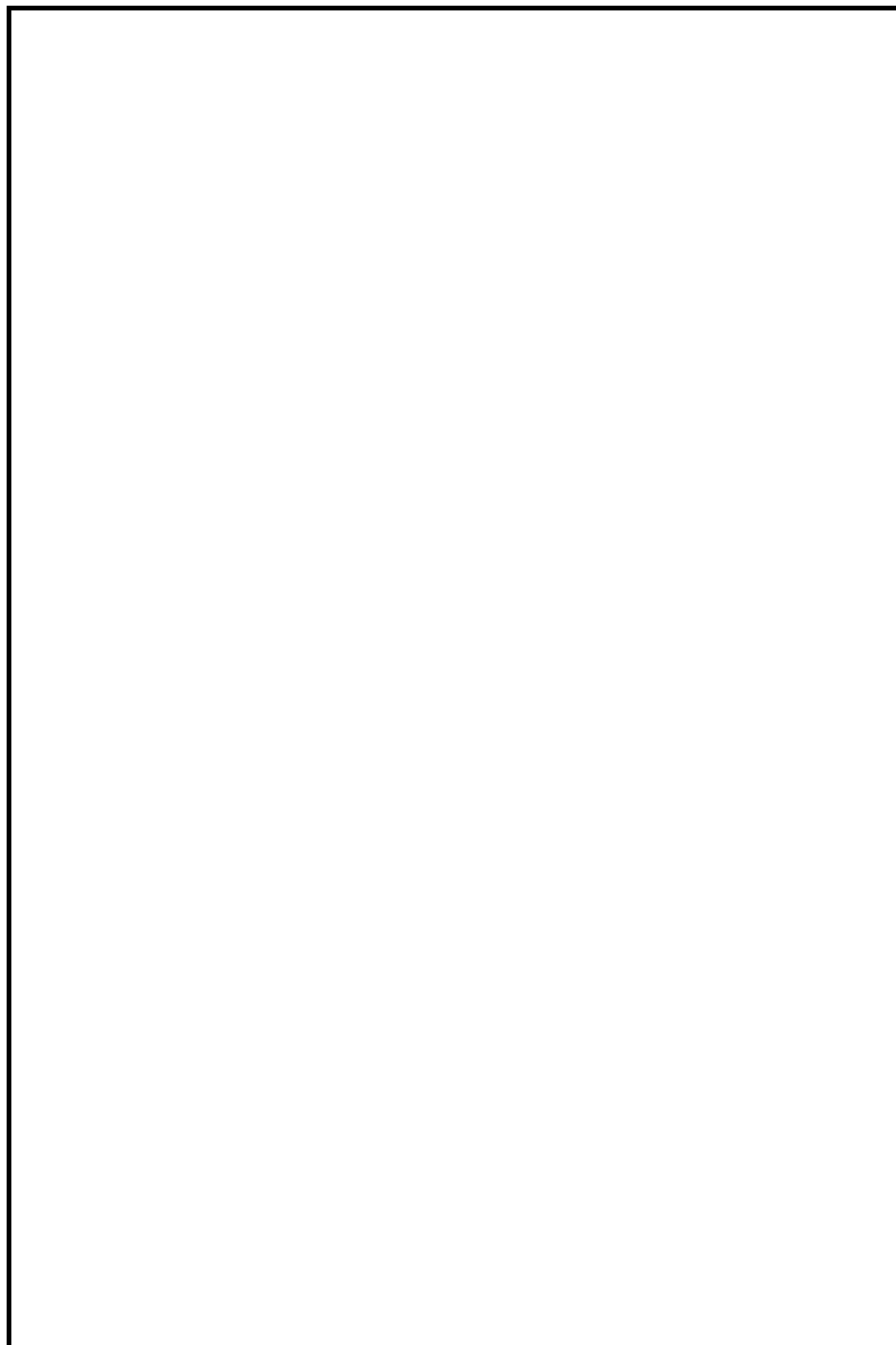
Located on the northern edge of the Snake River Plain, Craters of the Moon National Monument encompasses eighty-three of the twenty thousand square miles of lava landscape arcing across southern Idaho. The crescent-shaped plain cuts a wide and level swath through an otherwise mountainous state and defines the southern limits of the monument, while the Pioneer Mountain Range bounds it to the north. The monument's 53,545 acres embrace a small portion of the range's foothills and a vast expanse of lava flows to the south. Elevation ranges from 7,700 feet to 5,300 feet, with an elevation at the headquarters of 5,900 feet. For the most part, the monument's relief is low and studded with cinder cones. It has a semi-arid climate; hot, dry, and windy summers are followed by cold, dry, and windy winters. The average precipitation is seventeen inches a year, mostly in snowfall, which begins in November and generally lasts until April. Temperatures change dramatically. Average monthly highs fluctuate from twenty-nine degrees to eighty-four degrees Fahrenheit. In any given month it can freeze. This remote and harsh environment, however, possesses a strange beauty all its own. It is a place where in the high desert air sunlight glances off the twisted, broken, and billowed lava flows and formations in an array of shades and hues that is at once austere and captivating.

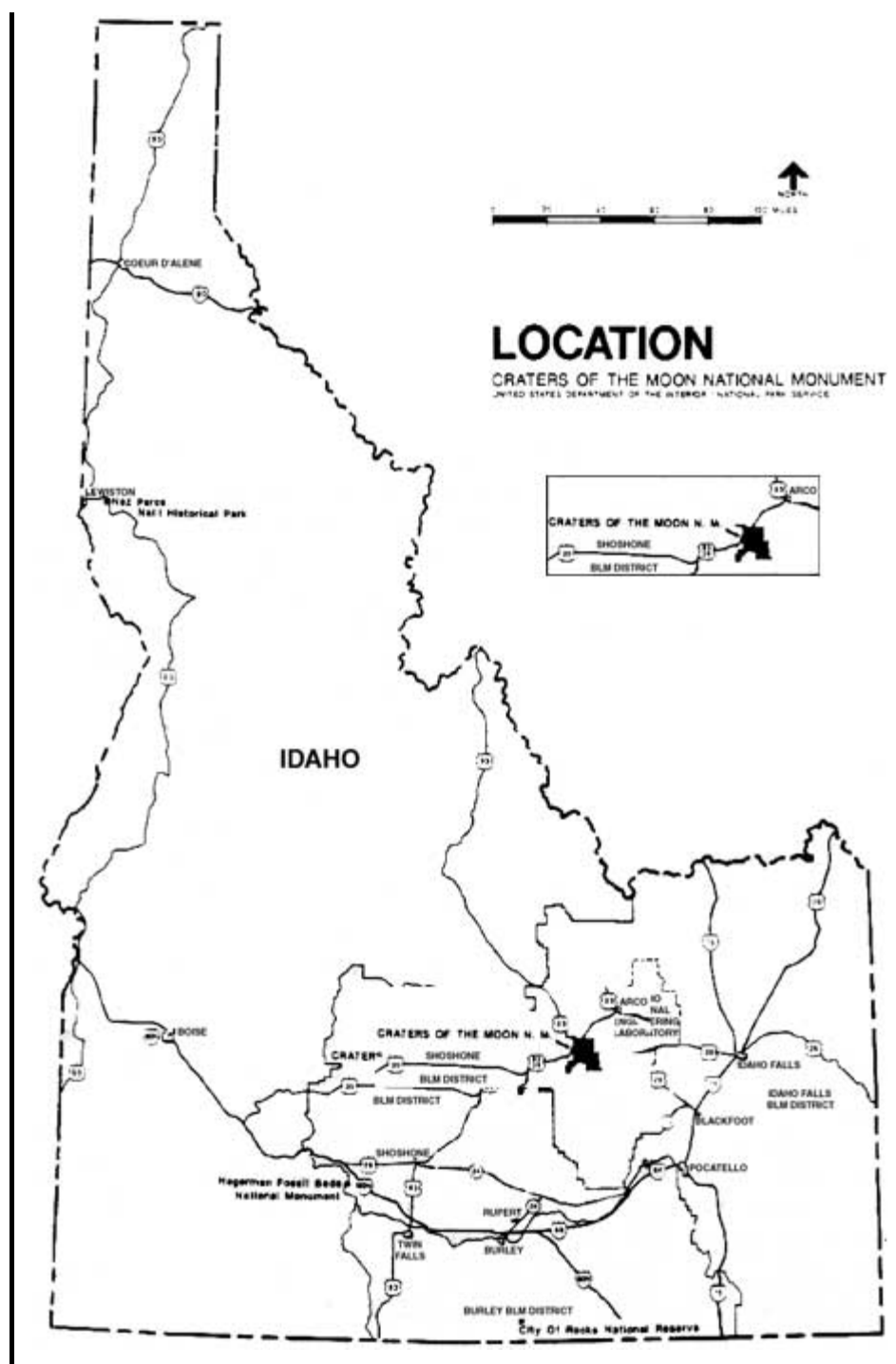


It is reached by U.S. Highway 20-26-93 running through the monument's northwestern corner, which connects an otherwise isolated area with several major population centers in

southern Idaho: Twin Falls, Idaho Falls, and Pocatello. Offering a two-hour drive from these locations, the highway also routes tourists between Yellowstone National Park and the region of Sun Valley and the Sawtooth National Recreation Area. The monument attracts a majority of its summer visitors from vacationers en route to these and points beyond.

Locally, the monument traverses land in two counties. Blaine County, comprising 13,361 acres of the monument, contains the tourist destination of Sun Valley. Butte County, in which the remaining 40,184 acres lie, is more rural, and includes Arco, the nearest town to the monument. Arco, the county seat, is eighteen miles northeast of the area and, with approximately twelve hundred residents, offers a full range of services. It is considered the major gateway town for the monument. Of the lands surrounding the monument nearly all are under Bureau of Land Management jurisdiction, and are used for sheep and cattle grazing, and mining; those lands south of the highway and adjacent to the monument fall under the BLM's Great Rift Wilderness Study Area classification.





PURPOSE

As stated in President Calvin Coolidge's proclamation of May 2, 1924, the purpose of Craters of the Moon is to preserve an area of unusual scientific and educational value and general interest

which contains a remarkable fissure eruption together with its associated volcanic cones, craters, rifts, lava flows, caves, natural bridges, and other phenomena characteristic of volcanic action; and...contains many curious and unusual phenomena of great educational value and has a weird and scenic landscape peculiar to itself. [1]

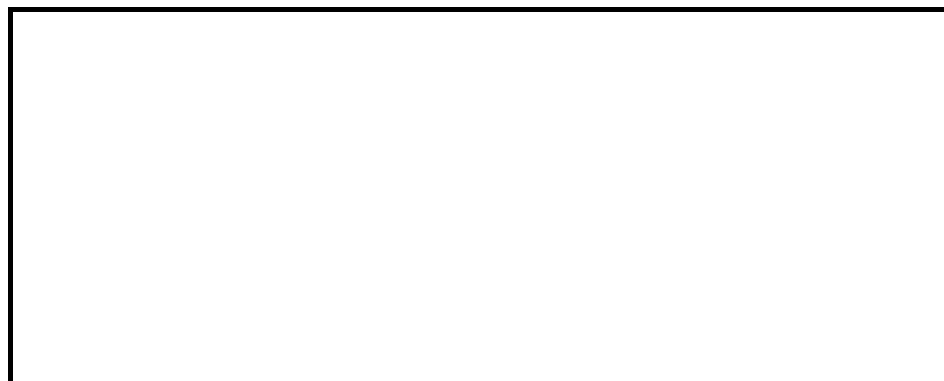
GEOLOGIC SIGNIFICANCE

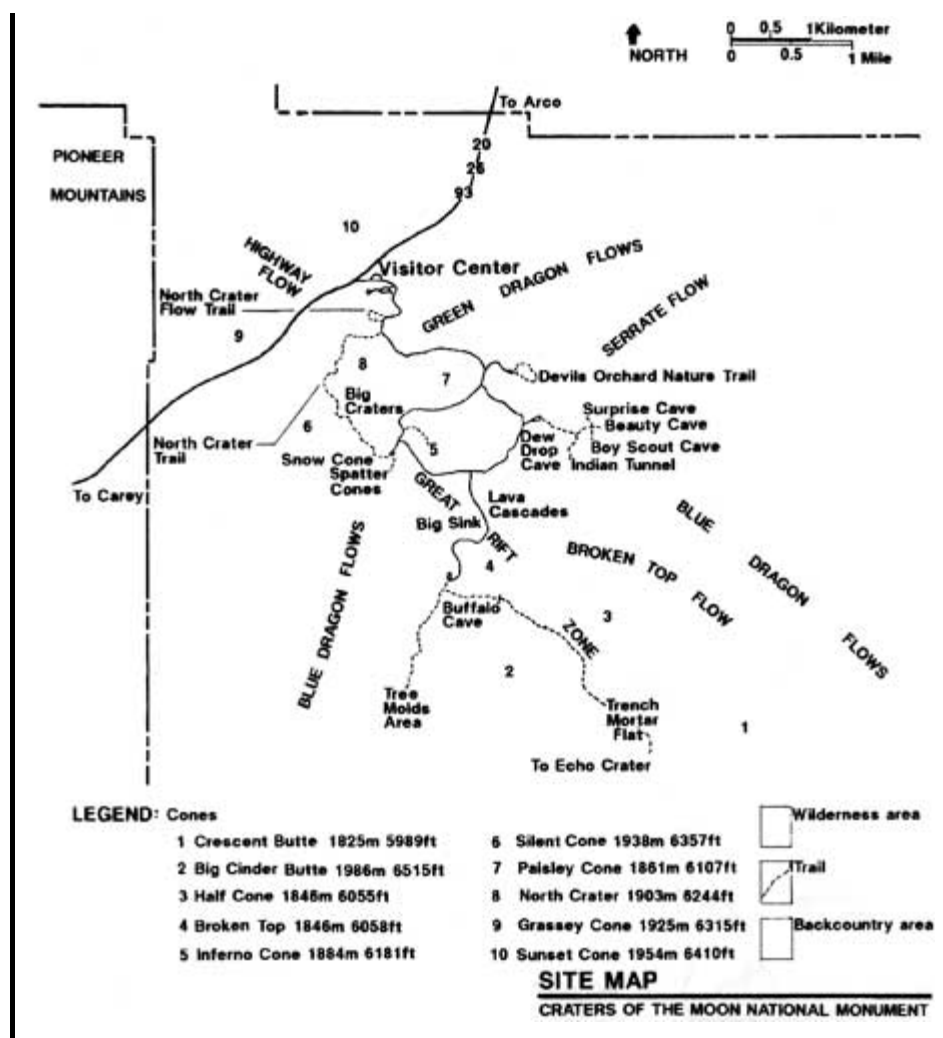
Established as a natural monument, Craters of the Moon preserves some of the world's best examples of basaltic volcanism in a small geographic area. It is also just a small section of the much larger geologic province of the Snake River Plain, and represents some of the plain's most recent eruptions, binding the monument's geologic story with the Snake River Plain's. Beginning nearly fifteen million years ago, volcanic activity formed the plain as lava flow after lava flow emerged from the earth through linear cracks. These openings and the concentration of volcanic formations along them developed volcanic rift zones. They are common across the Snake River Plain, occurring at weakened sections of the earth's crust from which magma under pressure erupted. Craters of the Moon National Monument lies atop the Great Rift, the plain's most extensive rift zone. Designated a national natural landmark in 1971, it runs for some sixty miles from northwest to southeast, and from one and a half to five miles in width. The rift is the source of over sixty lava flows, twenty-five cinder cones, and eight eruptive vents that make up the Craters of the Moon Lava Field.

The monument encloses thirteen miles of the rift, the northern corner of the Craters of the Moon Lava Field, and most of the field's cones and fissures. The lavas exposed here are young, formed during eight eruptive periods from fifteen thousand to two thousand years ago. Lasting about one thousand years and occurring in cycles of about two thousand years, the volcanic eruptions were quiet rather than explosive; basaltic lava contained less silica than rhyolitic lava which, for example, was responsible for the violent eruption of Mount Saint Helens in 1980. At Craters of the Moon, frothy fountains of lava spewed from gashes in the earth, building cinder cones and conical vents. As eruptions subsided, molten rock was pumped out in smaller and more localized flows, until all activity ceased. Yet Craters of the Moon is by no means dead; geologists predict another eruption in the next thousand years.

Three types of lava flows are found in the monument: pahoehoe, aa, and blocky. Pahoehoe, a Hawaiian term meaning "ropey," covers more than half of the monument. Its fluid consistency formed rivers of lava that hardened into relatively smooth, glossy surfaces that, while sometimes flat, are often twisted, rolling, or coiled. Hawaiian for "rough," aa flows formed mostly when pahoehoe flows cooled and thickened, and are anything but smooth, owning sharp, jagged surfaces. A type of aa lava, yet containing more silica, blocky lava is thick and often dense, smooth and glassy. Among the other features found in the monument are cinder cones, spatter cones, vents, fissures, rafted blocks, lava tubes, and tree molds. Visually, the lavas are variegated. Blacks, dark browns, and grays, oxidized reds, yellows, and pahoehoe's iridescent shades of blue and green meet the eye. [2]

Finally, and perhaps most important, the monument's geologic significance was recognized prior to scientific advances that have accurately dated the flows and exposed the area's relationship to the Snake River Plain. Research, in the process of revealing the secrets of the Great Rift, has only increased the monument's significance.





RESOURCES

In addition to its volcanic landscape the monument encompasses around four thousand acres of the foothills of the Pioneer Mountain Range in its northern unit. Together these lands support a variety of natural and cultural resources.

Although the monument's high desert environment appears lifeless, fauna and flora are surprisingly diverse. While not overly abundant, they are well adapted to survive in the semi-arid climate, having developed ways to resist and evade heat, aridity, and wind. Nearly fifty mammal and 150 bird species have been cataloged. The most common are mule deer, coyote, yellow-bellied marmot, golden-mantled ground squirrel, yellowpine chipmunk, mountain bluebird, Clark's nutcracker, violet-green swallow, and raven. In addition, more than two thousand insects, eight reptiles, and one amphibian have been identified.

Similarly, vegetation is varied, even though the majority of the monument's surface is composed of barren lava flows, and plant life is exposed to the monument's severe conditions. More than three hundred plant species are native to Craters of the Moon. Cinder cones support, among other things, limber pine, antelope bitterbrush, and dwarf buckwheat. Lava flows, varying in age and habitat, support lichens, syringa, tansybush, rubber rabbitbrush, cinquefoil, and wire lettuce. Wildflowers such as the monkeyflower, blazing star, bitterroot, paintbrush, and arrow-leaved balsamroot clothe the seemingly barren landscape in short bursts of color. In the watershed of the northern unit, Douglas-fir, quaking aspen, mountain snowberry, sagebrush, and riparian vegetation are found. The monument also has some

unique types and areas of vegetation. Nearly a quarter of the monument is covered by shrub steppe vegetation, a type once common to Idaho and now rare. Craters of the Moon also contains kipukas, islands of vegetation existing in older lava flows and encircled by younger flows; many of them, the Carey Kipuka in particular, protect remnants of relatively pristine vegetation.

Scarcity of surface water is inherent to Craters of the Moon. Waterholes are scattered throughout the area in lava depressions. Insulated in lava cavities, ice and snow can be found throughout the year. The presence of water, frozen or thawed, in the semi-arid environment and hot summer months presents a strange and unique phenomenon. Something of a mystery, waterholes have unknown origins. Some pools have decreased significantly, while others have dried up entirely. Although undependable for human consumption, the waterholes are important for wildlife. The monument's domestic water supply, on the other hand, comes from the springs of Little Cottonwood Creek, draining the Pioneer Mountains. There, the monument receives its water from four enclosed springs, piped to a 150,000-gallon reservoir at the headquarters site where it is treated and stored. [3]

Air quality is one of the monument's primary resources. The Clean Air Act of 1977 classified the monument's wilderness area, 43,243 acres, as a class I airshed, mandating active management by park staff to protect against deterioration. The remaining airshed is class II. [4]

Although the monument is known more for its natural resources, cultural resources compose an important if less understood and documented aspect of management. Numerous archaeological sites have been recorded within the monument. They consist mainly of sparsely scattered surface artifacts and quarry sites. Further research will determine their significance, as more intensive study of the entire monument occurs. [5]

There are also a few historic sites and structures of interest. Listed in the National Register of Historic Places, Goodale's Cutoff, a section of the Oregon Trail, crossed the northern unit of Craters of the Moon. However, little fabric remains, and assessment of the trail's importance awaits future study. Most structures that might be historic today were removed during the Mission 66 program. Only a log comfort station and warehouse remain of this earlier era. Over fifty years of age, and somewhat altered and deteriorated, they have yet to be evaluated for the National Register. [6]

<<< [Previous](#)

<<< [Contents](#)>>>

[Next](#) >>>

CRATERS OF THE MOON

Administrative History



Chapter 3: HISTORICAL BACKGROUND

The theme of avoidance characterizes the early history of what is now Craters of the Moon National Monument. The lava fields and formations of the Great Rift, with their sharp surfaces, heat, and aridity, discouraged entry and exploration by both native peoples and Euro-Americans. Similarly, the hostile environment did not appeal to westering pioneers seeking cheap, arable lands, and valuable minerals. Encounters with the region were of a transitory nature.

Evidence of human occupation in the proximity of the monument dates to ten thousand years before present. Yet archaeological sites within the monument suggest that it was not until thirty-five hundred years ago that small bands of hunters and gatherers, the Northern Shoshoni and Bannock, occupied parts of the area. Even then, they did so only during their annual summer migrations, their passage marked by trails of polished lava and cairns. Many of the known sites are composed of stone windbreaks and rock rings--used perhaps for hunting blinds, religious purposes, or temporary shelters. Artifacts such as tools, arrowheads, and projectile points are strewn throughout the lava flows. From this evidence, it is believed that indigenous peoples entered the lavas to forage and hunt in small groups and stayed only short periods of time. Restricted to what the volcanic environment offered, they concentrated mostly in the northwestern section of the monument where travel was easier and resources more abundant. Until Euro-American settlement wiped out or drove off most of the wildlife near the monument, Indians hunted and lived among bison, elk, wolf, grizzly and black bear, cougar, and bighorn sheep. [1]

Early explorations of the Snake River country by Euro-Americans also avoided the Craters landscape. Expeditions under John Jacob Astor's Pacific Fur Company in 1811, the North West Company the following decade, and the Hudson's Bay Company after 1821 penetrated southern Idaho in search of furs. With its commercial goals, the fur trade circumvented the arid region that supported few beaver-rich streams. However, depletion of beaver and an increase of independent American trappers within the Snake River system expanded the search closer to the monument's vicinity in the 1820s and 1830s. In 1823, a Hudson's Bay Company fur trader, Thyery (or Antone) Godin, ventured onto the Big Lost River, which for a time bore his name. Another Bay Company trapper, Antoine Sylvaile, arrived on the Big Wood River in 1828. [2]

While these efforts netted little in the way of furs, they did provide the first documentation of the monument's periphery, as well as the first visual description of the region. By Washington Irving's account, United States Army Captain Benjamin L. E. Bonneville neared the volcanic district between 1833 and 1834. The military explorer and fur trade entrepreneur viewed it as a vacant and lifeless place. A threat to human life and absent the desired economic resources, "the volcanic plain in question forms an area of about sixty miles in diameter, where nothing meets the eye but a desolate and awful waste; where no grass grows nor water runs, and where nothing is to be seen but lava." [3] With that, Bonneville cast a lasting, negative impression of the unnamed monument.

Another lasting influence of the fur expeditions was that they drew more people closer to the present monument. Segments of the overland route blazed by the Astorian party of Wilson Price Hunt and Donald Mackenzie in 1811 became part of the Oregon Trail in the mid-1800s. The fur trading posts of Forts Hall and Boise, permanently established after 1834, functioned as service centers for emigrants. Missionaries headed first for Oregon Country and were followed in the 1840s by thousands of westward-trekking pioneers. They traveled well to the south of today's monument along the Snake River, at the southern rim of the Snake River Plain. Like the fur traders before them, these early westerners sought treasures in the land that lay beyond Craters of the Moon--fertile soil in the Willamette Valley or gold in California. Beginning in the 1850s, though, many overland travelers opted for an alternate route, afterward called Goodale's Cutoff, that sent them to the northern rim of the great lava plain, and brought them to the landscape of Craters of the Moon. [4]

This secondary trail departed Old Fort Hall, branched northwest from the river, passed Big Southern Butte, neared Arco by about eight miles, and from there arched southwest; it skirted the flanks of the Pioneer Mountains and the northern section of the present Craters of the Moon before it stretched on to rejoin the main trail at Boise. The cutoff represented a well established travel path. Indians crossed the lava fields in the monument's north end on their way to Camas Prairie, a valuable food source of Camas roots. Later, mountain men, fur traders, and finally emigrants exploited the route. John J. Jeffrey, hoping to profit from a ferry across the Snake River, promoted the cutoff for emigrant traffic between 1852 and 1854. After that year, however, the venture failed, and the trail went unused until the era of the Civil War migration, when Tim Goodale guided his party over it in 1862. [5]

Goodale, an experienced trapper, trader, and guide of the Far West, led the emigrants over the cutoff because they wanted a shorter and safer route to their destinations. By 1862, gold had been discovered at Salmon River and the Boise River Basin, and the travelers were eager to reach the new mines as quickly as possible. That year as well, Indian hostilities diverted emigrants north of the main overland trail. In August, Shoshoni tribes, antagonistic toward white settlers infiltrating their homelands, attacked a party of emigrants at what became known as Massacre Rocks. The group that Goodale guided in 1862 eventually numbered 1,095 people, 795 men and 300 women and children. Although the Northern Shoshoni were irritated by the wagon train's presence, especially as it departed the future monument and entered into Camas Prairie, the train's size and Goodale's leadership saw the company through to Boise unscathed. Thankful, some of the emigrants then named the cutoff for their guide. [6]

Even though individuals chose to travel through what is now the monument, they still perceived it as a place to avoid--a place along the way to somewhere else. Exposed to the seemingly desolate lava fields, emigrants endured the harshness and bleakness of the landscape of Craters of the Moon and pressed on. One year after the creation of Idaho Territory, Julius Caesar Merrill described what it was like putting the Craters of the Moon Lava Field behind him and his party in 1864:

It was a relief to see the distance widening between us and those volcanic strata. It was a desolate, dismal scenery. Up or down the valley as far as the eye could reach or across the mountains and into the dim distance the same unvarying mass of black rock. Not a shrub, bird, nor insect seemed to live near it. Great must have been the relief of the volcano, powerful the emetic, that poured forth such a mass of "Black Vomit." [7]

In subsequent years, Goodale's Cutoff served as a popular emigrant route through southcentral Idaho. Various modifications and the construction of a ferry crossing on the Snake River transformed the trail into a more accessible road. Because railroads arrived late

in the century to this section of Idaho, the cutoff received heavy use by overland travelers. As emigrant traffic tapered off, it functioned as a stage route after 1879, ferrying travelers to and from the mining districts of southcentral Idaho, and points west and east. It also evolved into a freight route, then into a road for farm families settling the region, and finally into a section of a modern highway. Even with all of this activity, the lava landscape remained a formidable and barren place to those who crossed it. [8]

SETTLEMENT AND SHIFTING PERCEPTIONS

In the late 19th and early 20th centuries, settlement proved to be an important process in fostering an appreciation for the volcanic landscape. The area's scenery and geological formations could be contemplated only when the region was no longer geographical space to cross and survive. To bring about this change in perception, a certain amount of prosperity, security, and comfort were essential.

Though thousands of emigrants bypassed the monument for the Pacific coast and Idaho mining districts in the 1860s, the advent of mining in the Wood River and Lost River regions in the early 1880s created pockets of civilization around the present-day monument. A year after the discovery of the Horn Silver Mine in 1884 by Frank and Samuel Martin, the boom towns of Era and Martin sprung up. Both were located in the Lava Creek mining district, along the northern border of today's monument. They were typical mining towns and sported a full line of services--dance halls, saloons, laundries, and post offices. By the end of the century and the crash of the silver market, the towns died, although the Martin townsite maintained a post office until 1940. [9]

This activity also influenced the growth of more permanent settlement as well, attracting the livestock industry to southern Idaho to supply new communities such as these with meat and wool. In the Little Wood River Valley southwest of Craters of the Moon, the ranching and agricultural settlement of Carey was established in 1880. Northeast of the monument in the Lost River Valley, the town of Arco began as a stage stop and supply junction along Goodale's Cutoff in 1879, servicing the Blackfoot to Challis and Wood River routes. In the late 1870s and 1880s livestock successfully occupied the valley, but extreme winters later in the decade devastated the cattle business. Afterwards farming predominated in the more fertile lowlands, while sheep and cattle grazing were primarily left to the hillsides. A community slowly formed around the Arco junction, and after relocating twice, Arco was permanently established at its present site in September 1901 with the arrival of the Oregon Shortline Railroad from Blackfoot. [10] The railroad spanned the sixty miles of desert between the two towns to tap the mining districts of central Idaho, thus contributing to the development of the Lost River Valley in ensuing years.

Irrigation was perhaps the most significant development that aided settlement and altered the "barren and useless" image of the lava region. It transformed the sagebrush plains into a veritable "garden" at the turn of the century. After Idaho achieved statehood in 1890, reclamation projects under the Carey Act of 1894 and the Newlands Act of 1902, in addition to other homestead legislation, [11] increased agricultural settlement and production on the Snake River Plain. In the Lost River country surrounding Arco, homestead entry opened under the Carey Act on September 14, 1909. With it and subsequent irrigation projects, the population near Craters of the Moon expanded. In 1910, for instance, some 320 people resided in Arco, and in similar numbers in outlying areas. [12]

After making the region a home, many of valley's residents were soon displaying a heightened interest in its lava formations, and avoidance gradually turned into curiosity. As one early resident recalled, Craters of the Moon "was known to people of the region for

years. They called it 'big craters' or some such name." But it was passed by prospectors "hunting the pot of gold at the end of the rainbow," or by those in "other occupations without particular notice." With this mind set and the daily grind of living on the lava plains, they never "dreamed that they [the craters] would ever become...objects of interest...." [13]

Attention to the Craters themselves initially assumed a pragmatic form. In 1879 and the 1880s, for example, local ranchers Arthur Ferris and J.W. Powell investigated the lava fields for water sources to supply several hundred head of cattle. Thought to have been the first white men to enter the volcanic interior, they hoped to collect a reward for their discovery. Powell documented their exploration by erecting a stone marker at the Vermilion Chasm waterhole. Another sign documenting their penetration into the lavas was a cow's shoulder bone found in Buffalo Cave; it bore both Ferris and Powell's names and the inscribed date of 1885. A cement water trough near Little Prairie Waterhole stands as one of the few reminders that livestock grazing met little success in the harsh environment. After nearby settlers found no substantial grazing lands or water supplies, they generally left Craters of the Moon alone. As a result, lands worth farming or ranching around the monument filled, and as the open range closed, the monument's lava fields stood silent and undeveloped, "islands" of "desolate wastes." [14]

Formal interest in the area's uniqueness awaited the 20th century. Science discovered the region in 1901 when Israel C. Russell led the first government exploration of the area's northern section for the United States Geological Survey. He named the region "Cinder Buttes," and was so impressed that he returned in 1903. [15] Government investigations lapsed for several decades, and for a time the interior remained virtually unknown.

In the meantime, however, area residents had grown more inquisitive and discovered the region for themselves. The most well-known local explorer was Samuel A. Paisley. A recent Arco arrival and the future monument's first custodian, Paisley traveled across the lava terrain for the first time in 1910. Enthusiastic about the formations he encountered after several trips, he helped promote the area. In the years leading to its establishment, for example, he escorted interested parties to the volcanic sites, and along with nearby ranchers and civic groups, built trails to some of the popular attractions and erected signs. [16] Furthermore, the lava region held a mythical and mysterious image in local minds that generated intrigue. As the story of the "Lost Valley of the Lavas" suggests, the expanse of unexploited volcanic landscape was thought to contain a hidden valley of lush grass, abundant water and wildlife--the stuff of legends. [17]

Although there is little evidence about the extent of public activity and exploration of Craters prior to the early 1920s, Paisley's services suggest that residents from the surrounding communities were beginning to view the region for its scenic and recreational values. With the advent of automobiles, the lava formations were more accessible, and more people drove to see them using Goodale's Cutoff, now a primitive road linking Arco with Hailey. One account describes a Sunday outing by a "party of Arcoites [who] visited the ancient craters and their surroundings, viewing the scenes where the Devil and Mother Earth cut up 'high jinks' when she was young and gay and giddy." The popularity of the area was not restricted to sightseers alone. For leading the group was someone other than Paisley. Era Martin, the nephew of Frank Martin, was the designated guide. His ranch adjoined the present monument's northern boundary, and his knowledge of the lava beds was acute, his "interest in its curiosities...contagious." [18]

However scant, these narratives evince a shifting opinion in the first two decades of the 20th century. Recognition of the volcanic landscape as unique was causing the previous aversion to the Craters to fade. Less concerned with other destinations, and more settled in the region, people modified the opinions expressed by earlier observers. As individuals grew to better

understand the lava fields, "scenic" and "scientific" replaced "desolate" and "dismal."

MONUMENT MOVEMENT

Positive perceptions of the volcanic landscape reflected a growing trend in American culture and the course of conservation history during the late 19th and early 20th centuries. More Americans were becoming aware of their natural and cultural heritage. They invested monumental scenery with a sense of national identity and pride, and faced with the relentless disposal of the public domain, they rallied to save the most magnificent scenic sites as national parks, beginning with Yellowstone in 1872. As scientists related the significance of natural phenomena to the public, these sites as well as the previously unattractive landscapes attained a higher importance. Technological advances as well increased this aesthetic appreciation. As automobiles and roads replaced wagons and trails, more Americans spent their leisure time touring the great outdoors with greater ease and enjoyment. Soon individuals were extolling the strange beauty and scenic wonders of places like Craters of the Moon. And out of these changing perceptions evolved the concept of preserving the area as a national park. [19]

ROBERT W. LIMBERT'S VISION FOR CRATERS OF THE MOON

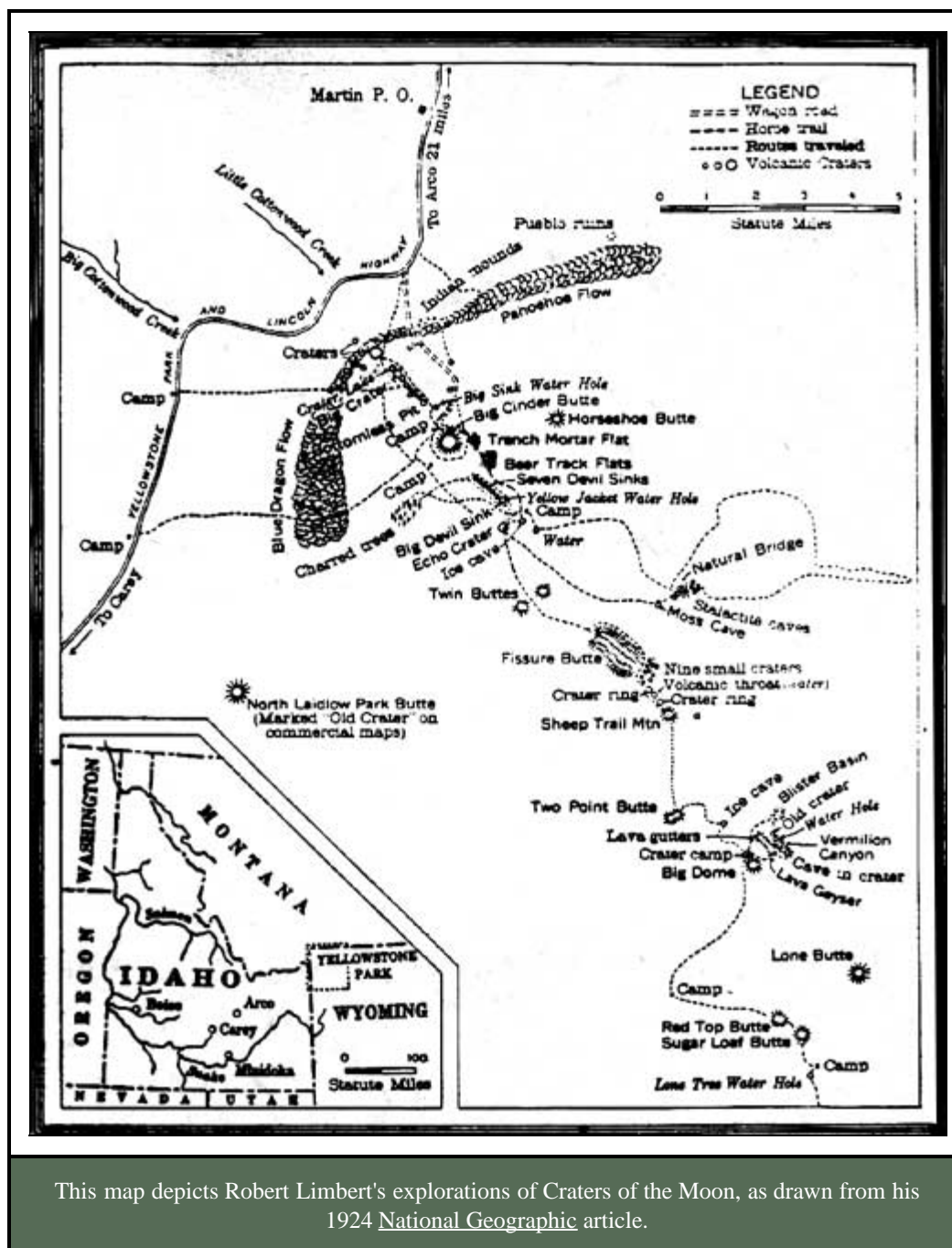
While interest in the lava fields was building, Robert W. Limbert looked beyond the immediate and envisioned Craters of the Moon as a national park. Limbert (1885-1933) was born in southern Minnesota and raised in Omaha, Nebraska. In his life, he was many things: explorer, naturalist, photographer, artist, writer, and entertainer. A flamboyant showman and gun aficionado, Limbert billed himself as "'Two-Gun Limbert,' Man from the Sawtooths." A taxidermist by trade, he moved to Boise in 1911 and worked for, and later bought out, Mrs. A.A. Austin, the city's most prominent taxidermist and furrier, in 1915. Of all his callings, however, Limbert was known best as a promoter of Idaho's natural wonders. [20]

In an era when the population of the nation's cities was expanding, he imagined Idaho's magnificent landscape as "a vacation refuge for America's urban masses." An accomplished photographer, he recorded some of Idaho's most pristine environments, including the Sawtooth Mountains and what is now Craters of the Moon National Monument between 1911 and 1933. He drew considerable attention to the state through his exhibits at San Francisco's World's Fair in 1915. Believing that tourism would replace logging and mining as the state's leading industry, Limbert modified the popular slogan "See American First" and added "Begin with Idaho." More importantly, his explorations and promotion of the Craters of the Moon region helped lead to its establishment as a national monument in 1924, thus making him perhaps the most important figure in the monument's history. [21]

Robert Limbert's advocacy for federal protection of Craters of the Moon began with his explorations of the region. With the eye of an artist, the flair of a booster, and the disposition of a latter-day explorer, Limbert was attracted to the undiscovered exotic places that would lure tourists to Idaho. And Craters of the Moon fit the bill. Tales of dwarf grizzly bears and "other strange things" existing in the "Valley of the Moon" whetted his interest and drew him to the unsurveyed lava district, a blank space in the map of southern Idaho labeled "rolling lava terrain." [22]

Limbert made two excursions in the lava country's upper reaches prior to 1920, mostly retracing I.C. Russell's routes. Convinced more peculiar phenomena awaited discovery across the entire region, he embarked on a third trip in early May of that year. Joined by Walter L. Cole of Boise, Limbert traversed the unsurveyed lava terrain on a seventeen-day exploration. Both men, accompanied by a dog, hiked north from Minidoka and trekked through eighty

miles of hot, dry, and formidable volcanic plains, ending their trip at the Era Martin ranch. According to Limbert, he and Cole were the first white men to have made the rugged north-south journey. In places, they were guided across the lava beds by old Indian trails, and by doves to water in lava depressions collecting melted snow and ice. Along the way Limbert recorded sites with his camera and named prominent geological features that still bear his names: Echo Canyon, Yellow Jacket Water Hole, Blue Dragon Lava Flow, The Bridge of Tears, and Amphitheater Cave. As testimony to his feat, his trip remains, for the most part, unduplicated. [23]



FIRST CALL FOR A NATIONAL PARK

Robert Limbert's experience traversing the contorted landscape helped him to "appreciate its scenic value." Where others had seen only a barren waste, he found solace and beauty. Here, he wrote, the "human voice seems a sacrilege in the amphitheater [sic] of nature such as

these huge craters seem to be." Visually, he was enamored of the "immense rolls and folds of fantastically formed lava...colored blue, black, and brown...the scores of crater rims and walls that start at your very feet and dot the landscape to the horizon line...." Exploring this strange landscape took Limbert to some of the "grandest sights imaginable," from the heights of the great craters to their "deep somber depths." It was awe-inspiring to descend from the scenic feast of surrounding space and sky to crater bottom, and become enveloped in a "red walled funnel," where "one feels little and insignificant, a fly on the wall of the world." [25]

The impression was lasting and moving, and in his descriptions he captured the essence of the area. As he watched the light of sun and moon dance across the cobalt blue lavas of the Blue Dragon Flow, it changed from a "twisted, wavy sea" to a "glazed surface" with a "silvery sheen." Not simply day and night, but all the "changing conditions of light and air" make this a "place of color and silence," a place, with few exceptions, unequalled in "variety of formation, color, and scenic effects" in the world. [26]

Limbert's expression for the lava country's unique beauty found its way into the April 10, 1921 Idaho Sunday Statesman, where he stated that "no more fitting tribute to the volcanic forces which built the great Snake [R]iver [V]alley could be paid than to make this [region] into a national park." [27] True to the promoter that he was, Limbert asserted that the site would attract thousands of visitors, once adequate roads were constructed so travelers could reach the Craters area as they motored to Yellowstone National Park via the Lincoln Highway. All people, he believed, should have the chance to see "these wonders of nature for themselves." [28]

Impassioned about this issue, Limbert called for the state's public to pressure Idaho senators to "introduce a bill suitably framed to give...[Craters] the recognition it deserves." Not only did the area's scenic values drive Limbert's preservation plea, but also what he saw as the threat to the district's archaeological features (Indian cairns and rock hunting blinds), which could be "torn down and destroyed with their contents carried off for the personal gratification of an unthinking few." [29] It was this perception that led Limbert to spearhead a movement on both a local and national level to create a "new national park or monument in many respects the equal and in some easily the peer of many...now within our boundaries." [30]

Following his 1920 exploration, Limbert conducted free lectures around southern Idaho, meeting with civic groups to drum up support for converting the lava district into a national park unit. Heartened by a positive response, he decided to attract national attention by guiding several more trips with scientists and reporters. In June 1921, the explorer-promoter led his most famous investigation of the Craters area for the Idaho Statesman. The party consisted of ten men, who were "equipped to make an exhaustive study of the lava formations, bird and animal life, and explore the many craters." The end result would be a study placed before Congress emphasizing "the possibilities of this wonderland as a national park." Included in the group were local residents, Samuel Paisley and Era Martin; civic leaders, Clarence A. Bottolfsen and Jo G. Martin; as well as two scientists representing both the Biological Survey and the Smithsonian Institution, Luther Goldman and W.E. Crouch. The trip spanned two weeks, during which Limbert snapped more than 276 still photos, recorded an estimated 1400 feet of motion-picture film, as well as produced maps of the lava country's features: ice caves, "bottomless pits," and craters previously uncharted. [31]





Exploring the wonders of Craters of the Moon during Robert Limbert's 1921 expedition.
(*National Geographic*)

Upon his return, Limbert announced that the scenery and natural wonders of the "Moon Valley" were "unexcelled by either the Yellowstone National Park or the Garden of the Gods." [32] To ensure this message reached a wide audience, he published photo essays of the area in a number of regional and national newspapers and magazines. His most famous piece appeared the March 1924 *National Geographic*. His essay, "Among the Craters of the Moon," with its photographs and map detailed the 1921 expedition's route, though it represented a composite of his several trips. Originally submitted in the fall of 1921, the article was delayed going to press by the Society, which questioned Limbert's findings, and held up publication until his observations could be confirmed. [33]

Two months after the *National Geographic* appeared, the monument was established. Limbert's role, given the course of events, was instrumental to this outcome. His explorations and essays--both written and photographic--exposed a historically and geographically isolated region to the public at large. [34] More importantly, he espoused a positive attitude for the lava fields that before had been largely unknown or actively avoided.

LOCAL, STATE, AND FEDERAL SUPPORT

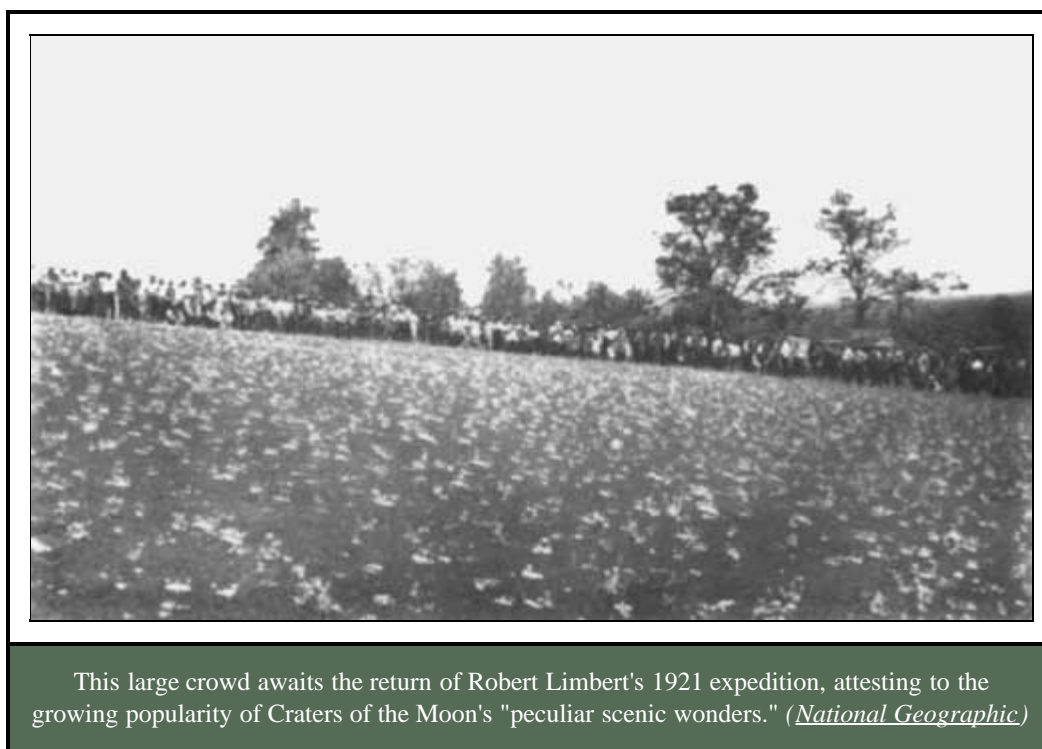
As the delay by the *National Geographic* suggests, Robert Limbert needed help to succeed in establishing a national park for the Craters region. Although evidence of the movement to create the monument outside Limbert's efforts is limited, enough information exists to imply that Limbert himself galvanized the public to action. But at the same time, it should be noted that his reception was positive, hinting that a majority of people already shared his feelings on the uniqueness of the region, or saw its removal from the public domain as insignificant. [35]

When the account of Limbert's 1920 expedition appeared in the spring of 1921, for example, the *Idaho Statesman* voiced that a movement was already afoot "to have the lava country designated a national park." Stating what reflected, most likely, the stir surrounding Limbert's preparation for his 1921 expedition, the paper noted that "Eastern scientists have expressed great interest in the proposition [to create a park] and Idaho commercial clubs and women's organizations are making individual investigations." Moreover, the paper reported what seems to have been a dominant hope for an isolated and young western state--the

establishment of national park. For once that occurred and the area became accessible, "this spot in Idaho may become as great a mecca for tourists as Yellowstone Park." [36]

CIVIC GROUPS AND BOOSTERS

Limbert's influence was infectious, and proved to be a powerful impetus for support. In the wake of his 1921 expedition, some 150 lodges and clubs from around the state had petitioned Congress to set aside the volcanic area as a national park or monument. [37] Two surviving resolutions from Boise civic groups attest to this wide-spread interest and provide a known sample of park advocacy. On May 16, 1921, Limbert spoke to the Pilgrim Brotherhood of the First Congregational Church of Boise about his exploits in the Craters region. And in June this group along with the Boise Community Council drafted similar resolutions petitioning President Warren G. Harding to create the "Valley of the Moon National Monument." As part of its commitment to the movement, the Pilgrim Brotherhood sent Reverend Frederick V. Fisher on an inspection trip to the Craters later that summer. While these petitions and actions represented only a small sampling of the whole state, they echoed the concerns expressed by Limbert in the April publication of his exploratory trip, and resonated throughout the monument movement. [38]



Referring most likely to Limbert's recent investigations of the lava beds and his assessment of their value, the documents exclaimed a standard argument for establishing a national park and particularly relevant to Craters of the Moon; its lands were economically worthless: [39] "this region is not now, nor ever can be of value for agriculture, grazing, lumbering, or any other of the industries of civilization...." And so it followed that it "is alone of value as one of the great scientific and natural wonders of the continents." Designation was imperative; the area was "already threatened with despoliation and exploitation by private and commercial interests for private gain, and...must be carefully guarded at once by the National Government...." [40]

That there were threats seems clear, but what those threats were is less clear. There are, however, some clues. Men like Paisley and Martin were operating guide services, either

formally or informally, within the future monument. Limbert expressed concern over this activity, for example, in 1921 when he claimed that unregulated visitor traffic in the lava formations could result in destroyed artifacts. His concern was not unfounded. As a local paper reported, recent improvements to the Carey to Arco highway had opened "Even the mysterious recesses of the `Valley of the Moon'...to the daring automobile tourist." The following year, Limbert confirmed the petitioners' assertions. By then, local commercial clubs had built a rough road into the interior, marked waterholes, and distributed free maps to visitors which he had drawn. [41]

Both the Boise groups and Limbert, it seems, meant residents of the small town of Arco when they mentioned "local" groups. Throughout the few years preceding the monument's establishment, Arco civic leaders provided constant and effusive support for the area's creation. The town's promotion originated with Limbert's activity. The Arco Advertiser covered the explorer's adventures, and based on his opinion, touted Arco as the gateway to this spectacular and little known wonder. Soon the town's interest escalated; it sponsored community picnics at Craters beginning in the summer of 1920. By the end of the year, Arco was showcasing the Lost River region as a "scenic interest," with Craters of the Moon as its central attraction. Here auto tourists could experience the sublimity of the desert wonderland. After leaving Yellowstone National Park for the Sawtooth Range, motorists could stop midway at the Craters, and find in the landscape's dormant and recently cooled lavas a contrast to the park's "eruptive" geysers. [42]

In mid-June 1921, area residents turned out to celebrate Robert Limbert's most recent exploration. More than two hundred picnickers from the Lost River Valley were treated to food, talk, and music by the Arco high school band. Many on the outing experienced the "wonderland" for the first time, and it was such a "huge success" that residents planned others. [43] In doing so, Arcoites demonstrated the growing popularity of the Craters. Already it was an established picnic site, boasted an entrance road, and sign near Martin, directing tourists to the "Valley of the Moon." In addition, large numbers of motorists were reportedly parked by the lava fields and were seen exploring the sites; the area's proximity to the highway made it an "an easy and interesting little excursion." The remains of Limbert's camps, such as a wooden ladder leading into one of the caves, also made the features easier to see, and gave the strange terrain a sense of familiarity. [44]

Economics, however, was the main attraction for supporters of a national park. The Arco Advertiser and Arco Chamber of Commerce recognized the monetary potential from a national park site. The Advertiser's editor and future two-term governor, Clarence A. Bottolfson, used his paper not only to stump for local and regional support, publicizing Limbert's expeditions and lectures, but also to advertise the Chamber's plans with other communities to attract tourists. In 1922, for instance, the club vowed to "do everything in its power to bring the attraction to the attention of those who would enjoy a trip to the `Craters of the Moon in Idaho.'" It planned a promotional blitz--a flood of circulars, maps, and films to tributary towns along the Idaho Central Highway and adjacent areas--and schemed to improve access roads to the Craters and the primitive loop drive within the monument. Finally, a mother-daughter team from Arco proposed to build a hotel near the present-day entrance. All of this would not only expand upon group outings but promote tourism. Ultimately, towns like Arco, as isolated as the proposed monument itself, would benefit from a tourist season, if only people would but "wake up and do something before the...season arrives and finds us all `asleep at the switch.'" [45]

By 1923, monument promoters added a registration booth to the other developments within the proposed grounds, and had obtained over a thousand signatures on a petition requesting the federal government to designate the region a national monument. While this was positive, especially since the petition represented visitors from across the country, many of those

people left with more than scenic satisfaction. [46] At least one local entrepreneur was selling lava bombs and other features to tourists about this same time, underscoring the necessity of protecting the area. [47]

Further indication that the proposed monument was assuming a wider following came in November 1923 when a coalition of civic leaders met in Boise and formed the Craters of the Moon National Park Association. The association members included Governor C.C. Moore, Boise Mayor Eugene B. Sherman, E. W. Shubert of Pocatello, and Robert Limbert, among others. Little is known about this organization and how it functioned, save that it pledged to see that "luncheon clubs in their respective cities, as well as chambers of commerce, pass resolutions calling for conversion of the territory [craters area] into a national park." [48]

CONGRESSIONAL SUPPORT

In 1923, Congressman Addison T. Smith, of Idaho's Second District, responded to public interest and embraced plans for establishing a national monument (or park) in southern Idaho. Smith's support of national parks was somewhat ambiguous. Years earlier he had introduced legislation to create a Sawtooth National Park, and later withdrew it mostly through the protests of Idaho's grazing lobby. [49] In fact, he was known more for his irrigation legislation than promotion of national parks in arid Idaho. In 1919, he introduced a reservoir bill that would have inundated ten thousand acres in the southwestern corner of Yellowstone National Park. [50] In the case of Craters of the Moon, however, Smith's motives seem to have been rooted both in the nature of politics and in a genuine appreciation for the volcanic site.

Smith's support of Craters of the Moon was politically astute. From Twin Falls, he achieved state-wide publicity for his efforts. And by favoring monument rather than park status, Smith did not incur the wrath of the state's resource users. To them, national monuments were less threatening; monument's enclosed smaller tracts of land than parks. As Thomas C. Stanford, an influential livestock owner from nearby Carey, recalled, Smith agreed that a monument was the best choice because it would embrace only the territory where the "historic wonders were located." A park's expansiveness, on the other hand, might include lands outside the immediate scenic sites, infringing on grazing lands considered more valuable left in the public domain. [51]

At the same time, Smith's incentive exceeded mere public recognition. His first visit to the area in September 1923 impressed him so much that he took immediate action to preserve the moon-like landscape. Within weeks of his visit, Smith contacted Gilbert Grosvenor, National Geographic Society president, about publicizing the area, and Stephen T. Mather, director of the National Park Service, about government protection. Concurrently, he conferred with Robert Limbert about seeking national park protection. [52]

The congressman sent both Grosvenor and Mather information about the proposed site, of which Limbert's article, "A Trip to the Moon," composed an important part. Grosvenor responded favorably to the representative's entreaties, additional information, and character reference for Limbert, all of which played a decisive role in pushing through the publication of Limbert's 1924 article. Mather was so influenced by Limbert's "A Trip to the Moon" that he told Smith "there is not the slightest doubt...[that] this area is national monument material of the highest interest." It possessed the "scientific" qualities outlined in the Antiquities Act of 1906. In his enthusiasm, the director even ventured to say that based on Limbert's information alone we might "have it established as a national monument," yet he qualified his excitement by adding, "although I would not want to commit myself at this time." [53]

ROLE OF THE NATIONAL PARK SERVICE AND OTHER AGENCIES

The final stage in creating Craters of the Moon rested with the National Park Service. The Park Service's role appears to have been more reactive than active. Its first contact with the Craters of the Moon proposal, for example, occurred in the summer of 1921 when it received copies of the resolutions by Boise civic groups calling for the area's designation. Acting Director Arno B. Cammerer replied, thanking those individuals involved, and stated that he would try to send "a representative of the National Park Service to inspect the proposed monument sometime soon." [54] Three years passed before the Service, under growing public and political pressure, engaged Harold T. Stearns of the U.S. Geological Survey to report on the proposed monument.

Although Robert Limbert was instrumental in publicizing the volcanic formations, scientists played a central role in the creation of the monument. Washington Irving anticipated this when he wrote "We look forward with impatience for some able geologist to explore this sublime but almost unknown region." [55] Beginning with Russell's investigations at the turn of the century, geologists numbered high among those who visited and showed interest in the area. In this respect, Stearns was just as influential as Limbert, whom he had befriended, in the establishment of Craters of the Moon. Where Limbert provided evidence of the landscape's aesthetic beauty, Stearns supplied evidence of the area's geologic significance that ultimately pushed through its designation.

Prior to being approached by the Service, Stearns had begun to establish himself as an authority on the area. He originally encountered the Craters in 1921. O.E. Meinzer, head of the USGS Ground Water Branch, discovered the Great Rift early that summer, after a trip through what is now the northern end of the monument. Unable to complete a study, he instead advised Stearns to visit the "fresh volcanics" near Arco. Like Meinzer, Stearns' inspection was brief, yet he immediately grasped the area's geologic uniqueness: "Up to the time of discovery of the Great Rift, volcanic phenomena that accompany a fissure eruption were not known to exist in this country." The closest comparisons he could arrive at were Iceland and Hawaii. The formations were unique enough that he returned in 1923 to conduct a more thorough investigation, accompanied by Fred E. Wright of the Carnegie Institution, who confirmed that Craters was in fact "a true fissure eruption." [56]

In January 1924, the National Park Service requested and received from Stearns a report based on his research "describing the area, delineating its boundaries, and stating the reasons for its preservation as a national monument." [57] Stearns believed that a monument

Would preserve for the people of the United States the most recent example of a fissure eruption in this country. It does not duplicate the features of any of the national monuments or parks containing volcanic phenomena. In the existing national monuments and parks there occur only those features that accompany a single volcano.

In addition, a monument would ensure government protection of the area from vandalism, commercial exploitation, and ensure public access and attention to a volcanic area of "curious and educational" interest. [58] Supporting Stearns' recommendation, Meinzer suggested what made the "Craters of the Moon" so special:

I was greatly impressed with the weirdness of the landscape, the freshness of the lava, the abundance, variety and spectacular character of the volcanic features, and the great rift along which the volcanic features are largely arranged. I think there is nothing like it in the United States outside of the island of Hawaii. [59]

Thus, similar to Limbert's enchantment with the lavas' appearance, the geologists were not immune to the landscape's beauty. As Stearns wrote, "Black and barren as it is, the lava surface yet has a weird scenic charm." They were also taken with the variety of features associated with volcanism, and the forces that shaped the Snake River Plain. In the same instance, they were fascinated with "the freshness and barrenness of the black lava flows." One felt as if he had just missed seeing an eruption for himself. Stearns estimated that the most recent flows were possibly only several hundred years old, and early in the 18th century, then, Native Americans may have witnessed fissure vents steaming as the lava extrusions abated. [60]

Besides enlisting Stearns, the Park Service took another step towards final designation of the region as a NPS unit. At Stephen Mather's request, in late December 1923 the commissioner of the General Land Office ordered a formal boundary survey of "a unique area in Idaho" to be set aside as a national monument. The only requirement, in accordance with the Antiquities Act, was that the reservation "be confined to the smallest area compatible with the proper care and management of the objects to be protected." [61] That survey, however, did not occur until a year after the monument's designation. Apparently, the Park Service was willing to recommend the unit for inclusion in the park system based on the information at hand.

On May 1, 1924, the Park Service, with the recommendations of other agencies including the United States Geological Survey and the Smithsonian Institution, submitted its proposal to the secretary of the interior for designating Craters of the Moon a national monument. Acting Secretary E. C. Finney sent the finalized form of the proclamation to President Calvin Coolidge for his consideration. The document utilized Stearns' recommendation for "withdrawing and setting apart approximately thirty-nine square miles of land in Idaho as a national monument to be known as the Craters of the Moon National Monument, in order to protect in the public interest the remarkable volcanic phenomena of this region." [62]

The proclamation before Coolidge had seen little controversy. Having had the approval of both the U.S. Geological Survey and the Smithsonian Institution, [63] the only real problems the Park Service appeared to face were ironing out the minor details of its proposal before seeking presidential approval.

One of these details was the name. The area had been labeled most frequently as "Valley of the Moon." The official name, "Craters of the Moon," was chosen in a survey conducted by the Arco Chamber of Commerce in 1922. The group wanted to avoid confusion with the "Valley of the Moon" in California, and to adopt "something more appropriate and original." [64] The National Geographic followed suit when it changed the title of Limbert's essay to "Craters of the Moon" in March 1924. And the name stuck. Although the Smithsonian objected to this usage, Stearns assured the Park Service that the name was apt for the area because the features resembled the moon as viewed through a telescope. [65] Given the name's descriptive appeal and the fact that it had been nationally publicized, the Park Service settled for Craters of the Moon.

The other point of contention was the monument's size. Park promoters, for example, had speculated that the reserve would encompass 250 square miles. [66] In a February 1924 letter, Robert Limbert notified Addison Smith that he and many Arco residents thought Stearns' recommendation "was not nearly big enough." [67] Limbert and company, though, were unable to change the original document. Part of the problem lay in the fact that monuments were to be small, protecting only the most important features, and for this reason cries for a larger size fell on deaf ears. The other part of the problem stemmed from the proposed monument's remoteness, isolation, and forbidding lava features. While these physical conditions posed no public controversy over economic use of the land, they caused problems

in drawing boundaries. As of 1924, the area remained an unsurveyed section of the public domain, and the new monument lacked even the General Land Office's acreage assessment. [68] For this reason, Stearns noted, "it was obviously impossible to locate and include in it [the monument] all the important and unique volcanic features." [69]

After several years of advocating the establishment of a National Park Service unit, Robert Limbert, Arcoites, and others in the state of Idaho saw their efforts come to fruition on May 2, 1924, when President Calvin Coolidge signed the proclamation establishing Craters of the Moon National Monument. [70] Enacted under the Antiquities Act, the monument fit within the legislation's broad guidelines, whereby the president was empowered

to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments.... [71]

Craters of the Moon was at the time the thirtieth monument administered by the Department of the Interior, and Idaho's first National Park Service area. To celebrate this milestone, on June 15, 1924, Arco sponsored the monument's dedication ceremony. Some fifteen hundred people attended from central and southeastern Idaho, featuring those individuals and groups influential in seeking the area's creation (the Park Service was apparently absent). Establishment brought to a close the movement to preserve the "Lava wonderland." It also opened a new chapter for the remote section of Idaho. As the Advertiser reported, "it puts the community on the map as one of the scenic districts in the west. [72]



Opening Day, June 1924, Arco residents celebrate the establishment of Craters of the Moon National Monument.
(CRMO Museum Collection)

[<<< Previous](#)

[<<< Contents >>>](#)

[Next >>>](#)

CRATERS OF THE MOON

Administrative History



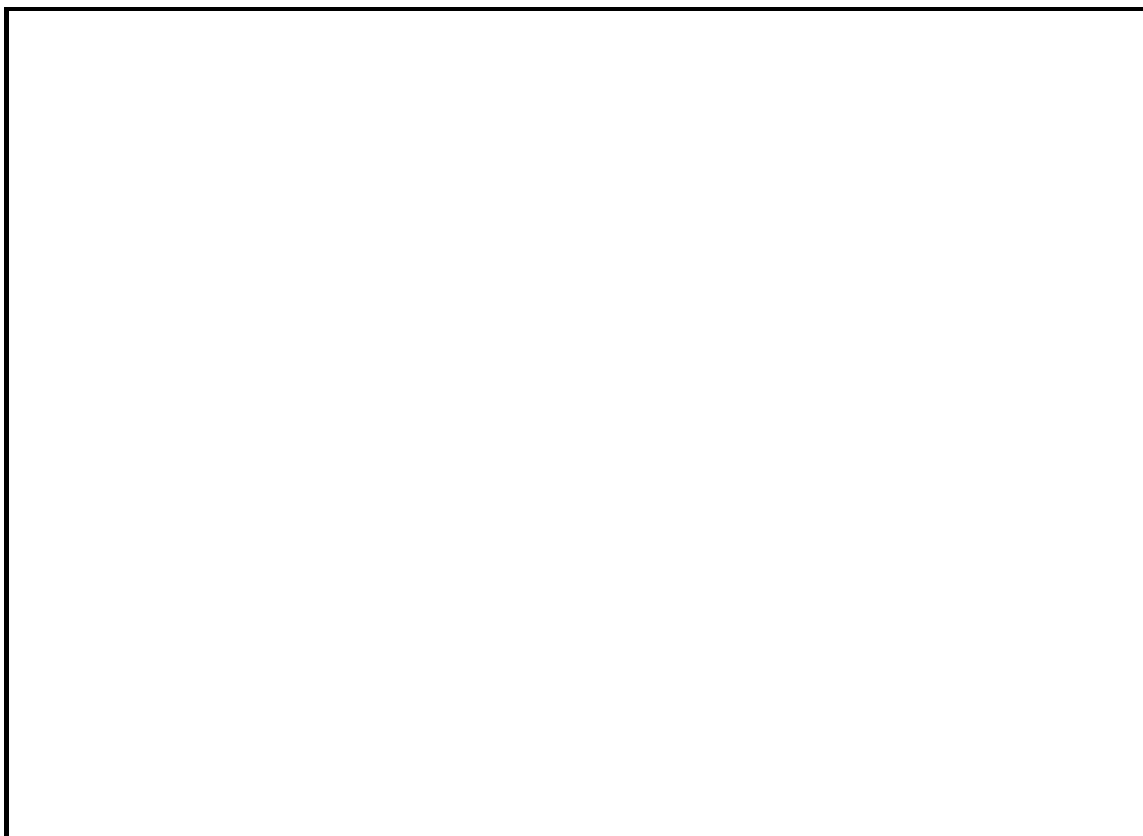
Chapter 4:

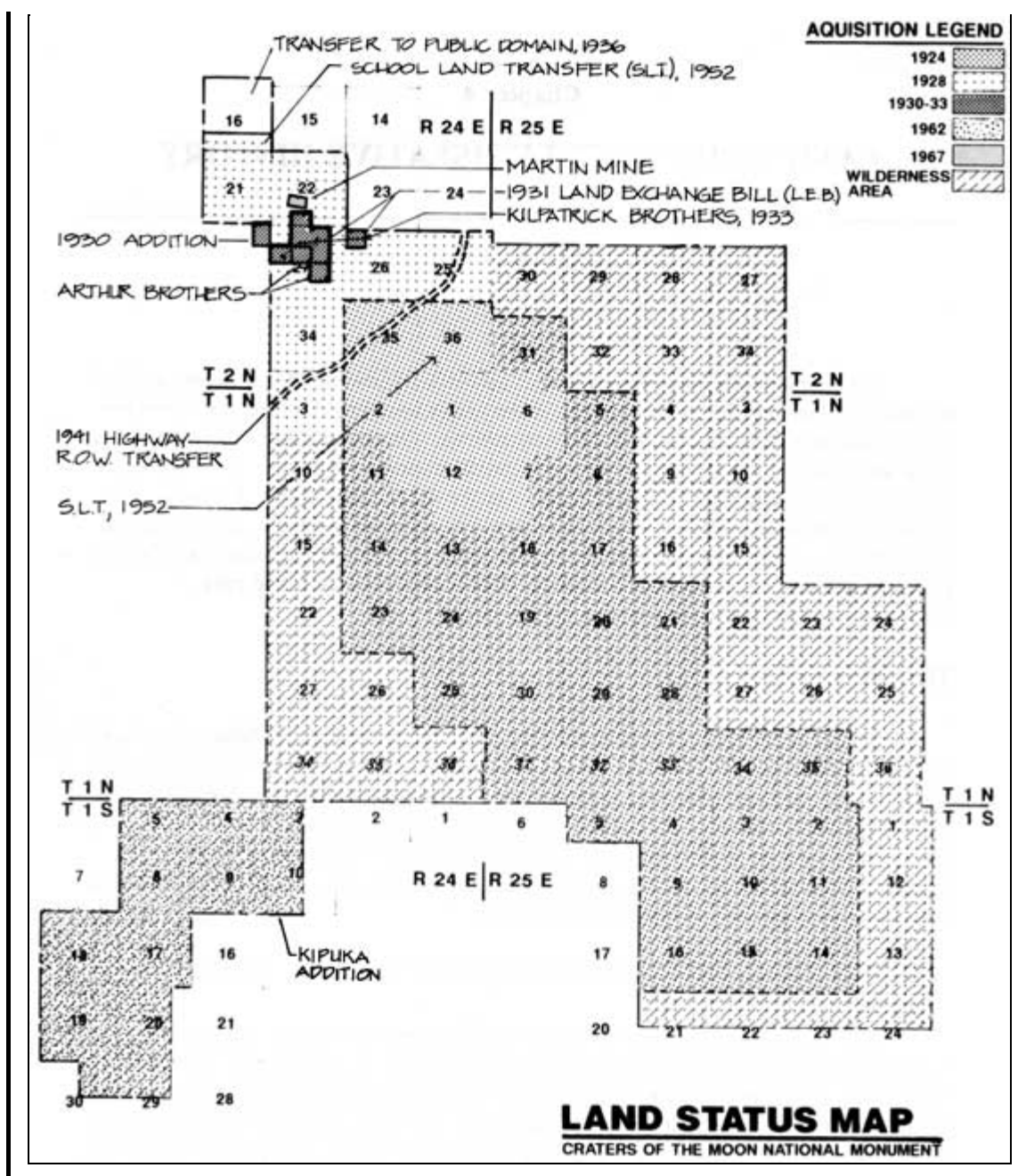
LAND ISSUES AND LEGISLATIVE HISTORY

The monument's land and legislative histories intertwine. Most issues resolved through legislation reflect shortcomings in the area's founding document and revolve around boundary adjustments and land acquisitions. On the one hand, the majority of these were carried out through presidential proclamations rather than congressional acts and experienced little, if any, friction. On the other hand, some of these corrective measures gave rise to a host of new management problems and led to still more actions. And still other activities represented the normal course of Park Service management and the monument's mission. The recent expansion and park redesignation movement represents a special case.

THE NORTHERN UNIT

Added in 1928, the northern unit--the foothills of the Pioneer Mountains--has been one of the most contentious areas of monument management and at the center of numerous land and legislative issues. This northwestern section was acquired primarily for its watershed and springs to provide the monument with a domestic water supply, yet its boundaries also enclosed around five hundred acres of private claims--both grazing and mining--and an abundance of wildlife, giving rise to resource management concerns and legislative revisions.





THE 1928 PROCLAMATION: ADDING THE NORTHERN UNIT

Still to be worked out after the monument's creation was the question of boundaries. Establishment recognized the need to preserve and protect the lava formations along the rift zone, yet ignorance of the isolated district remained the primary barrier to designating appropriate lands. Work to rectify the problem began in 1925 when Max Gleissner of the USGS, with the assistance of the Idaho Bureau of Mines and Geology, conducted a topographical survey of the monument. In 1926 Stearns himself returned to complete his earlier geological reconnaissance and to begin a boundary revision study. In March 1927, he submitted his recommendations for boundary adjustments to the Park Service, enlarging the monument by about thirty-five square miles. Compared with the original boundary, this one gave the area "a more regular and geometric shape," hence making it "much more easily defined and administered." Furthermore, the document's main purpose was to exclude any undesirable land, and more importantly, to include "all of the scenic and [scientifically] important features that were left outside of the original boundary." [1]

In doing so, Stearns chose lands that were significant but also economically worthless; the geologist emphasized that except for a quarter mile, all of the proposed addition was covered with lava. The expanded boundaries, for instance, embraced such well-known sites as Amphitheater Cave, the Bridge of Tears, a large section of Vermillion Chasm, and all of the Blue Dragon Lava Flows. But "the most important and critical extension" was a "single square mile on the northwest corner of the monument." Section 34, T. 2 N., R. 24 E. contained Grassy Cone, a small section of the aa highway flow, and more significantly, access to a feasible water supply for camping. Except for scattered waterholes in the lavas, the monument was otherwise arid, and the geologist predicted water shortages and contamination, and hardship for tourists and campers alike. Thus, Stearns proposed that the Park Service create a campground in the more shaded and lush basin below Grassy Cone, file surface rights to Little Cottonwood Creek, build a reservoir at the spring above the Martin Mine, and pipe the water to monument land. Rather than have the Park Service acquire the water source for itself, Stearns believed his method would cause the least amount of conflict. He had chosen a section of the public domain that possessed mostly valueless timber, mineral, and grazing land, which was not the case a few miles north. [2]

Nonetheless, Stearns realized that soon the monument would require more water and a more secure source. Aware of this reality as well, the Park Service dispatched Civil Engineer Bert H. Burrell the following summer. Burrell believed that the monument's development and tourist appeal hinged on having an ample water supply. The one recommended by Stearns was not enough, and Burrell proposed expanding the boundary north to include the Little Cottonwood Creek watershed, namely the "numerous springs" of the stream's headwaters. In addition to water quantity, the engineer was concerned about water quality, asserting that his location would run less risk of contamination from livestock and wildlife than the chosen by Stearns. Several days after the engineer filed his July 21 report, water levels in the monument's waterholes dropped and in some cases disappeared. This crisis, as a result, caused the Park Service to immediately seek expansion, incorporating both Burrell's and Stearns' recommendations. [3]

To this end, on July 23, 1928, President Calvin Coolidge enlarged Craters of the Moon National Monument "for the purpose of including...certain springs for water supply" as well as the addition of features of scientific significance. The proclamation increased the monument's size from thirty-nine to eighty-three square miles. The expanded area, unlike Stearns' proposal, included Sections 16, 21, 22, 25, 26, and 27 of T. 2 N., R. 34 E., around four thousand acres of the Pioneer Mountain foothills, of which the Little Cottonwood Creek watershed comprised twenty-three hundred acres. [4] As with the founding proclamation, this boundary adjustment passed quietly, the only point of controversy arising later, when the NPS attempted to construct an administrative water system.

THE 1930 PROCLAMATION: THE MISSING SPRING

Continuing its quest for water, the Park Service succeeded in having a proclamation signed on July 9, 1930 to add thirty-seven acres in Section 28 to the monument "that contains a spring which is needed to furnish the said monument with an adequate water supply." [5] Even though the spring was specifically mentioned in the proclamation, the legal description was incorrect. And the existing spring still lies outside the monument's northern boundary, part of a watershed the Park Service would seek to annex in several decades.

THE 1931 LAND EXCHANGE BILL

Although steps had been taken to secure a supply, transporting the water to the monument posed the biggest obstacle. To build the water system required more than annexing the northern unit, it also required running the water line over private lands. Thus, gaining right-of-way easement across the 320 acres of grazing lands owned by the Kilpatrick Brothers Company and the Arthur

Brothers represented a critical element in the program. Without right-of-way permission, the Park Service would not commit to the completion of the water system, yet it was faced with the critical situation of watering the "dry" monument, a situation made all the more acute when funding was received in July 1930, mandating the system's completion within the year. [6] In the midst of this predicament, the agency also looked at the bigger picture. If it could obtain legislation to eliminate the private lands, it could avoid potential conflict with the system and damage to other resources. [7]

Under pressure of a deadline and with its eye on a larger goal, the Park Service negotiated successfully with only one of the land owners, the Kilpatrick Brothers, securing a right-of-way deed on October 10, 1930. [8] Able to cross only the Kilpatrick land, the Park Service thus pursued its ultimate objective of a land exchange. A preliminary stage in these negotiations occurred with the signing of a November 14, 1930 executive order that withdrew "public lands pending legislation," on behalf of the Kilpatrick Brothers. [9] To further assist the Park Service's development plans, Idaho Congressman Addison T. Smith introduced H. R. 15877 "to authorize exchanges of lands with owners of private land holdings within Craters of the Moon National Monument" on January 7, 1931. Essentially, the act enabled the Park Service to trade lands of equal value in the public range near the monument for those private tracts within it. Smith, unsuccessful with past legislation to develop the monument, was successful with this bill. [10]

The act met with strong agency support. Director Horace Albright backed the bill, stating in January 1931 that complete ownership of the 320 acres of private land, over which part of the pipe line would run, "would be very desirable from the administrative standpoint of the monument...." [11] It would allow the monument not only to control lands within its boundaries but also to better control the vital water supply. In seeking support for the bill, Albright expressed the importance that the Service placed upon the water system. We cannot "justify any...development," he said, "until we have the water supply and other conveniences of tourist accommodation." [12]

Albright also defeated a brief spate of protest by grazing interests. In January 1931, Thomas C. Stanford, president of the East Side Blaine County Grazing Association, attempted to block or amend the legislation to ensure continued grazing. In this regard, he complained of government mistreatment to both Representative Addison Smith and Senator John Thomas. Smith, by sponsoring the bill, remained on the agency's side. But Thomas, who had introduced the bill into the Senate on January 14, sided with the livestock industry and agreed to delay the bill. [13]

Stanford criticized the federal government's "exclusionary" policies at Craters of the Moon, pointing to the 1928 expansion and the prohibition of grazing in the monument. His understanding of the monument's creation was that the area would be small and withdrawn from only worthless lands; now, double its original size, it had removed valuable grasslands from the private sector. [14]

The rancher disparaged the Park Service for denying his group and others "the privilege to graze," and for hiding behind the excuse of the water system to steal range land from the livestock industry. Part of his protest stemmed from his confusion about the bill itself. He assumed, for instance, that new lands would be added to the monument, when this had already occurred, the only "addition" being the Service's control of private lands within existing boundaries.

Another point of confusion lay in the bill's provisions for reserving public land outside the monument's boundaries for the exchange, which exceeded the existing private holdings. Hence, Stanford worried as well that this was further encroachment on grazing interests. Sounding the traditional cry of Idaho's ranchers seeking unlimited and unregulated access to the public domain, a cry which reached a particularly high pitch during the depression, Stanford issued this

warning. If "something is not done to curtail these inroads [sic] on our grazing lands, it will deal a death blow to our livestock industry." [15] In a February 12 letter to Senator Thomas, Albright tried to clear up the misunderstanding, stating that

not all of the public land described in the bill will be used in effecting this exchange. It was found necessary to include some alternate land in this description because of certain pending entries which may not make it possible to find land of sufficient value within this area to meet the value of the land proposed to be acquired in the monument. [16]

Learning of this allayed some of the senator's concerns, believing the director's assurances to work out a grazing compromise if the bill passed. For Stanford, this news reaffirmed his belief in the federal government's infringement on individual rights. He was somewhat embarrassed, however, to learn that his protests were interfering with the freedom of private land owners. He quickly clarified that he was concerned only with the removal of grazing restrictions on the land in question, or its removal from the Park Service jurisdiction altogether:

it was O.K. with our association for [the] Kilpatrick Bros. to make exchange of their private personal holdings, located in Crater zone, but...our association wanted protection against [the] Government including in said zone, ten sections of good grazing land, that had no scenic wonders, but was a great asset to Idaho, if used for grazing animals. [17]

Stanford's association withdrew opposition to the bill, Thomas allowed it to pass the Senate, and it was enacted on February 21, 1931. [18]

FINALIZING THE LAND EXCHANGE

During and after the water system's completion in June 1931, the Park Service negotiated the land exchanges contemplated prior to H.R. 15877's passage. There was a particular urgency in the agency's activities; first, the Kilpatrick Brothers were eager to complete the exchange, and second, the pipe line, apparently, crossed a small portion of the Arthur property, for which the Service possessed no right of way. [19]

Since the Kilpatrick Brothers were amenable to the Park Service's plans from the outset, negotiations proceeded with relative ease. The agency decided to trade the Kilpatrick's 240 acres within the monument for 400 acres outside it, the nearly two-for-one deal constituting an exchange of equal land values. The company's cooperation throughout the land negotiations also influenced this final settlement. It had granted the right of way, supported the bill, aided the exchange process, and suffered economic hardships since access to its lands was denied for years. [20] The exchange was completed on September 8, 1932, and officially accepted January 25, 1933. [21]

Negotiations for the Arthur lands, however, were not so simple. As it turned out, one of the Arthurs had died, and the estate was unable to grant an easement or sell the land. Between 1931 and 1933, the land issue then became mired in problems of land title over the eighty acres involved. The government, investigating the land's title history, discovered the legal owners, David F. and Ellen Coon, by 1932. The Coons apparently gained ownership of the tracts in January 1931 through a public auction after taxes went unpaid on the Arthur lands. When the government attempted to purchase the land, it was faced with a confusing set of circumstances. The Arthur estate fought the Coon's ownership rights in court, while at the same time trying to triple the estimated land value of \$800 because of the land's importance to the monument's water system. To confuse the issue even more, John W. Smeed, a livestock owner who had obtained a mortgage to the Arthur property in December 1930, tried to purchase the land from the Coons

for \$400 and sell it to the government for double the amount and collect his investment. After delays and litigation, the Coons were awarded title by the courts on August 17, 1933, and on October 28, 1933 sold the Arthur lands directly to the government for \$800; the land was officially accepted on November 6 of that year. [22]

ADJUSTMENTS TO THE NORTHERN BOUNDARY

Attempts to protect the monument's watershed from livestock trespass and contamination, and its mule deer from hunters and poachers have frustrated managers from the time of establishment. The main point of contention is that the northern boundary does not run along the entire ridgeline of the Little Cottonwood drainage. Except for a small portion, the hydrographic divide does lie within the boundary. But the boundary line follows section lines rather than topographical lines, and posted or not, it has not been readily identifiable on hillsides. And for this reason, the boundary has been a source of confusion for sheepherders and hunters. Over the years, monument officials have proposed a number of solutions: enclose the entire divide within the monument, fence either the divide or the boundary, or realign the boundary along the ridge crest itself. [23]

The first step toward a resolution went forward with the 1936 act deleting most of Section 16. H. R. 7930, "to eliminate certain lands from the Craters of the Moon National Monument," attested to the administrative problems associated with the northern unit after the 1928 expansion. As had occurred with the establishment of the monument, boundaries were drawn without accurate knowledge of the region embraced by the park site. Mapping ensued after the fact, and new topographical surveys revealed that the northwest corner of the monument encompassed the slope of Lava Creek, an area north and below the ridgeline of the Little Cottonwood Creek drainage. In addition, this particular section functioned as a seasonal sheep passway. Lying outside the watershed and "zone" of "scenic" significance and inside the heart of range land, this tract was considered expendable.

In a sense, this legislation represented Thomas Stanford's last stand. After the land exchange had been completed in 1933, Stanford, on behalf of his grazing association, filed a complaint with the Park Service contesting the validity of Sections 16, 21, and 22, seeking their removal from the monument. They were "of no scenic value and, consequently,...should have been left in the public domain." A General Land Office survey in September 1933 investigated the charges and agreed with Stanford's accusations that these sections were "not of scenic value." Yet the agent noted that they were not added for aesthetic reasons but "to protect the water supply." Therefore, only the northern three quarters of Section 16 should be excluded; "this portion...is not in the watershed." [24]

In 1934, taking all of this into account, the Park Service requested that Congress delete 463 acres from Section 16--approximately two miles of boundary. In doing so, Craters of the Moon would better protect its water supply, gain "a more natural boundary," eliminate the need for difficult boundary patrols, and help to "facilitate the administration thereof in connection with the grazing problem." On April 16 of that year, Congressman Rene L. DeRouen introduced the bill and, while uncontested, it was not passed until June 5, 1936. [25]

While this legislation only solved part of the problem with trespass grazing and hunting, no concerted efforts to rectify the situation occurred until mid-century. Worried about water quality and growing volumes of visitors, the Mission 66 prospectus recommended acquiring the entire Little Cottonwood watershed. The only part of it not protected was the west fork of Little Cottonwood Creek, located in Section 28, of which the monument possessed the upper northeast corner. BLM and private grazing lands extended down from the ridgeline to monument land, causing sheep and hunter trespass to happen easily and often.

In a January 4, 1963 boundary report, Superintendent Daniel E. Davis stated that for "all practical purposes" the northern boundary was on or near the divide and easy to define, except for Section 28. To correct this, he recommended altering the boundary to follow the ridge, thus making it "much easier to protect the Monument's wildlife and water resources from encroachment by hunters and livestock." The revision would involve 120 acres, an exchange of 80 BLM acres and 40 acres of private land. At the time, the present land owner also held a grazing permit to the remaining BLM lands, yet posed no immediate threat to monument resources since he willingly avoided trespass by neither using the grass nor water on this section of land. [26]

Anticipating that this amicable situation would not last forever, Superintendent Roger Contor continued negotiations. Contor, however, reported a snag on February 10, 1965. While the land owner, Ed Bowman, was willing to cooperate, he wanted to exchange rather than sell his land in order to maintain his grazing acreage; the extension would have deleted his own land and robbed him of the adjacent land leased from the BLM. Like Bowman, the BLM was willing to assist, but could not offer any adjoining lands to create the exchange. Since the decision had been made to acquire the private lands through purchase and the public lands through proclamation, Contor and his staff arrived at two solutions.

The first plan was to purchase an equal amount of land in Section 20 (if possible) through the monument's natural history association, trade this for Bowman's holdings, and add his BLM grazing lands to the monument. Under these conditions, the livestock owner would duplicate his present situation, and the Park Service would gain around 170 acres and the watershed but not the hydrographic boundary. The new boundary, though, would provide adequate protection, forming a triangle in the northeast corner of Section 28. The second plan proposed redrawing the entire northern boundary along the hydrographic divide. This revision entailed releasing approximately 460 acres of monument land in Sections 16, 21, and 22 "for exchange and grazing under BLM administration." With these lands available, the Park Service could satisfy Bowman's needs and meet its own. [27]

Of the two, Contor preferred the first recommendation. He was not a firm believer in a hydrographic boundary. The grassy ridges of the Little Cottonwood area offered no deterrence to hunters tempted by deer in the watershed and no defense against sheep "spilling over into forbidden territory where the grass is much superior." Hence, this type of boundary promised more not less trespasses, while a properly marked "hillside" boundary would stop both honest hunters and sheepherders. In either respect, action was necessary, by an act of Congress if nothing else. [28]

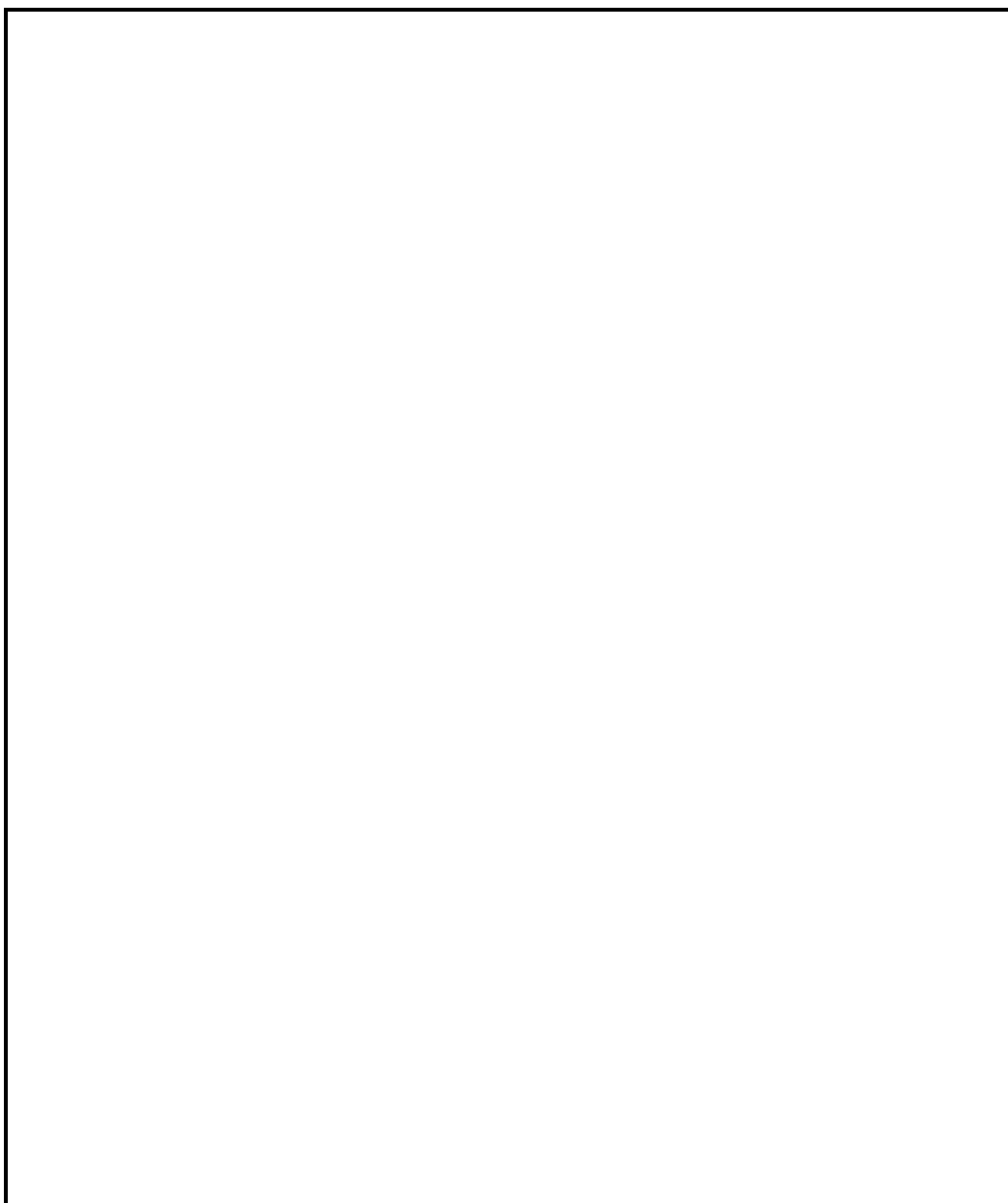
Despite these efforts, the boundary revision proposals fell by the wayside but anticipated future management actions. In the absence of boundary adjustments, the situation became mired in management conundrums. In the mid-1960s, monument managers toyed with the idea of fencing the watershed to protect it against livestock contamination and grazing. The puzzling question was where to locate the fence. The BLM suggested fencing the ridgeline as the best practical way to protect the watershed. A fence along the "hillsides" would impede livestock grazing and would be destroyed by winter snow drifts. The BLM proposed, then, that the Park Service build the fence and lease "insignificant" lands outside of the drainage for grazing. [29] While the proposition might solve one problem, it would create others. Grazing was anathema to Park Service management, and ridge-top fencing would unofficially eliminate park lands.

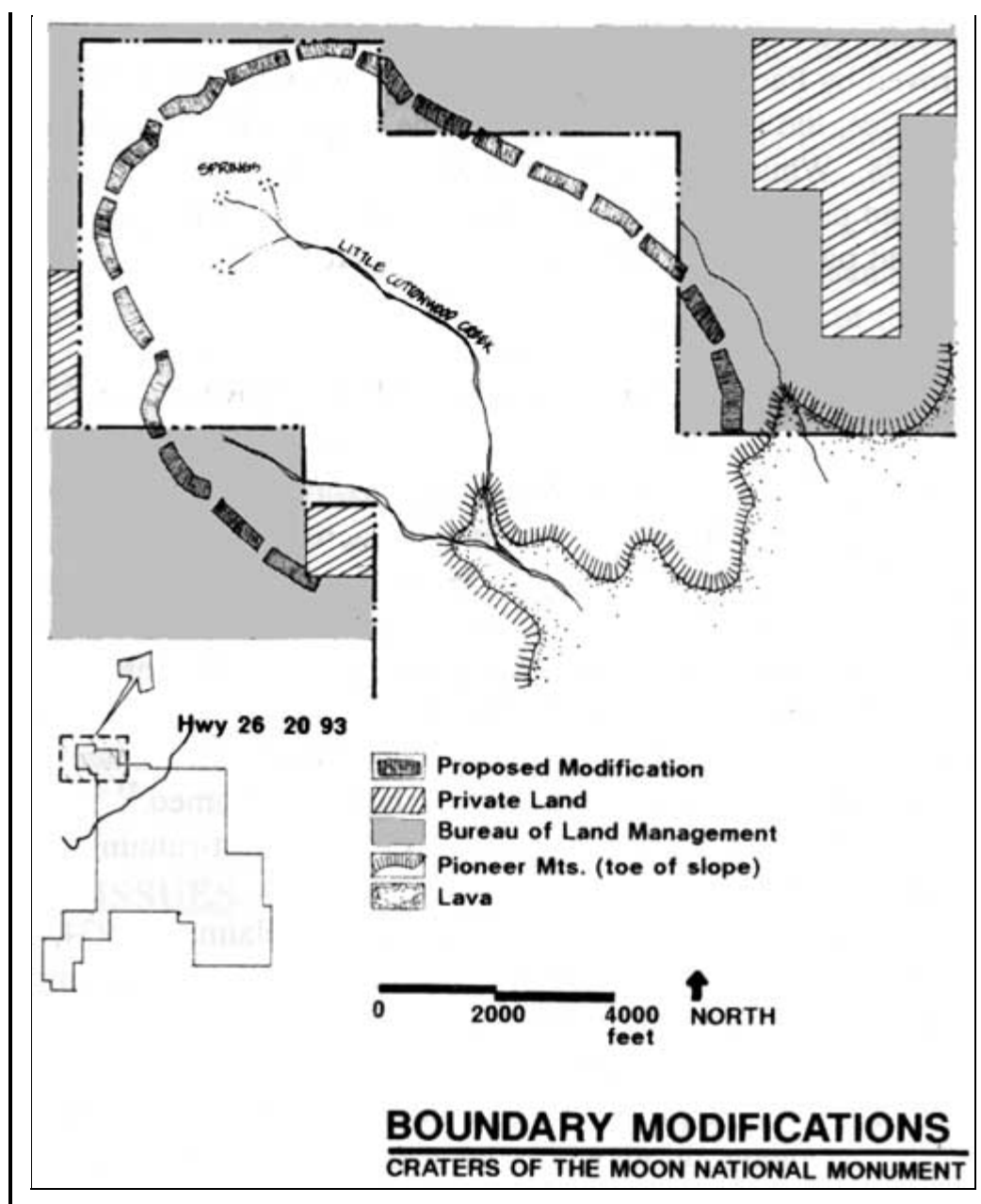
Under increasing grazing pressures in the late 1970s and 1980s, the Park Service, however, undertook two fencing projects on its northeastern boundary along the hydrographic divide. In doing so, it allowed grazing under a special-use permit for around 150 acres of land "fenced out" of the monument. But by the late 1980s, this situation changed; federal regulations revoked the special-use permit, placing the monument in the unrealistic position of prohibiting grazing

in this section. Similarly, the monument was faced with grazing threats from livestock operations on its northwestern boundary. Earlier fears of uncooperative graziers had come to haunt the administration.

In 1986 Superintendent Robert E. Scott, deeming that the monument had exhausted its options, submitted a proposal to amend the northern boundary, placing it along the hydrographic divide and fencing it. Similar to Contor's 1965 proposal, Scott's would accomplish the same goals; it called for a land exchange with the Bureau of Land Management, adding 210 acres and deleting 315 around the northern sections. Motivated by livestock trespass, the proposal was presented as the best solution after decades of conflict. Although illegal hunting might increase it was manageable by comparison. For this proposal "will protect the quality of the Monument's water supply and create a more manageable boundary for both the National Park Service and the Bureau of Land Management." [30]

Approved by Pacific Northwest Regional Director Charles Odegaard and the Washington office, the proposal was sent to the Department of the Interior on January 20, 1988. While the document received the approval of the agencies, private land owners, and politicians involved, it joined the larger issues of water rights adjudication and park designation. Until these issues are solved, the proposal remains on hold. [31]





THE LAST OF THE PRIVATE LAND: THE MARTIN MINE

Adjacent to the Lava Creek Mining District, the monument's northern unit still contained ten known mining claims, totaling 180 acres, after the 1928 expansion. As part of the land exchange program of the 1930s, the Park Service attempted to eradicate these claims and obtain ownership to all lands within the monument. [32] Nine of the claims formed the Martin Mine, or Creek Lode mining claims, covering approximately 160 acres in Section 22. The last claim, was about twenty acres in Section 22, and, while its validity remained in question for more than a decade, its title was eventually cleared and federal ownership was assumed. [33] The Martin Mine, however, was a different story and proved to be the longest-running mining claim case at the monument.

The Park Service had a chance to purchase the claims in 1934, when the mine owners, Otto Fleischer and Era L. Martin, [34] offered to sell their claims for \$4,000 and later \$5,000. But the agency considered this price too high, and believed that with time and the deepening depression the asking amount would downturn. That was not the case. The mine, under various owners and names, operated intermittently and apparently just enough to maintain the claims for

the next thirty years. [35]

In the meantime, the Park Service eliminated a large number of past mining sites and claims with the 1936 boundary revision. The agency renewed its interest in settling the Martin claims after World War II but was unsuccessful until Mission 66. [36] B.F. Manbey, Regional Chief of Lands, stated on September 29, 1959 that taking a more aggressive position in acquiring the mining property was wise, considering that "the recent extensive developments in the Monument are more likely to draw special attention to these claims and possibly influence others to try to obtain them before we can take action ourselves." [37] Negotiations faltered with the question of worth. Mrs. Francisco, wanted \$15,000 for the property in 1959. The Park Service considered the asking price not only because of recent monument developments, but also because the owner was elderly and willing to sell to the Park Service. It was also possible that, if the mine contained valuable ore, a large mining company could buy the property and imperil monument resources. [38]

Although the director of the Park Service favored buying the lands, no immediate funding existed for such an acquisition. Instead Superintendent Floyd Henderson, who was active in the negotiations, pursued a settlement through property appraisal. [39] In his October 11, 1960 report, Bureau of Land Management mining geologist Quin A. Blackburn dismantled the validity of all but one of the nine claims, the Creek Claim. In the fall of 1961, the BLM declared three of the nine claims null and void; and an August 4, 1964 decision declared five more claims invalid. The final Creek Claim of 20.66 acres was contested because the asking price had escalated to the "ridiculous" sum of \$50,000 when the property was valued at \$1,000, the Park Service's offer. Although the asking price was lowered to \$5,000, the amount was still too high, and the BLM scheduled a validity hearing for August 1966. However, the parties involved waived the hearing and settled out of court for the Service's proposal. The Craters of the Moon Natural History Association purchased the property and relinquished the claim on January 17, 1967, and donated the mining interests and land to the National Park Service the following month, thus freeing the monument of all private inholdings. [40]

OTHER LAND ISSUES

THE 1941 PROCLAMATION AND MONUMENT HIGHWAY

In 1938 two organizations, the Eastern Idaho Association of Civic Clubs and Southern Idaho Inc., formed to promote the development of eastern and southern Idaho. Influenced by the depression, these activists saw tourism as an answer to their region's economic problems and campaigned for road improvements on Highway 22, the route connecting Shoshone and Arco. They were drawn to this particular stretch of highway since it traversed Craters of the Moon National Monument. With proper improvements (oiling and grading), the highway would create an east-west flow of traffic through southcentral Idaho; Craters of the Moon, by now receiving nearly twenty thousand visitors a year, would provide the incentive--a roadside attraction for tourists visiting Sun Valley and proceeding to Yellowstone National Park. [41]

Custodian Guy E. McCarty supported the highway improvement campaign and requested that the Park Service upgrade the monument's section of highway. Another reason to assist occurred in 1940 when the state of Idaho began improving Highway 22, realigning and shortening the road from Arco to the monument. To do this the state relied on federal funds, which could not be used in national parks. If the state chose to fund the construction through the monument, it would deplete its budget and have to postpone the improvement of the last stretch of highway to Arco. Interested in helping, the Park Service stated that it could not expend any funds for highway improvement; the road was neither constructed nor maintained by the Service, but rather by the state itself. In fact, the proclamations of 1924 and 1928 had eliminated most of the

right-of-way of the state highway from the monument. After consultation with the state of Idaho and the Public Roads Administration, the Park Service decided that a new proclamation should be drafted ceding the entire right-of-way to the state, and making the road eligible for improvement under the Federal Aid Highway program. [42]

Signed on July 18, 1941, a presidential proclamation transferred a strip of approximately ninety-four acres to the state of Idaho. The legislation excluded the land from the monument and removed it from Park Service jurisdiction. It resolved the issue at the time, but meant that the agency would have little control over that section of the monument. [43]

THE 1952 SCHOOL LANDS CONDEMNATION

In 1952 the Park Service brought to a close negotiations for the acquisition of two tracts of state owned school lands containing some eight hundred acres within the monument. The lands were included within the area's boundaries as a result of the 1924 and 1928 proclamations, and constituted the largest acreage of nonfederal lands within the monument--approximately 1,260 located in Sections 16 and 36.

Director Horace Albright expressed interest in acquiring the school lands in the early 1930s during proceedings for the water system development. However, it was discovered that Idaho law prohibited the exchange of school grant land, thus negating congressional legislation or executive orders employed in the water system land negotiations. [44]

Then in 1948 the Idaho State Land Board declared its interest in eliminating the state's land holdings within the monument. The Park Service, though, needed to find a method of purchase other than exchange. Direct purchase was out of the question, since Idaho law stipulated that school lands could be bought for no less than \$10 an acre, a price too high for the Service. After several years of legal investigation, the Park Service followed the precedent set by the Atomic Energy Commission during its development in August 1950, and entered into condemnation investigations the following October. The Land Board supported this means of acquisition. In May 1951 an appraisal of the lands was conducted, and a price of \$2,880 set; it was acceptable to both the Park Service and the state of Idaho, after some minor conditions were ironed out. [45] A February 13, 1952 preliminary condemnation hearing formalized the acquisition, and shortly thereafter a check was issued and the case closed. [46]

THE 1962 PROCLAMATION AND CAREY KIPUKA ADDITION

As part of its mission to preserve features unique to a volcanic environment and of scientific importance, the monument added a kipuka, a small island of relatively pristine grassland surrounded by more recent lava flows, in 1962. Range scientists discovered the Carey Kipuka in the mid-1950s; it lay about four miles southwest of the monument's southwestern corner, on Bureau of Land Management land.

The idea for the addition grew out of a 1956 study conducted by Dr. F. R. Fosberg, from the National Academy of Sciences, and Dr. E. W. Tisdale, an ecologist from the University of Idaho. Both men believed that the island of grass deserved protection as part of Craters of the Moon National Monument because it was of great scientific value for "the study of grassland ecology." In southern Idaho, "undisturbed areas showing the climatic vegetation climax of grasslands" were fast becoming rare due to grazing and agriculture. The kipuka's "present pristine condition" was the result of a surrounding expanse of rough lava, which had rendered the area inaccessible to domestic livestock. Furthermore, there was little incentive to graze here since ample vegetation existed outside the lava buffer, and there was a shortage of water within it. [47]

On June 26, 1958, Fosberg, representing the Nature Conservancy, submitted his and Tisdale's report on the kipuka to the director of the National Park Service, requesting that the agency annex the kipuka to the monument. The report stated three reasons for the addition:

1. The kipuka contains mature soils and vegetation such as do not occur in the present monument area and which are not found commonly elsewhere in the region due to grazing pressure.
2. While the area is protected from normal grazing by the raw lava flows, it could be made accessible to livestock and at present there is no legal restriction to prevent the area from being used.
3. The area between the kipuka and the national monument consists mainly of raw lava with little or no grazing value. It should be possible to connect the area without withdrawing any appreciable amount of grazing land. [48]

While range scientists admitted that "possible" disturbance had taken place at the kipuka through wildlife and Native American use, the comparative qualities for range studies were invaluable, the extent to which would only be realized if the area were set aside as park land. [49]

Park Service Director Conrad L. Wirth gave his blessing to the proposal and ordered an agency investigation. On September 3, 1958, Superintendent Floyd Henderson and Grand Teton National Park Biologist Dr. Adolph Murie conducted the initial investigation. [50] In their joint report of October 17, 1959 Murie and Henderson confirmed Fosberg and Tisdale's findings, and recommended the kipuka's addition to the monument. They noted that it was a rare opportunity to preserve unmodified grasslands (and mature soils) in the grazing regions of the Snake River Plain. The investigators suggested adding 7,583 acres, contiguous to the monument, in order to shelter the grass island by a natural barrier of raw lava formations. Of that land only four hundred acres, exclusive of the kipuka proper, contained grasslands--marginal at best--which could possibly cause conflict with grazing interests. The kipuka, moreover, merited addition because of its importance to the monument's purpose; it was "wholly scientific." It possessed "no outstanding scenic, or known prehistoric or historic features, and no direct interpretation or the ordinary kind of recreation possibilities." In fact, its inaccessibility was its best attribute, being the reason for its undisturbed state and ecological value. All of this posed no administrative costs or burdens. But the clock was running and it was only a matter of time until this grassland was engulfed by grazing or other uses under current BLM management. Its protection could not be guaranteed, and Park Service acquisition was imperative. [51]

Based on the team's preliminary reports of September 1958 and February 1959, Region Four Director Lawrence Merriam approved the proposal and transmitted the recommendation to the director on February 19, 1959. Acting Director Eivind T. Scoyen's response was favorable, but with some qualifications. First, he advised that a smaller, detached unit would provide adequate protection and, it seems, avoid protests from livestock owners. Second, and along these same lines, he suggested that the agency consider allowing current grazing--what little there was outside the kipuka--to continue. [52]

Initially, it appeared that none of this would matter. In October 1954, the Air Force had reserved a large tract of land south of the monument to use in an "air-to-air gunnery range" in which the kipuka addition lay. Public Land Order No. 1921, however, revoked the withdrawal in July 1959, and the lands were again open to application. On November 5 Acting Regional Director Herbert Maier renewed the kipuka proposal, and reflecting Scoyen's remarks, recommended a detached unit comprised of approximately forty-three hundred acres, whereby grazing, if necessary, would be granted under special permit outside the kipuka proper. [53]

In order to guarantee withdrawal, however, the Park Service faced the grazing issue again. In

December the Service and the BLM conducted a joint investigation "to determine the impact the proposed withdrawal might have upon the grazing use of the land by permittee." In their January 26, 1960 report, both agencies arrived at the final proposal by excluding any lands "suitable or available for grazing." With only lands of "no conceivable economic value whatsoever," and which also happened to be ecologically significant, it was now possible to make the addition contiguous with the monument. And finally, this resolved the addition's size, 5,361.41, an increase of about a thousand acres. [54]

Although Assistant Secretary of Public Lands, Roger C. Earnst approved the kipuka proposal on July 5, 1960, the legislative wheels spun for two years. Public support was not the problem. Throughout the recommendation process, conservation groups such as the Nature Conservancy, Wilderness Society, and Ecological Society of America, as well as local, state, and federal agencies expressed their support of the addition. [55] Bureaucratic delays, instead, were to blame.

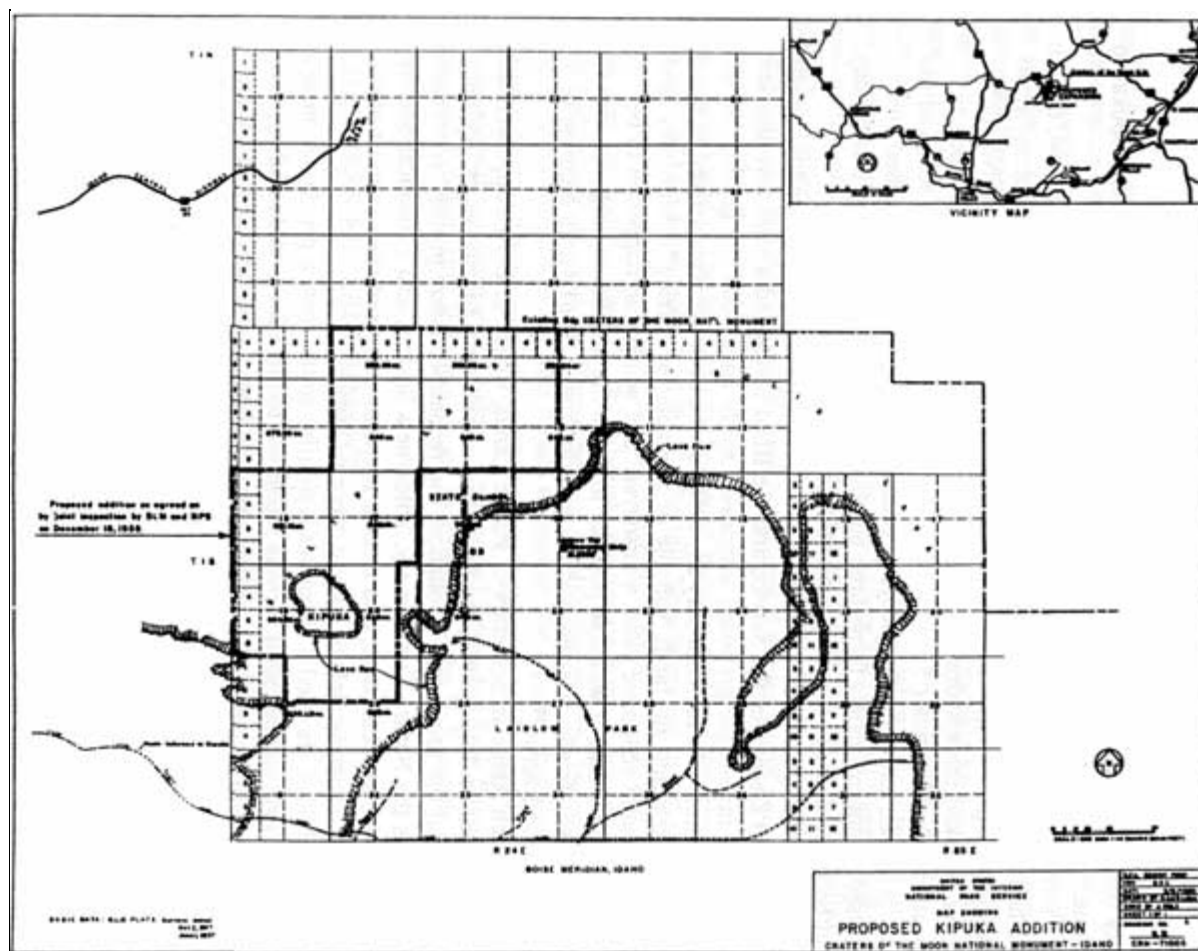
The addition traveled a circuitous legislative route, from a proclamation to a bill and back to a proclamation. It was submitted too late for presidential approval by the end of term in January 1961. Afterwards, the Park Service decided to pursue congressional action, since more than five thousand acres of public domain were involved and would require congressional approval. [56]

Idaho Senator Frank Church volunteered to sponsor legislation on May 22, 1961. Yet more delays ensued after Church and his staff questioned the grazing issue, anticipating opposition from the state's powerful lobby. They also questioned the merit of the addition itself. Why should an inaccessible area be protected? What would be advantageous about adding the kipuka to the monument? Moreover, they wondered about the addition's main purpose--enclosing an area of public land for "wholly scientific" reasons. This logic, so it seemed, ran counter to the Park Service mission of preservation and use; scientific research as a primary objective would obviate visitor use and enjoyment. [57]

Having considered these questions already, the Park Service was able to satisfy the senator's concerns. Yet Church's queries revealed some misconceptions about the addition. Phrases like an "impenetrable barrier" of rough lava encircling the grassland, for example, caused the kipuka to appear indestructible and not worthy of park protection, but these descriptions helped explain the site's "pristine" state. Furthermore, the narrow focus of the kipuka as a "natural laboratory" stressed the site's primary importance but ran counter to the Service's traditional focus of visitor development and education. After this interchange, the agency revised its justification somewhat, underscoring the kipuka's scientific importance due to its isolation, but also emphasizing how its addition would "greatly enhance the interpretive and preservation objectives of the monument." [58]

Convinced of the bill's merits, Senator Church introduced the kipuka addition as S. Bill 2573 on September 12, 1961. [59] The bill, "to add certain lands" to Craters of the Moon National Monument, sailed through the Senate, House, and Bureau of the Budget unopposed. By July 1962, though, the Senate Subcommittee on Public Lands "informally" advised the Department of the Interior that the legislative authority of the Antiquities Act was the best means to acquire the kipuka. Justification for the addition reflected the purpose of the 1906 act; it was an area of scientific, ecological, and educational significance and value. Coming full circle, the Park Service took this course, and Proclamation 3506 was signed by President John F. Kennedy on November 19, 1962. [60]





This map shows the 1959 kipuka addition proposal; note the trails leading to the kipuka and the lava barriers thought to shield the area from animal and human contact.

WILDERNESS ESTABLISHMENT

Sit sometime in the middle of the Black Flow of Craters of the Moon. Though only three miles from a paved road, you will be a half day's journey into the wilderness. And a century into the past. The mood is unmistakably wild and remote. It is like being in a motionless black ocean. [61]

The passage of the Wilderness Act on September 3, 1964 mandated that all National Park Service sites with five thousand or more contiguous roadless acres be studied for possible inclusion in the National Wilderness Preservation System. The act stipulated a ten-year review period; Craters of the Moon's study was begun and completed in 1965, and its wilderness established in 1970. The first Pacific Northwest Region park unit to be designated as wilderness, the monument, along with Petrified Forest National Park, was the also the first NPS unit to be granted the status by Congress. Relatively "issue" free in the public sector, the creation of the area's wilderness caused some internal conflicts within the Park Service itself. Because of this and the honor of being "first," the wilderness area's establishment deserves special attention.

In May 1965, Superintendent Roger Contor, joined by a small master plan team, studied a 42,600-acre roadless area in the monument for wilderness classification. The group completed the study in ten days, and their preliminary proposal determined that 41,475 acres were suitable for wilderness; after the Washington office reviewed the proposal, it decreased the acreage to 40,800, altering boundaries to conform with survey points rather than natural features. The proposed volcanic wilderness comprised approximately 80 percent of the monument's land base,

and 96 percent of the area studied. All of it lay south of U.S. Highway 20-26-93A, excluding the semi-developed zone of roads, trails, and administrative facilities in the monument's northwestern corner. To name the area, Contor chose a Shoshoni term, Tu'Timbaba, or "Black Rock Overpass," referring to the thousand feet the lava landscape rises above adjacent valleys. [62]

Justifying the reasons for wilderness classification, the superintendent wrote of the area's unique qualities; it offered

geologic curiosities, archeological structures and sites, a surprisingly rich fauna, and vegetative cover of special importance to science. The setting is fresh and clean. Because access is limited to hikers, and because there are no attractions which lack counterparts in the more accessible parts of the Monument, human use has been scant.

This was, he recognized, not what people pictured as traditional wilderness; there was "nothing here to attract the mountaineer, a thirty day pack trip party, or a fisherman." Yet Contor believed that the area's "appreciation must rest on other things." It "remains the most interesting and least disturbed segment of the entire Snake River Plain. Those who spend time here will soon feel its lonely and unusual charm." [63]

Following the wilderness proposal was a public hearing, as required by the Wilderness Act. Held on September 19, 1966 at Arco, Idaho, the meeting itself was rather sedate; fifteen people attended, among them Park Service and conservation group representatives. Five of these individuals gave oral statements, and a total of forty-eight letters were received from private parties, local, state, and federal agencies. In general, everyone favored the agency's wilderness proposal. No one, for instance, objected to the concept of wilderness; like Contor they expressed an affinity for the area's qualities of beauty, science, and isolation. Nor did anyone urge a reduction in the proposed area's size. Rather, those few who did criticize the proposal wanted more land added to the wilderness area. [64]

Groups such as the Sierra Club, the Federation of Western Outdoor Clubs, the National Parks Association, the Mountaineers, and the Wilderness Society suggested inward expansion, pressing closure to the developed area of the monument. On the high end of the scale, the National Parks Association proposed four separate wilderness areas south of the highway, totaling 49,800 acres, excluding the headquarters facilities and road corridors. And on the low end of the scale, the Wilderness Society recommended a small boundary adjustment to include the Caves and Natural Bridge. While the different proposals varied on size, they shared a common trait in that they did not contest the planned road extension around Big Cinder Butte. [65]

In defending its proposal, the Park Service explained that it designed the wilderness boundaries to retain access to the volcanic features along the loop drive, and to provide a half to a mile wide buffer to avoid the "influences from U.S. Highway 20-26-93A and the existing and proposed visitor use areas southeast of the highway." By way of compromise, the agency's August 1967 proposal offered a series of revisions to the original boundaries. On the one hand, reflecting some but not all suggestions, the adjustments added a total of 1,945 acres. These extended the proposed boundary to embrace the Natural Bridge and more portions of the North Crater Lava and Serrate Lava Flows; the Black Lava Flow, Coyote and Crescent Buttes, and additional sections of the Big Crater and Blue Dragon Lava Flows. On the other hand, two deletions of 1,960 acres comprised more acreage than did the additions. One subtracted a small amount, eighty acres, southwest of Inferno Cone; the other removed a large amount to provide a sixteenth of a mile administrative buffer between wilderness and monument boundary. [66]

The 1967 proposal satisfied most public concerns for including key sites in the monument's internal section, as well as the administrative practicality of drawing boundaries along easily distinguished grid patterns, as opposed to the diagonal shapes of the original recommendation. In total acreage, 40,785, the latest proposal differed little from its earlier version.

As for other additions, the Park Service denied these for pragmatic as well as development reasons. Most features proposed for wilderness addition, for instance, were located along or near the loop drive and trails, and were among the monument's primary attractions. Here the majority of the monument's 200,000 annual visitors experienced the outstanding geologic features. Thus, to those proposals requesting that areas west of the Natural Bridge and Caves be classified as wilderness, the Park Service stated that anticipated visitor volumes would require "highly developed trails...[the] minimum...sanitary facilities, and interpretive devices," for visitor health and safety as well as the "protection of natural features." Similarly, proposals that singled out Inferno Cone and Big Cinder Butte for wilderness protection were characterized by the Service as small islands, 270 and one thousand acres respectively, within the existing road system and its proposed additions. As "major visitor attractions" they should remain outside wilderness; their small size meant that they could not "offer significant or outstanding opportunities for solitude or a primitive and unconfined type of recreation as would be characteristic of a wilderness." [67]

In terms of wilderness designation, Big Cinder Butte assumed an important role. Because the monument's visitation and administrative infrastructure were confined to the northwestern corner, the Park Service believed that future growth would need outlets, and as shown in the 1966 master plan, the Service planned to extend the road system around Big Cinder Butte. [68] As Roger Contor noted, his master plan and wilderness proposal omitted the butte for future possibilities; "putting everything in wilderness would tie the hands of future managers. We felt we should leave the option open for some limited expansion of frontcountry facilities." At some point, windshield tourists might enjoy a new perspective on monument landscapes. Excluding Big Cinder Butte from wilderness, then, "gave a little elbow room," and, as Contor asserted, "a modicum of roadside scenery might reduce their [visitors'] passion for self entertainment through vandalism or other unacceptable behavior." More importantly, perhaps, was that he was dealing with "firsts." Better to add than to subtract from wilderness, and refrain from setting a bad Park Service precedent should expansion be necessary. For that matter, it was never certain that the road would be built. [69] Even so, this belief later provided a point of internal contention.

Legislation for the monument's wilderness commenced the following year. In March 29, 1968, the Department of the Interior submitted draft legislation to the president for the creation of the Craters of the Moon wilderness, and sent the same material to Idaho Senator Frank Church, member of the Senate Interior Committee, seeking his sponsorship. [70] One year later, April 1, 1969, Church introduced the Department of the Interior (NPS) proposal as S. Bill 1732. In his oration to the Senate, Church justified the legislation by describing the monument's astonishing moon-like beauty, a beauty with relevance to the nation. That same year astronauts planned to walk on a similar lunar landscape, and for this reason, wilderness designation was appropriate. And it was all the more imperative since the drawing power of this national event would lure thousands more tourists to the monument and jeopardize its wilderness quality. [71] On June 15, the bill passed the Senate.

The bill followed a different path in the House. On March 3, 1970, it was introduced and referred to the Committee on Interior and Insular Affairs, where it died. A month later, Idaho Congressmen Orval Hansen and James McClure introduced two wilderness bills, H.R. 16821, which was the NPS administrative proposal, and H.R. 16822, which called for the addition of more lands including Big Cinder Butte, for a total of 43,243 acres. [72]

The latter legislation represented the influence of Superintendent Paul Fritz. Fritz, who succeeded Contor in the fall of 1966, disagreed with the accepted master plan and wilderness proposal. In particular, Fritz believed after walking the proposed boundary that the planned road addition encircling Big Cinder Butte was a mistake. [73]

The main attraction of the new road was the tree molds of Trench Mortar Flat, the only features not accessible by car. While this extension would complete the motorist tour of the monument, preservation of these fragile lava formations outweighed the importance of visitor access. In a December 10, 1966 memorandum Fritz requested a new master plan study to enlarge the wilderness boundary to include Big Cinder Butte and prevent further development. Assistant Director of Cooperative Activities, Theodor R. Swem, rejected the superintendent's proposition. No reason warranted revision of the recent master plan; it had been agreed to at all levels of the administration. And more importantly, "the plan provides a reasonable balance between wilderness and non-wilderness use and it also provides opportunities for increased and improved interpretation of the area." He urged Regional Director John Rutter to bear this in mind in order to "overcome the difficulties" posed by Fritz's suggestion. After learning that his superiors would not entertain any boundary changes, the superintendent reluctantly agreed to the agency's proposal. [74]

Despite his original agreement, Fritz countered the Service's plans by circumventing administrative channels to win approval of his wilderness proposal. Beginning in 1967, he gained support from local communities and environmental groups, such as the Sierra Club and Wilderness Society, who had originally expressed their desire to add more lands to the Craters of the Moon wilderness. These interest groups then lobbied the Park Service and congressional representatives, and in Congressmen Hansen and McClure found sponsors for the new proposal. [75]

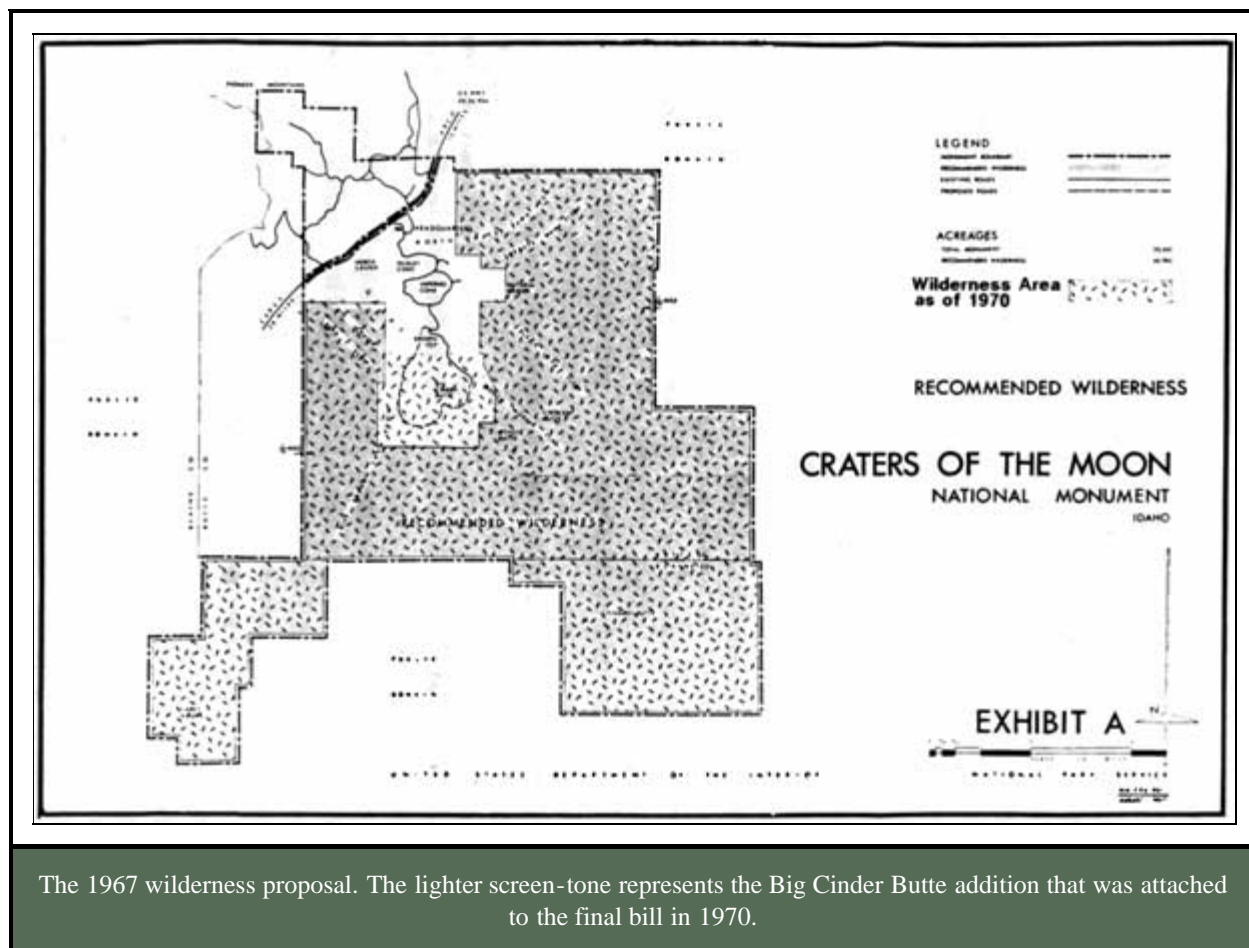
The Park Service in spite of Fritz's influence stood behind its original proposal passed by the Senate. Acting Secretary of the Interior Fred J. Russell expressed the Service's position to Congressman Wayne N. Aspinall, chairman House Committee on Interior and Insular Affairs, in a June 25, 1970 letter. In principle, the Park Service determined that development was necessary to meet the monument's mission and to accommodate rising visitation. The road encircling the butte

would disperse visitors to relieve congestion on the present road system; such congestion is expected to become critical in future years. Exhibits along the road would interpret such features as tree molds, lava tubes, fissures, ecology and plant succession. Visitors unable to make long hiking trips would have access to all of the major types of volcanic features on this self-guiding interpretive road.

Hence, wilderness designation for Big Cinder Butte would preclude both this improvement and the presentation of the monument's full array of volcanic phenomena to the motoring public. [76]

Unfortunate for the Service and fortunate for Fritz and supporters of the Big Cinder Butte addition, the House Committee on Interior and Insular Affairs concluded in their favor. H.R. 19007, an omnibus wilderness bill introduced on August 13, 1970, provided for an enlarged Craters of the Moon wilderness of 43,243 acres. [77] Commenting on the amended bill in a September 9 report, the committee stated that the addition of "this 2,243 acres of land would make a meaningful contribution to the wilderness area and that it would not unduly interfere with public use and enjoyment of the national monument." [78] The full House passed the bill on September 21, 1970. The Senate concurred with the House in S. 3014 on October 12, and President Richard M. Nixon signed the bill into law on October 23, 1970. [79]

In the end, the Park Service lost with its proposal, but won by gaining the first wilderness in the System. Compared to the larger parks, the Craters of the Moon proposal lacked high-profile controversy, and buried in a large bill, the discrepancy over two thousand acres lost some of its importance. The new Craters of the Moon Wilderness, as it was called, [80] bore the stamp of Superintendent Paul Fritz, who spoke out against his own agency for the protection of monument resources. Yet the area also owed its existence to individuals, such as Roger Contor, who recognized the volcanic environment's wilderness caliber.



PARK VERSUS MONUMENT: A HISTORICAL PERSPECTIVE

The creation of Craters of the Moon as a national monument rather than a national park is a theme that has relevance throughout the area's history. Changing the status from monument to park has arisen several times since Craters of the Moon's designation, raising the question of standards and what defines a national park. Traditionally, parks preserved only the most sublime tracts of the western landscape. Parks were large natural areas, diverse, panoramic, and pristine. They were the best of the best: the "crown jewels" of Yellowstone, Yosemite, and Glacier. [81] Whether Craters fit into this category has been the subject of some debate. Monuments by virtue of the Antiquities Act were to protect specific natural and cultural sites of scientific and historical value within a small area. How the monument rated in beauty, natural diversity, and size has formed important elements of the discussion, not just as a matter of principle, but because many equate park status with increased tourism and national recognition. For these reasons, Idaho residents have periodically lobbied for redesignation of Craters of the Moon as a national park.

That monuments could become parks grew out of the expansion of the National Park System. When adding new parks, the Service inconsistently adhered to its espoused standards and

opened the door for exceptions. Interpretation of the Antiquities Act, with its broad language, led to a wide range monument types and sizes in the early 20th century, blurring the distinction between monument and park classification. This occurred because the creation of parks was subject to the will of Congress and often met with congressional delays. The 1906 legislation, on the other hand, bestowed upon the president the power to establish monuments, bypassing lengthy and costly political battles. The Park Service's two energetic and resourceful leaders, Stephen T. Mather and Horace M. Albright, often employed the monument category as a storehouse for threatened lands meeting political opposition as national parks. Grand Canyon, Zion, and Acadia national parks, for example, began as national monuments; once political conditions were favorable, they were upgraded to national parks. Application of the monument designation in this manner clouded classification standards and how the Park Service viewed the role and value of monuments in general. [82]

Most of the parklands created from monuments were "parks-in-waiting." Characterized by spectacular scenery and size, they overshadowed a conglomeration of smaller areas presenting an archaeological, historical, or geological theme. When these elite sites were gone, the remaining monuments were relegated to a "second-class" distinction; administratively, they suffered from inadequate funding and neglect. Focused on collecting more jewels for the park crown, the Park Service overlooked the needs of monuments in the process. The federal reorganization of 1933 consolidated the administration of national monuments under one agency, the Department of the Interior, for the first time, granting them better management and a higher station. Even so, the past was hard to shake. And the popular view throughout Park Service history, it seems, is that park status confers more prestige and importance on an area. [83]

The limited historical documentation surrounding its designation suggests that Craters of the Moon did not experience the monument-park type of tactical maneuvering. There is no evidence that the monument's establishment was embroiled in controversy. The government carved the area's boundaries out of a remote, uncharted section of the public domain deemed economically worthless. Moreover, the area's characteristics fell within the guidelines of the Antiquities Act. The volcanic phenomena were compressed within a small geographic range. Simply put, Craters of the Moon was a monument to geology.

There never seems to have been any question about Craters of the Moon's distinction from the start. Early resolutions, for example, emphasized setting the site aside as a monument. Director Stephen Mather concurred when he discussed the area's merits in terms of how well they matched the Antiquities Act's provisions for scientific values. Congressman Addison T. Smith, who thought highly of the area, favored monument over park status as a political expedient. Furthermore, as the activities of men like Robert Limbert attest, protection was more important than classification.

Yet the monument was not entirely free of discussion over park status. In the four years after the monument's designation, talk surfaced about the possibility of upgrading the area to a national park. The seeds of reclassification had been planted in the creation era when some supporters had pictured an area measuring 250 square miles. Not surprisingly, when news of the 1925 and 1926 surveys and expansion plans surfaced, Arco residents grew excited hoping that the monument's enlargement would lead to its conversion into a park. In October 1926, the Advertiser noted that Stearns had discovered new and extensive features, such as tree molds and caves, adding greatly to the monument's significance. To protect these discoveries, the monument might be enlarged by as much as one hundred square miles. These new developments, the paper concluded, made "the monument of such importance that he [Stearns] will recommend that the Monument be made a National Park." [84] Reclassification would bring increased Park Service attention in the form of appropriations, maintenance, and administration. Primarily, though, it would bring increased importance and recognition to the

region.

Harold Stearns' enlargement report of March 1927, however, contained no recommendations for altering the monument's classification. One last attempt occurred in December 1927. Addison Smith proposed "to introduce a measure in congress [sic] at the present session to have this change take place." [85] Despite this announcement, no legislation entered the federal record, and when the monument's size was increased in 1928, its classification remained the same. Presumably, the same reasons which applied in 1924 carried weight four years later.

Although Craters of the Moon received little opposition, addressed either as a monument or as a park, the national park idea was not cast about casually in Idaho. Idaho is the only western state without a national park. Reasons for this can be seen in the near century-long debates over the Sawtooth national park proposals. They evince the strength of the state's powerful mining, timber, and grazing lobbies to oppose any infringement on resources perceived to be exploitable. Hardly the rival of the Sawtooths in scenery or resources, Craters of the Moon has nevertheless been the focus of discussion for Idaho's first national park. Within the last two decades, the debate over national park classification has resurfaced, raising many of the same issues discussed in the 1920s.

RECENT PARK MOVEMENT

In 1969, Craters of the Moon Superintendent Paul Fritz rekindled the proposal for the monument's expansion and national park status. [86] Fritz was spurred by the research of volcanologist Dr. Fred Bullard in the mid-1960s, who asserted that the lava flows surrounding the monument contained "the entire story of vulcanism...with only an active volcano missing." Further influencing his vision was the 1969 NASA astronauts' one-day training mission at the monument. Accompanying the astronauts as they familiarized themselves with a lunar landscape, Fritz realized for the first time the importance of "what was out there beyond the monument." [87]

What lay out there was the rest of the Great Rift, and Fritz proposed that the new national park include the three major lava flows along the Rift's sixty mile length: the rest of the Craters of the Moon Lava Field virtually surrounding the monument, and as separate units to the south, the Wapi and Kings Bowl flows. Within this landscape existed features already common to the monument, yet there were some standouts; the Kings Bowl contained, for example, the 155-foot-deep Crystal Ice Cave and the world's deepest accessible rift of eight hundred feet. The superintendent also envisioned drawing boundaries around Cedar Butte and Big Southern Butte, the 7,500-foot dormant volcano southeast of the monument. Besides expanding to include the flows of the Great Rift and associated features, Fritz's proposal contained practical matters. It would have acquired approximately forty acres of the only private land left adjacent to the monument's northwestern boundary for watershed protection, and relocated the headquarters to Arco. The former provision was to solve the nagging issue of northern unit's boundary adjustment, and the latter provision to relieve staff from working in cramped facilities and to assist in public relations. It also would have engaged the Park Service in a joint management venture with the Atomic Energy Commission of the Experimental Breeder Reactor-1 (EBR-1). In all, the plan called for approximately 300,000 acres to be added to form a park of 354,000 acres. [88]

Fritz's plan reflected his broad agenda for the monument. His park proposal, for example, joined issues of expanding the wilderness area and alleviating growing tourist pressures on the monument's existing facilities. But selling parks to Idaho was one of his main missions. An important element of his message was that park designation and expansion would bolster local economies through increased tourism. As with the pursuit of his other goals, Fritz's park plan was not well received by his superiors. Unlike other instances, though, when a new master plan

had been denied, the Park Service deduced that now there were legitimate reasons to undertake a new study. Recreation in southcentral Idaho was building, especially in Idaho's national forests, and it would only rise with the newly designated Sawtooth National Recreation Area. It was thought, then, that tourist travel would increase in the region, and Craters of the Moon would feel the impact. Already the shoulder months in the spring and fall were showing signs of heightened use.

In 1973, the Park Service and Denver Service Center embarked on an expansion study that would recommend whether enlargement was warranted, and once completed, if it merited redesignation of the monument as a national park. The study also was to assess the area's current administrative conditions, its visitor use and experience, and its role in future recreational developments in southern Idaho. Planners devised five alternatives for the monument's expansion, most of which resembled Fritz's proposal. The addition of three contiguous areas was considered: the northern unit, the Craters of the Moon Lava Flow southwest of the monument, and the Great Rift south to Blacktail Butte. To this the other alternatives merely added on flows and features until reaching the entire size Fritz had proposed.

But that was as far as the plan went. In 1974 Fritz transferred and the issue was dropped. Regional Director Rutter had not been keen on the idea. And while there were good reasons for preserving the entire Great Rift for scientific purposes, the Park Service worried that creating such a large park might be administratively cumbersome. It could also appear as a land grab, alienating the agency from private land owners--graziers and hunters--and the Bureau of Land Management--which managed most of the land under study. In the bigger picture, what took place at Craters of the Moon might ruin the Park Service's chances of creating new sites in other areas of the state. Whether the monument would be enlarged and classified as a park remained to be answered by another study team and Congress some fifteen years later. [89]

In the economically stable period of the early 1970s, the proposal did not gain strong public support. Agricultural communities surrounding the lava monument were doing well financially, and added tourist dollars from a national park did not seem to strike any chords. By the mid-1980s, times had changed. Some rural towns were slumping, and tourism and the idea of a park in the lavas resurfaced with fervor. From 1985 to the early 1990s, expansion and national park status gained its most powerful thrust in the monument's history, culminating in another NPS study and legislation introduced into Congress. The 1980s' movement reflected the earlier creation period. It spawned the formation of a committee dedicated to the cause, maintained an economic interest in tourist income, and enlisted state congressional support.

The movement for the current park status and expansion germinated in 1985 with the proposed Minidoka-Arco Highway. The plan, developed by a group of local businessmen from southern Idaho, pushed for paving a sixty-mile dirt road cutting through the lavas between Arco and Rupert. Boosters saw it as a way to expand local markets, particularly for farm products, within the region--especially those communities associated with the Idaho National Engineering Laboratory. Two years later, some of the same individuals involved in the Minidoka-Arco Highway Committee, including former governor John Evans, revived the Craters of the Moon park proposal, and formed the Craters of the Moon Development Inc. Paul Fritz, now a consultant, assisted, and because he included the proposed road as the park's major thoroughfare in his resurrected plan, the two ideas merged. Once more the perceived benefits of an enriched economy influenced supporters of the park idea. The road would not only connect small intraregional towns, but also infuse the depressed region with park tourist dollars. [90]

Endorsed by local chambers of commerce, the park movement reached the state level in March 1987 when the Idaho State Legislature memorialized the "U.S. Congress to redesignate Craters of the Moon National Monument as Craters of the Moon National Park." [91] As the 1987

resolution shows, the state as well recognized the economic benefits a park would generate through increased tourism. The economic downturn of the period and the welling of state pride with the approaching 1990 centennial altered past aversions to creating a park in Idaho. Redesignation would not only give the state its first national park, but also would create "more publicity for Idaho and thereby attract more tourists to the State." As a result, all communities would benefit.

The state also believed that such a change was essential because the area better fit the definition of a park than a monument. Curiously, the state's argument rang with the ambiguities surrounding monument and park status aired in the early 20th century. Other parks such as the Grand Canyon, it stated, started off as monuments and were given park classification. Therefore, since the monument was established during this period when little distinction was afforded between the two categories, "the time is due now for Craters of the Moon to receive National Park status." Administratively nothing would change; the state stressed only a switch in status not size. Thus it seemed clear that the upgrade would help fill the state's coffers and bolster its stature.

The movement, however, involved both additional acreage and reclassification. It received congressional support from Idaho Democratic Representative Richard Stallings. In the fall of 1987, Stallings requested that the Park Service conduct a formal study for park status. The Park Service did not respond to his request immediately, and the state's Republican delegation seemed uninterested. Nevertheless, the movement sustained its momentum. In April 1988, Governor Cecil Andrus, expressing his "enthusiastic support" for park designation and expansion, appealed to NPS Director William Penn Mott for assistance. [92]

Public interest and political pressure paid off. Mott promised Andrus that as part of the monument's general management planning process the Pacific Northwest Regional Office would "explore the suitability/feasibility of designation of the area as a national park." Planning teams would also consider adjacent sites for possible expansion. [93] In March 1989, a Park Service team followed through on the director's pledge, completing a reconnaissance survey of lands to the southwest and southeast of the monument.

The survey covered essentially the same landscape of the 1970s' investigation. Forming an oval shape, it began with Shoshone as the westernmost point, and arced south through Minidoka, northeast to Blackfoot, northwest to Arco, and southeast through Carey. The land studied fell under various forms of public ownership, administered by the Bureau of Land Management, the National Park Service, and the state of Idaho; other lands were withdrawn for military use, administered by INEL, and a small percentage were privately owned. The major volcanic features evaluated in the study were similar to the earlier study as well. The entire Great Rift system and its four rift sets were considered, adding Open Crack to the previous three that were considered. [94] The study team concluded that the Great Rift was nationally significant, yet sites outside the system, such as Big Southern Butte and Cedar Butte, while interesting in and of themselves, were not nationally significant. Hence the Great Rift system was a viable "addition to the national park system," but it did not possess the "diversity of features generally associated with a national park and would best fit in the monument category." [95]

Congressman Stallings, presumably convinced that park status was in fact feasible, introduced a bill to Congress on November 20, 1989 "To designate certain public lands in the State of Idaho as Craters of the Moon National Park and the Great Rift National Preserve." [96] Under H.R. 3782, the Park Service would manage four units. Craters of the Moon National Park would expand the former monument by 320,240 acres for a total of 373,785 acres. It would be composed of three units: a large section of the Great Rift system (Craters of the Moon Lava Flow and the Crystal Ice Caves and Wapi Flow areas), and lands east of the Rift surrounding Big Southern Butte and Cedar Butte. The fourth unit, the Great Rift National Preserve, 123,040

acres, would contain the Open Crack and a section of the King's Bowl rift sets and connect the northern and southern units of the park. Both the park and preserve would amount to approximately 500,000 acres, most of which was formerly administered by the BLM. [97]

While the National Park Service remained neutral on Stallings' legislation, it expressed reservations over the bill's provisions. The continuation of grazing in certain allotments and allowance of hunting in the proposed Great Rift National Preserve were incompatible with standard NPS policies. It seemed that these conditions would cause management conflicts between the Park Service and Bureau of Land Management with their different management philosophies, especially if they shared similar tracts of land such as existing grazing allotments. The Park Service also voiced concerns over the high costs of developing the south park unit for visitor safety and enjoyment, tending to mining claims and state and private lands, and acquiring lands possibly contaminated with hazardous waste. In addition, there were an array of management and public use problems with hunting and grazing spilling over into the park from the proposed preserve since there were no clearly definable boundaries in the new areas. Unnatural boundaries also posed the need for more wilderness surveys, and begged rethinking to simplify agency management and avoid potential friction of different users. And finally, the Park Service did not share the optimism of park supporters that a park would be a tourist boon. [98]

Overall, the Park Service stood by its 1989 recommendation. The Great Rift system was nationally significant but did not deserve designation as a national park. Furthermore, increased protection did not need NPS management; modifications in BLM management could ensure protection for the majority of the expansion area because most of it fell within the BLM's proposed wilderness area. But due to public interest and resource significance, Idaho's congressional delegation requested that the Park Service draft a study of alternatives.

Recognizing that the main points of contention for both proponents and opponents was a lack of "consensus on the boundaries and management concepts," the study team presented six alternatives to the public at hearings in Arco, Burley, and Pocatello, Idaho in May 1990. Without funding for field investigations, the team's proposals represented conceptual rather than exact alternatives, but it was clear that the agency wanted to eliminate the costs and management complexities associated with Stallings' bill.

Except for taking "no action" and implementing H.R. 3782, all of the proposals eliminated the Big Southern and Big Cedar Buttes additions and did not ensure highway construction. One alternative suggested renaming the monument as a park, while another suggested creating a Great Rift National Science Reserve. The reserve would incorporate those lands along the Rift contemplated for expansion and leave them under BLM management in cooperation with various educational and federal agencies devoted to research and preservation. The final two alternatives proposed cooperative management between the Park Service and the BLM to continue traditional yet compatible uses while at the same time maintaining resource protection and public enjoyment. One plan would create the Great Rift National Park and Preserve, the park under NPS management and the preserve under BLM management. The other plan would establish a Craters of the Moon National Monument and Great Rift National Conservation Area, the monument under NPS jurisdiction and the conservation area under the BLM. In both cases similar sections of the Great Rift system would be included. [99]

At the hearings, no consensus was achieved. Ostensibly, Stallings' bill seemed to satisfy many of the park proponents and traditional resource users. It expanded the monument and created the state's first national park. At the same time, it remained sensitive to grazing and hunting interests, allowing both to continue in the preserve and grazing in the additions to the park. Groups interested in expanding the monument into a national park welcomed Stallings' legislation (and NPS alternatives) citing a variety of reasons: the economic benefits from

tourism and highway expansion, the state recognition associated with a national park, the protection afforded by park status (since some thought that the Park Service had worked harder to keep these uses out of parks than monuments) and the natural treasures deserving that protection. Generally, park supporters believed that the monument was worthy of the park title simply because it was a remarkable area, and it was time the Park Service recognized this fact and time that Idaho, with all its natural wonders, had a national park. [100]

Yet groups on both sides expressed apprehension over hunting and grazing. To conservation interests, grazing and hunting on lands administered by the National Park Service seemed antithetical to the agency's mission and a compromise of its management values and the meaning of national parks. To groups such as the Idaho Fish and Game Commission and Idaho Cattle Association, Park Service management--no matter the guarantee of hunting and grazing--posed restrictions to traditional land uses. The Park Service's management of the newly acquired City of Rocks National Reserve, with its restrictions on grazing and prohibition of hunting, soured many Idaho residents toward the agency. Many thought the Service had misled local residents about its policies, and it seemed as though it was happening again.

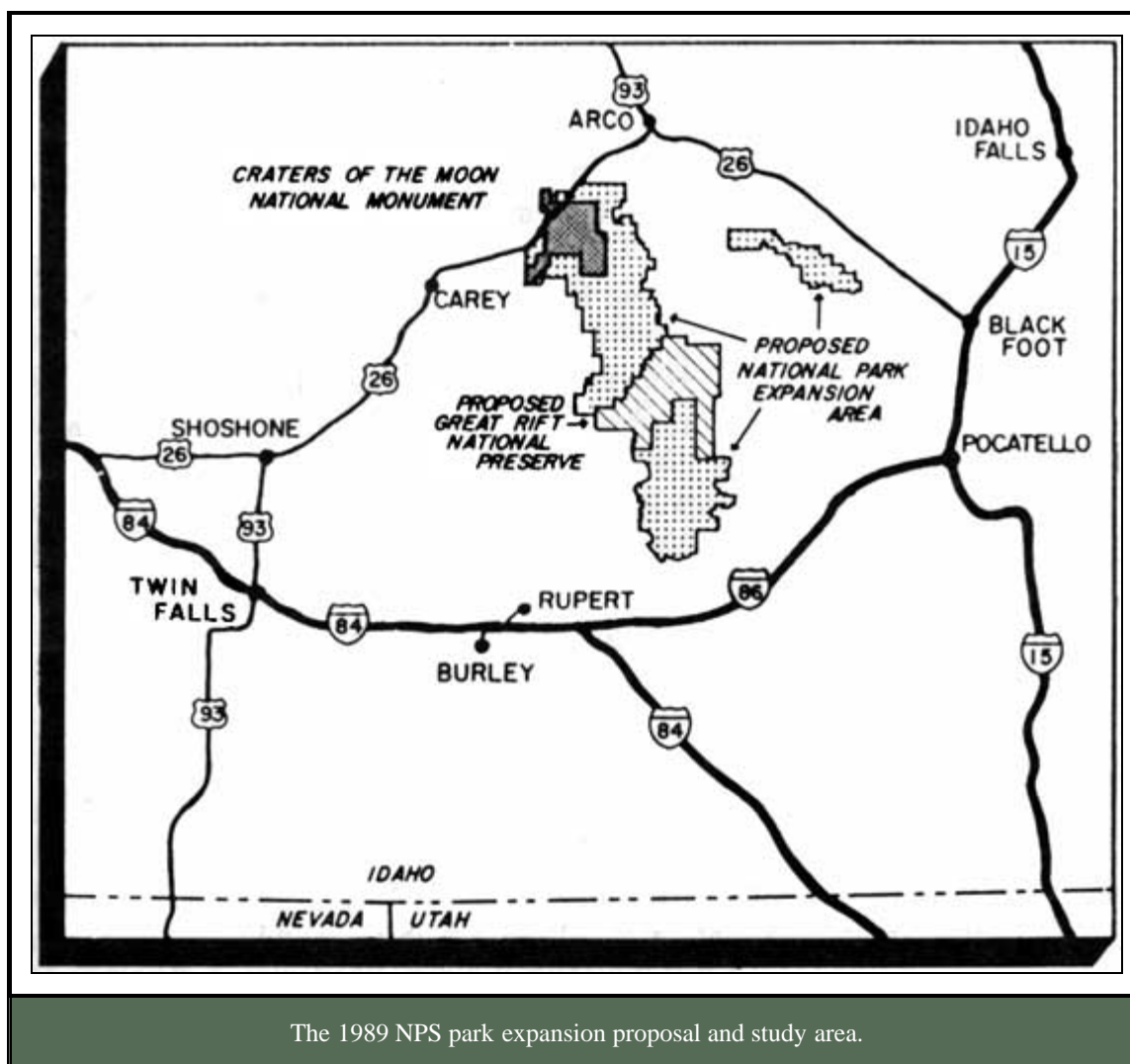
As one opposition spokesman told the Park Service, his group preferred no expansion or changes in administration of Craters of the Moon. Ranchers and hunters, represented by Idaho Sportsmen and Ranchers United and the Coalition Against Expansion of Craters of the Moon National Monument, feared more federal government infringing on the rights of individuals, controlling access to the desert, and imposing restrictions on hunting, grazing, and water. Similarly, a small number of recreationists worried that any reclassification might end traditional activities such as four-wheel driving and biking. Basically, opponents wanted management of the Great Rift area left "like it is." [101]

Although vocal, the number of park supporters and opponents was small. Just over fifty people attended the 1990 public meetings, and thirty-five submitted written comments, none of which resulted in a preferred alternative. Nevertheless, it was clear that the pending legislation would not satisfy all interests. In late July, Stallings withdrew his legislation. He wanted the bill to win wide public support but instead faced a lack of consensus and opposition from the state's influential livestock and hunting interests. And in an election year, the issue became politicized. As a Democrat, Stallings confronted challenges from his Republican opponent, who labeled the park proposal a "land grab" when it was merely a change of federal agencies managing federal lands. Moreover, the Park Service did not recommend the monument for park status, and due to a backlog of pending bills, the House Interior Subcommittee on National Parks and Public Lands was unable to consider the bill in the 101st Congress. [102]

Stallings used the delay to hammer out a compromise for the park proposal among all special interest groups. In January 1991, he renewed his quest to expand Craters of the Moon into a national park. Seeking agreement for the park proposal meant eliminating controversial areas by redrawing the boundaries to conform to the edge of the lava flows. [103] It also meant convincing Congressman Bruce Vento, chairman of the House Subcommittee on National Parks and Public Lands, that his bill was worthwhile. Stallings secured Vento's approval after taking him on an air and ground tour of the monument and additions on August 14, 1991. They were accompanied by Park Service, BLM, Forest Service and state officials, and also met with members of the Craters of the Moon Development Inc., and Governor Cecil Andrus, among other preservationists, at Sun Valley. [104]

After months of public comment, Stallings realized that his first park proposal's boundaries were "unrealistic," and he planned to introduce legislation in 1992 to create a smaller area, one that would be satisfactory to all interests. Moreover, he would not seek park conversion; neither the Park Service nor Vento favored this ranking. Instead he would leave Craters of the Moon as a national monument, protecting, along with the BLM wilderness areas, the Great Rift system.

[105] Whether the bill to expand the monument passes or not, Idaho's aversion to a national park held firm. Equally important, the distinction between monument and park cycled through to the present. In this respect, the Park Service was forced to confront its past and the sometimes ambiguous question of standards. At this juncture, at least, the agency resolved the issue.



[<<< Previous](#)

[<<< Contents >>>](#)

[Next >>>](#)

CRATERS OF THE MOON

Administrative History



Chapter 5: ADMINISTRATIVE EVOLUTION

OVERVIEW OF NPS HISTORY AND NATIONAL MONUMENTS

With its establishment on August 25, 1916, the National Park Service assumed administration of the twenty-one national monuments under the jurisdiction of the Department of the Interior. As a new federal bureau, the Park Service faced a difficult task in managing monuments. Liberal interpretation of the Antiquities Act resulted in a conglomeration of sites ranging widely in geographical diversity and theme. Under these conditions, the role of national monuments within the newly formed park system remained ill-defined. Leaders of the young agency, Stephen T. Mather and Horace M. Albright, expended most of their energy and the majority of the Service's budget on promoting national parks. To a degree, monuments furthered this goal; those of high scenic caliber were promoted to park status, while others functioned as waysides for tourists en route to the parks. Underscoring monuments' subordinate position, Congress finally allocated funding specifically for the protection of national monuments--ten years after the Antiquities Act. Even then, the allotted budget was paltry. Interior Department monuments received \$3,500 to be split among all the areas, barely enough to hire caretakers. [1]

Frequently left to fend for themselves, monuments depended on volunteer custodians to guard and maintain them as best as possible. Paid a stipend of \$12 per year for their "labor of love," custodians agreed to build their own quarters, and were chosen because they resided nearby and held some general knowledge of or interest in the reserve. But the presence of these first managers was sporadic, since they held responsibilities elsewhere, and this fact, coupled with the limitations of the agency's mission and funding, caused monuments to suffer from a form of benign neglect. [2]

Changes in station for monuments arrived with changes to the National Park Service in the 1930s, when the federal reorganization of 1933 and the New Deal elevated national monuments from their "secondary status" [3] to a more mainstream position within the park system. By Executive Order No. 6166, issued by President Franklin D. Roosevelt on June 10, 1933, national parks, monuments, military parks, cemeteries, and memorials were consolidated for the first time under one central agency, the Park Service. Consolidation broadened the bureau's management goals. Diversity, for example, modified the two-category system, to some extent alleviating the "higher or lower" distinction between parks and monuments. New Deal programs also proved to be critical to this outcome, for they added so greatly to the Service's budget that numerous monuments received more attention from the agency, some for the first time. For many Park Service properties, the Civilian Conservation Corps was the most significant of the New Deal programs, contributing essential staffing, planning, and developments necessary to catch up on sorely needed construction and repair work. [4]

Through New Deal support, the Park Service tried to fulfill its dual mandate of comprehensive resource protection and visitor accommodations. Unfortunately, the strides

made during the 1930s halted with America's entrance into World War II. Military involvement not only ended New Deal programs but also cut the Service's operating budget from \$21 million in 1940 to \$5 million in 1943. In similar proportions, the number of full-time employees was reduced and visitation dropped sharply. Visitation briefly rose after 1945, yet the advent of the Korean Conflict led to more lean years for NPS appropriations. When visitation did rise from its nadir of 6 million in 1942 to 33 million in 1950 and then to 72 million in 1960, the NPS System faced new problems. [5]

The exponential rise in visitors found monuments and other areas unprepared for this surge in tourism. Backlogged maintenance and development projects during the war years marked just some of the issues facing Park Service units after years of neglect. Now the same rundown facilities, deemed inadequate in the 1940s, were servicing more than five times as many people. Overcrowding, worn out roads and trails, dilapidated buildings and insufficient funding threatened park resources and diminished the quality of the visit. Overall, a weakened park system was exposed to external threats such as the proposed dam at Dinosaur National Monument in the 1950s. This "crisis" was also symptomatic of the Service's poor relations with Congress. Setting out to strengthen the System's crumbling infrastructure, defend it against external attacks, and renew the agency's independence Director Conrad L. Wirth implemented Mission 66. The decade-long rehabilitation program strove to improve resource preservation, staffing, and physical development for all park units by 1966, the fiftieth anniversary of the Park Service. The end product was a more homogeneous park system, one managed through uniformly high standards. [6]

Mission 66 looked not only to the present but also to the future needs of park areas. Although activities during the 1930s formed a crucial stage in bringing monuments into the mainstream of Park Service management, the execution of Mission 66 helped complete the trend, enabling more active rather than passive management to take the lead in their administration. Thus from rather inauspicious beginnings, monuments have maintained an integral role in the National Park System. [7]

OVERVIEW OF CRATERS OF THE MOON'S ADMINISTRATION

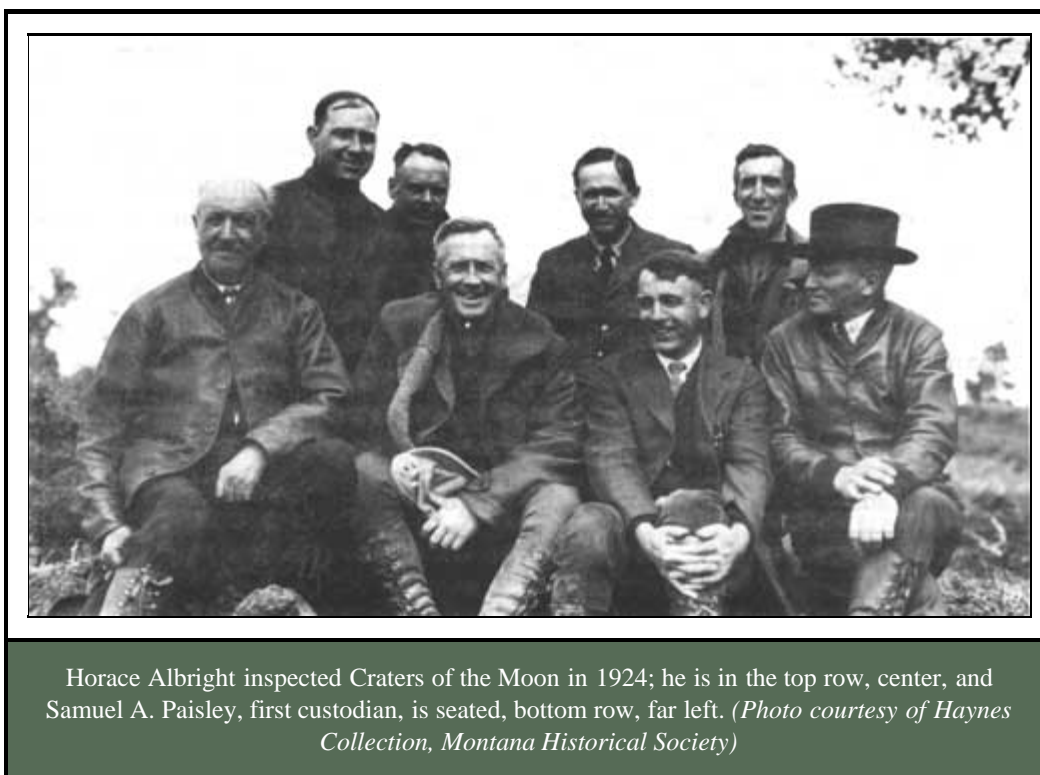
The evolution of Craters of the Moon National Monument's administration has essentially paralleled the systemwide trends within the National Park Service. Relatively small and isolated, the monument existed on the fringe of the System like so many monuments of its time. During its early years, its protection and development were characterized by the second-class status assigned to monuments during the Service's first several decades. Initially funding and staffing were minimal. Budget appropriations went to other, more well-established sites, and caretakers from local communities worked primarily as seasonal volunteers.

In the 1930s, the monument's administration benefited from the completion of some critical improvements carried out, for the most part, through New Deal emergency relief programs. Then, as with other park units, the war years of the 1940s curtailed maintenance and development projects. Visitation rose dramatically in the postwar years. Nationally, the monument was more accessible through highway improvements. And locally, the 1950s and the Cold War brought unprecedented economic and population growth to the region around the monument. [8] National and local trends thus prompted the monument's development strategies to be reassessed. Resource protection and visitor enjoyment required construction of better facilities, roads, trails, and the addition of more rangers. Shortly afterward, Mission 66 inaugurated an entirely new phase in monument administration, correcting past and present management deficiencies, making it possibly the most significant phase in the area's history.

Today, the administration of Craters of the Moon has built upon a long history of managers attempting to fulfill the monument's mission, using the resources at hand. Redevelopment through Mission 66 allowed Craters of the Moon to create a more cohesive administration; it provided the skeletal infrastructure for physical and personnel improvements. Since that period, the scientific and educational goals of the monument's purpose have received greater attention and achieved greater success, with resource management surging to the forefront.

GETTING STARTED: THE EARLY YEARS, 1924-1933

Being the first National Park Service site in Idaho did not bestow any special treatment on Craters of the Moon. Monuments were still the distant cousins of national parks, and areas like Craters of the Moon were geographically distant as well, adding all the more to their administrative isolation. Receiving little Park Service attention and funding, monuments operated with few personnel and often turned to local communities for support, drawing from them volunteer custodians and laborers. Thus this type of self-reliance set the precedent that monuments somehow operated by themselves, and during the 1920s and early 1930s this theme was evident as the Park Service formed the administration for Craters of the Moon. In a period that is often shadowy due to gaps in the historical record, the agency set up the essential elements of Craters of the Moon's administration, providing for the area's management and development, securing a permanent water supply, and addressing the first resource protection issues.



On September 19-20, 1924, four months after the monument's creation, Horace M. Albright, superintendent of Yellowstone National Park and field assistant to the director, conducted the first official NPS inspection of the new monument. [9] This first Park Service visit also marked Albright's first trip to the lava country. He arrived in the middle of a fall snow storm over bad roads, accompanied by an entourage of local and state officials, among them Addison T. Smith and Yellowstone photographer Jack E. Haynes. Despite these physical discomforts, Albright found the area to be engaging, albeit absent any staff, facilities, or notable physical improvements. He assessed the site's immediate management needs for protection and promotion, and for road and trail developments in a February 1925 report to

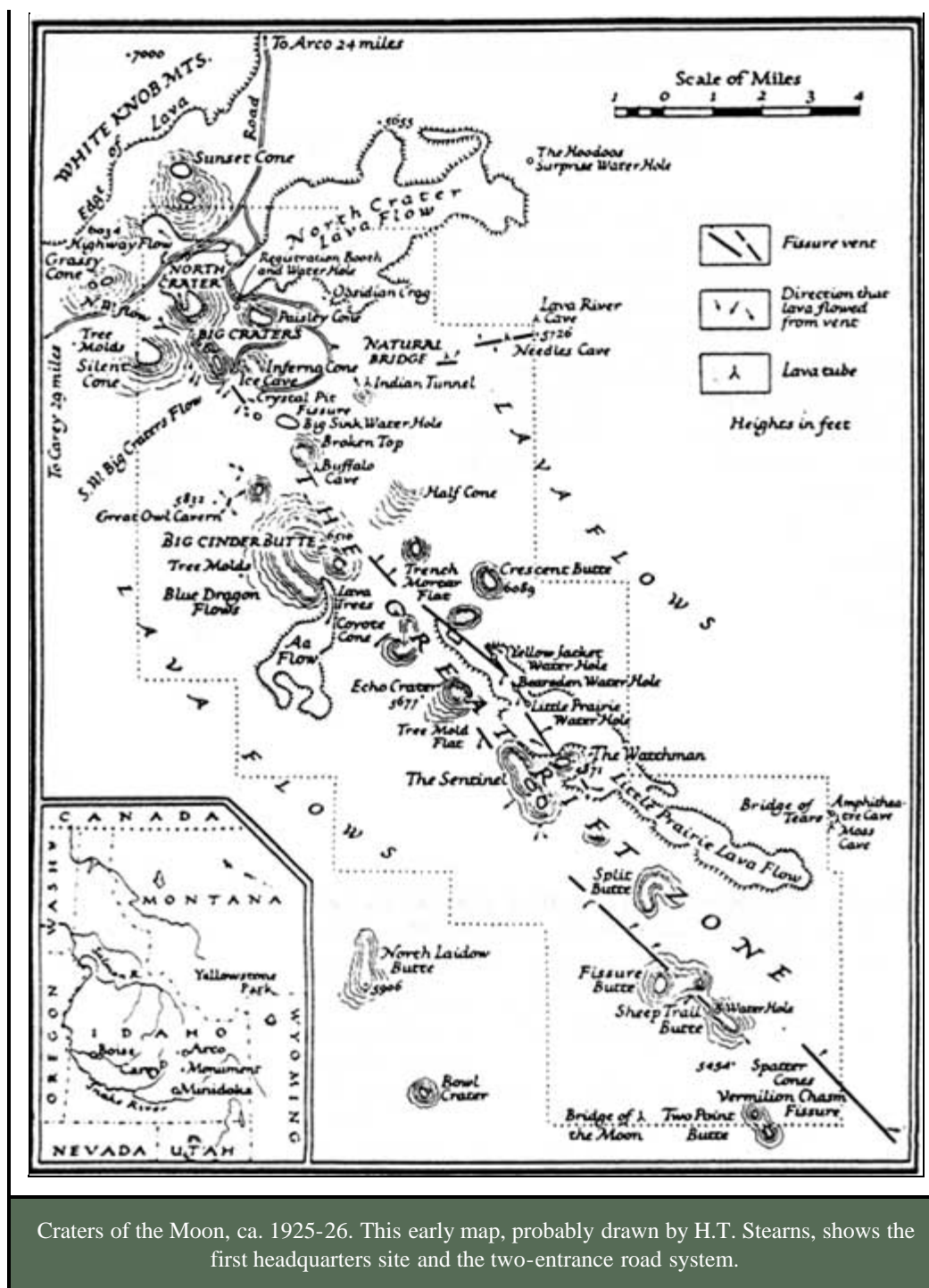
Director Stephen T. Mather. [10] Albright approached his task with a degree of caution. However convinced of the monument's importance, he seems to have been all too aware that new monuments placed more burden on an overtaxed Park Service bureaucracy. To help the area in these early stages, especially, might mean syphoning money from Yellowstone's budget, not a popular option. [11]

The general tenor of Albright's report was that the reserve was in no great danger of vandalism or other threats. Only a small part of it was accessible, in his evaluation, and most of the lava specimens were "too heavy to carry away." [12] This judgment countered claims by participants in the monument's creation movement, who exhorted that the sales of volcanic rocks and vandalism were prevalent. Nevertheless, Albright's opinion that the monument was relatively "trouble free" influenced the area's initial management direction, and foreshadowed the opinions of future NPS officials viewing its management requirements.

Certain that Craters of the Moon was in no great danger, the assistant director delayed the appointment of the first custodian until the year after the monument's establishment. Budget restrictions also determined that the Park Service could not afford a caretaker and any formal administration that first year. No monies were allotted to Craters of the Moon from the agency's budget for the 1924 season. By entering the System near the end of one fiscal year, the monument was "penalized" in effect because budget estimates for the 1925 fiscal year were submitted prior to the monument's creation. Due to the budget system, then, the earliest allotment the monument could receive was in 1926. [13]

Even when it received an allocation, it was a meager one. The thirty-two national monuments administered by the Park Service in 1925 all vied for monies out of a lump sum appropriation of \$46,980; of this, over half was directed to Carlsbad Cave National Monument in New Mexico. Craters of the Moon's first operating budget was \$560, [14] significantly less than Albright's estimates. During his 1924 visit he had told the Arco Advertiser that the Park Service planned to set aside \$15,000 for the monument's road and trail construction in 1925, and in a report to the director that September, Albright produced a scheme for a five-year, \$35,000-\$50,000 comprehensive development program. [15]





Meanwhile, despite the lack of funds, Albright secured the first caretaker for Craters of the Moon. Just as it had done elsewhere in the park system, the Park Service depended on individuals from local communities with a concern for and understanding of the reserve to guard it. The monument's first custodian fit this description. Retired and sixty-nine years old, Samuel A. Paisley resided in Arco, cared about the volcanic area, and worked for low wages. Paisley, whose tenure lasted from 1925 to 1927, also represented a prime candidate based on his fourteen years of experience exploring and promoting Craters of the Moon. Albright had met him during his 1924 trip, and upon Representative Addison T. Smith's recommendation, chose him for the job a short time later. Smith believed, as did the assistant director, that Paisley would make a good caretaker because after his long residence in the Arco he "enjoys the confidence of the people...." [16]

Paisley, who wintered in California, was unavailable to work until the following spring,

which fit well with the circumstances surrounding the monument's administration. In April 1925, the Park Service offered Paisley the standard \$12 per year salary, official stationary, and no operating budget in return for his services. At first refusing such nominal pay, Paisley changed his mind and officially entered office on June 1, 1925. What changed his mind was Mather's decision to bend the agency's rules and permit the custodian to supplement his income by operating an exclusive guide service. Although a conflict of interest was apparent, the director viewed the situation as a temporary expedient. A certain amount of political maneuvering accompanied Paisley's appointment and special treatment. Congressman Smith, pressured by Arco's community leader, Clarence A. Bottolfsen, in turn pressured the Park Service to hire Paisley and allow him to run the guide service. For Mather the deciding factor was news from Smith that "official guides" were setting themselves up in business at the monument, and had been doing so since the time of its establishment. Consequently, the director was faced with an illegal situation and expressed alarm over the possible degradation of Craters of the Moon's resources by unregulated tourist flow in the absence of a NPS caretaker. Hence, Mather authorized Paisley to temporarily operate his business in order to stop these other commercial "parties" and at the same time place the Park Service's "official representative at the monument." [17]

When Paisley retired in 1927, the service ended with him. But his successor, Robert B. Moore, fared better, receiving a higher salary by his retirement in 1931. Like Paisley, who appointed him, Moore came from the Arco area and possessed an equally extensive understanding of the monument, and devoted his time and energy to its management with little compensation. [18] Despite the adversities of low wages and operating budgets, the custodians displayed a strong commitment to the monument's administration. As the sole staff, they performed a variety of functions; they greeted visitors, showed them the main geologic attractions, limited resource destruction by their very presence, created some improvements, and informed the Service about others. Although both Paisley and Moore were in their late sixties and early seventies, and lacked prior Park Service experience and training, they bought the agency time while it planned the monument's development.

The first order of business was to make the monument more accessible to the traveling public. Keeping with its primary focus on building the reputation of national parks and visitation, the Park Service in the Mather tradition at first envisioned Craters of the Moon, not as a destination in itself, but as a "strategic location...in connection with Yellowstone travel." [19] The monument's proximity to one of the nation's "crown jewels" and the anticipated boost in tourism once new highways connecting the two areas were completed occupied the minds of the early custodians and Park Service officials. [20] Any of these advancements would expose the isolated area to greater visitation. Such a prospect thus dictated the type of development that occurred. To attract tourists and promote the importance of the monument, both road construction and the conveniences offered by a concessioner were necessary in the coming years. Craters of the Moon may have been considered a wayside to Yellowstone but it was going to be a well developed attraction. Half of the monument's original budget went toward repair of roads and trails, while the other half went toward the installation of "sanitary conveniences" for men and women. [21]

Improvements evolved slowly, however, given insufficient funding and staffing, and most of the early monument development was self-initiated and self-funded. In 1925 Custodian Paisley, for instance, erected the first headquarters cabin with his own resources, as agreed to when he was hired. Through this dedication and subsequent agency funding the monument's wayside capacity was enhanced so that by 1927 Craters of the Moon boasted several pit toilets and a five-mile loop drive for travelers to see the monument's main attractions. And a rock display case provided the rudiments of an educational program. [22] While major construction for administrative facilities lay at least a decade away, the director approved the operation of a concession, Crater Inn, in 1926 and granted a five-year permit in 1927 to the

proprietors Jo G. Martin and John R. Wright, both from Arco. [23]



Visitors in the early 1920s drink from Bink Sink Waterhole, one of the monument's few water sources prior to expansion. Custodian Samuel A. Paisley is seated, bottom right. (CRMO Museum Collection)

Perhaps the most important development during the monument's early administration, in terms of its accessibility to tourists, its future management, and survival, was the establishment of a permanent water supply. In the monument's hot, semi-arid, and hostile environment water was vital. For tourists drinking from shallow pools, water softened the monument's extreme climate and enhanced the visit. Without water visitors were less likely to come to the monument or enjoy its volcanic wonders.

Because of this, Paisley implored the Service to secure a better source than Registration Waterhole at the Cinderhurst Camp, the monument's headquarters. Other waterholes existed in the monument, but none was as central or as accessible to visitors as the headquarters waterhole. And it could not sustain any significant increases in use. Visitation in 1925, for instance, climbed to around thirty-three hundred and in 1926 it exceeded forty-six hundred, at which point Paisley informed the Washington office that "the water situation is going to be one of the most serious problems to confront us. While the water at Cinderhurst Camp [sic] has held out remarkably well during the past summer, it is dangerously low now." Paisley, anticipating a veritable flood of visitors, wrote that with "the greatly increased number of tourists who are bound to come next and succeeding years I fear that the present water resources will be inadequate to supply the demands placed upon it." [24]

To remedy future water shortages, the custodian recommended that the Service file for water rights on the Little Cottonwood Creek drainage, located at that time outside the monument's boundaries some two miles north (now the northern unit), so that water from its springs could be piped to the monument. In his 1926 enlargement survey, the geologist Harold Stearns essentially agreed with Paisley. Due to the finite nature of the monument's waterholes and their susceptibility to contamination, Stearns suggested that the Park Service use but not add the drainage's water source. [25] Sensitive to the monument's need for water, the Park Service began investigating the state's statutes for water rights after receiving Paisley's first report. More importantly, the agency dispatched Yellowstone National Park Assistant Civil Engineer Bert H. Burrell to the monument to study the water supply and the present and future physical and administrative development requirements of Craters of the Moon in late

June 1927. His report provides one of the few accounts of how the agency's planning strategies took shape at the new monument over a projected five-year period, underscoring the powerful influence of water in management decisions. [26]

Burrell's general assessment of the monument was that it had been "under-rated by the Service" and deserved greater attention from the agency in the form of increased allotments. Echoing the concerns of the early managers, the engineer predicted that with local, state, and national publicity visitation would climb. Visitation statistics from the first two seasons, for example, bore out this assumption. The end product, Burrell believed, would be that Craters of the Moon's already inadequate facilities and management would be pressed beyond their limits to accommodate the growing number of visitors.

This included the overtaxing and swamping of the monument's physical system of primitive roads and trails, and the administrative situation, the latter consisting of an underpaid, undertrained custodian. Under these conditions, both resources and the visitor's experience would be compromised because it was simply "a physical impossibility," he believed, "to properly care for the natural wonders of the region and prevent vandalism." And for that matter, it was nearly impossible to ensure visitor safety in the lava vents, cracks, and caves since there were neither protective devices in place nor adequate personnel on duty to guide or assist visitors. In his recommendations, Burrell stressed that above all it was necessary to cater to the comforts of the tourist, since the monument's facilities were primitive at best, and its landscape, while beautiful, was forbidding. Burrell's four-point plan underscored the need for securing a permanent water supply, providing visitors with camping facilities, widening and grading roads and trails, as well as constructing a basic headquarters area to manage the monument from a centralized location. [27]

Equally notable in his report, Burrell recognized that an adequate water supply was an integral part of most other developments. Slightly revising Stearns's recommendations, Burrell suggested enlarging the monument farther to the north to tap Little Cottonwood Creek's source--the numerous springs near the ridgeline that form the stream's headwaters. And to set the process in motion, Burrell filed on the Little Cottonwood Creek watershed on July 7, 1927. [28]

Before the Park Service could complete any water development plans, however, the main waterhole for Craters dried up. Custodian Robert Moore reported to Horace Albright that on July 18, 1927 the water in Registration Waterhole had disappeared overnight, apparently the result of an earthquake which shook sections of the Snake River Plain earlier that month. While this theory remains unproven, serious water loss proved to be all too real, and it launched the monument into an immediate crisis. [29]

Moore conveyed the immediacy of the situation to his superiors, stating that his only recourse was to haul water from other holes. This was impractical since many holes were remote or themselves drying up; more importantly, the tourist season was in full swing with well over a thousand visitors recorded up to that point. [30] It was clear to the Park Service that the monument's future hinged on acquiring an adequate water supply, and the bureau decided to develop a water system immediately, and in so doing granted the area permanence. The Park Service's decision testified, in part, that the agency valued the reserve for more than its "sanitation conveniences." At first Albright had worried that the Service would have to permanently close the monument to campers, yet he appreciated the monument's intrinsic qualities, as well as its function as a wayside to Yellowstone, and approved the installation of a water system as quickly as possible. [31] Recommending the project to Mather, Albright confessed that he felt Craters of the Moon deserved such treatment, for it was one of "the most important monuments in the system." [32]

As the Park Service planned the construction of a water line, the immediate concern was how to operate the "dry" monument while awaiting completion of the system. Rather than close the monument, Burrell recommended the implementation of his development plan. As a result, in the summer of 1927 Custodian Moore relocated the headquarters across from Crater Inn (now operational with five log structures: central lodge, gasoline station, and three log cabins), and created a makeshift single entrance system. [33] The Service arranged to purchase water from the concessionaire, who imported it from the town of Martin several miles away. As part of the agreement, tourists received water free of charge. Burrell justified this temporary solution to the director, stating that it was not only the best recourse short of closure, but also the most politically expedient for the Park Service, contingent upon the fact that the water system was completed in a timely matter. For it was a situation that "will not be tolerated by the people of Idaho for any great length of time without serious complaint and criticism of the Park Service." [34]

The project lasted four years and involved a majority of the administrative concerns during this period. Securing water required expansion, the settlement of private claims, and the resolution of a grazing controversy. The first step occurred on July 23, 1928, when President Calvin Coolidge signed a proclamation enlarging Craters of the Moon from thirty-nine to eighty-three square miles, assigning 2,380 acres of the Little Cottonwood Creek watershed to the Park Service, guaranteeing the monument's permanent water supply. [35]

Although Burrell thought that funding would be approved for the water system's construction in 1928--and thus solving "all of our difficulties forevermore"--the project's completion waited several more years. [36] Delays emerged over two private claims, totaling 320 acres, within the northern unit because they were located along the route of the proposed water line. In 1930, the Park Service acquired a right-of-way easement to cross the grazing lands owned by the Kilpatrick Brothers Company but not those of Arthur Brothers. Furthermore, the agency had received an appropriation for construction of the pipeline by June 30, 1931. This set of circumstances led the Service to seek legislation for a land exchange, thereby avoiding any conflict of interest with the water system or degradation to monument resources. Passed on February 21, 1931, the exchange bill authorized the Park Service to eliminate the private claims by trading for public lands of equal value outside the reserve. Without this legislation the water system could not be completed, and without the system, Albright stated, the Service could not develop the monument. [37]

The water system was completed on June 17, 1931, [38] yet due to budget constraints and four years of running a dry monument, the Park Service built the system in advance of formalizing the land transfers. As occurred earlier, the agency worked well with the Kilpatricks and arrived at an agreeable exchange, but negotiations for the Arthur lands proved to be more exacting, with purchase rather than exchange being the final result. Both cases were resolved by the end of 1933. [39]

The agency's attention to the reserve during the water crisis extended to other administrative objectives for the unit as well. In line with national trends and the movement toward professional staffing, Albright and Burrell felt that the area deserved "a proper administrative force." [40] This would consist of a well paid, experienced custodian with some seasonal staff for interpretive work, all of whom would ideally have geological (scientific) backgrounds. [41] Albright worried especially about the "type" of Park Service representative at the monument. Without proper salary, training within the System, and scientific knowledge, he questioned the commitment and scruples of the custodians, such as Robert Moore. The field assistant related to the director in July 1927 that without professional incentive and training custodians like Moore were liable to sell lava specimens or not abide by agency guidelines. By the 1928 season, when the custodian worked alone and the monument was open only in the summer, Albright suggested that the Park Service consider

funding "for a full time custodian with an adequate salary." [42]

When the elderly Moore fell ill and declared he would soon retire in March 1930, Albright (now director) chose this time to pick a more desirable custodian. That person was Burton C. Lacombe, who entered duty on May 22, 1931 and helped fill the position with a more qualified individual. Lacombe was the former chief buffalo keeper at Yellowstone National Park. He had invested approximately twenty-five years of service at Yellowstone, eleven in a supervisory capacity. Although he appears to have had no training in geology, and assumed the custodianship without any trained seasonal staffing, Lacombe possessed the professional experience that Albright wanted. [43]

That this type of administrative move was important to Albright is apparent in the political tactics behind Lacombe's appointment. The buffalo keeper was the director's personal friend who was about to retire from his position at Yellowstone come August 1931. Possibly being forced to retire because he was growing too old for the rigors of herding buffalo, Lacombe could extend his employment with the Park Service for a few more years at Craters of the Moon. The director, who offered Lacombe the position after learning of Moore's poor health, wanted the custodian's vacancy kept quiet so nothing would interfere with Lacombe's transfer. Yet word soon got out and some controversy surfaced when local interest groups learned of the opening. Community leaders from Arco wanted to fill the position with a "local person" rather than a Park Service employee from outside the area. In a suspect move, the concession operator, Jo Martin, recommended his former partner and half brother, John R. Wright, for the job. Martin convinced C. A. Bottolfsen to endorse Wright, and Bottolfsen then persuaded Addison Smith to do the same. Idaho Senator John Thomas also inquired as to the legitimacy of the hiring process on behalf of Martin, yet all of this failed to change the Park Service's decision on Lacombe. The agency's position was that it would promote from within the ranks, considering its permanent employees first. [44]

While Albright might be accused of favoritism, given his friendship with Lacombe, he was acting on the recent upgrade of monument custodians to the same pay level as permanent park rangers. In this regard, though, his choice of Lacombe seemed to contradict his vision for staffing national monuments. "While these posts are perhaps somewhat isolated," he wrote, "they should offer a real opportunity for a live, energetic person who is interested in the outdoors and wants to advance in the National Park Service." Monuments were for the younger men who wanted a career in the bureau and a place to prove themselves. As he noted, "I do not want to have to put old timers on the ranger force into these kinds of positions, simply because parks want to get rid of them." [45]

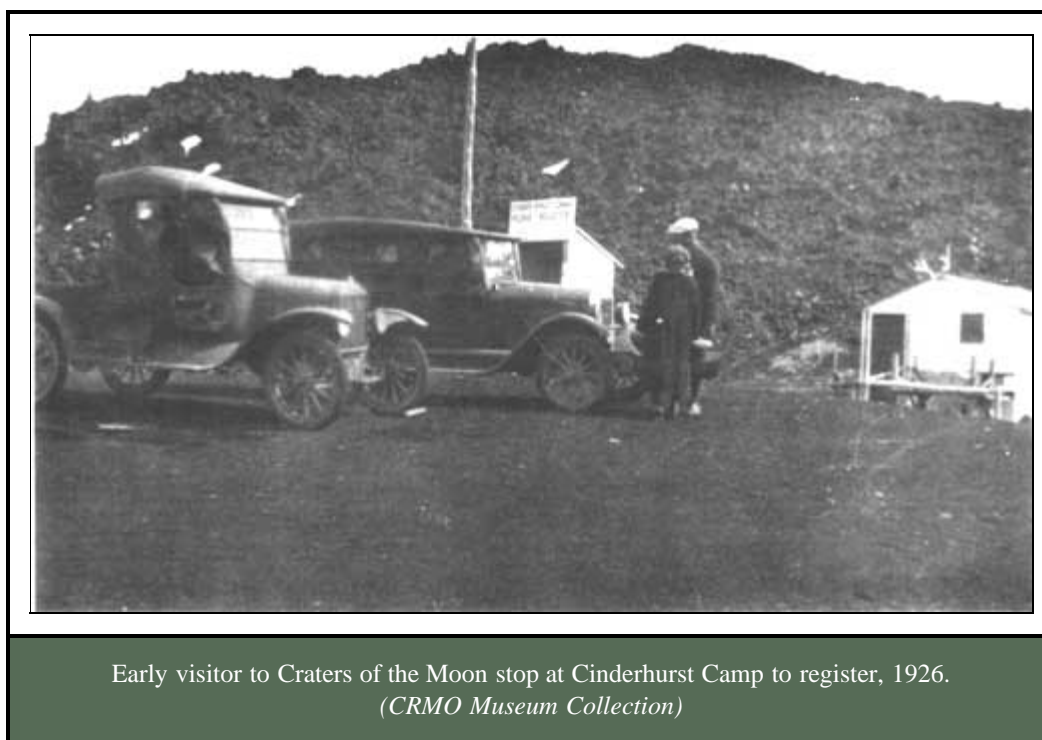
The director's immediate vision for the custodian at the monument was a Park Service representative who would set a good administrative foundation, a manager who would not only carry out the caretaking responsibilities the job entailed, but who would also act in a public relations capacity. And in this capacity, Lacombe excelled. Although promotion of the National Park Service was standard administrative fare, political considerations existed that called for Park Service experience and public contact skills. Evidently, Lacombe's isolation from direct public contact at his former job did not limit him in any way. In fact, his rather "crusty" character seems to have been an attribute in protecting the monument.

Given his personality and presence, when Craters of the Moon experienced its first administrative conflict over grazing in 1931, Lacombe deftly handled the situation, quieting the protests of sheepherders, and establishing the policy that grazing was prohibited but seasonal sheep crossing was permissible. As part of the policy's success, Lacombe garnered strong public support for the Park Service's decision, ingratiating himself with community groups, joining their ranks, and starting the long history of monument managers' civic club memberships. Albright applauded Lacombe's efforts, and the gap between volunteer and

professional, local and outsider, had been bridged. [46]

Finally, this step toward professionalism initiated an interesting management relationship with Yellowstone National Park; including Lacombe, three successive custodians transferred to the monument from Yellowstone, as did a large number of other staff over the years. In an unofficial sense, Craters was a satellite of the park benefiting from the expertise and training rangers earned while there.

During the 1920s and early 1930s, the main administrative thrusts were composed of setting up the monument's management, securing a permanent water supply, moving toward a professional administrative structure, and establishing a grazing policy to deter resource damage. These were not the only activities taking place, though; minor improvements such as road repair and comfort station facilities were either completed or under construction. Their appearance correlated with rising visitation, which had increased from over thirty-three hundred in 1925 to a pre-depression high of around seventy-six hundred. More significant, perhaps, was that this trend attested to the monument's growing sense of permanence. [47]



THE 1930S AND THE NEW DEAL

The year 1933 proved to be a watershed year for parks nationwide. Reorganization diversified the National Park Service, and New Deal emergency work relief programs infused the agency with an immense amount of personnel and funding to carry out long-planned development projects. Many of these had been planned in the 1920s, yet appropriations and workforce had limited the Service to accomplishing only the immediate requirements of the parks. The increase in allotments for administration, maintenance, and protection escalated between 1933 and 1939, significantly affecting Craters of the Moon, thus initiating the monument's next administrative phase. [48]

The New Deal work programs at Craters of the Moon served to further establish the monument's administrative infrastructure. Physical developments topped the priority list. While the water system formed the major construction project in the first decade of the monument, there remained other development projects and administrative concerns to be addressed, such as modern comfort stations, roads, trails, and seasonal employees.

Approval of the 1933 master plan initiated a number of trail, road and building construction programs. [49] They emphasized the twin goals of preservation and use. Protecting the resource ranked in importance with enhancing visitor comfort and creating better access to the monument for tourists. Without development, the Park Service lacked the basic administrative capacity to mitigate damage and lacked the basic amenities to sustain a wider audience for the monument.

The custodian during most of the emergency program construction period, Albert T. Bicknell, a thirteen-year veteran of the Yellowstone ranger corps, determined priorities for the projects. [50] Bicknell recommended, among other things, the construction of a new administrative headquarters and checking kiosk, and the improvements of visitor facilities. For Bicknell resource protection was bound to the building of roads and trails, and the implementation of a maintenance program. Over six thousand tourists visited in 1933, and without a better road and trail system, inestimable resource damage already occurring at the monument would continue due to "autos leaving the road and driving on the cinder knolls, and also by pedestrians wandering at will over lava flows." [51] Equally important in this regard was the addition of at least two seasonal rangers for monument protection, "public contact and informational purposes." [52]

Between 1933 and 1939, most of Bicknell's recommendations were carried out. Work crews hired through the Civil Works and Public Works administrations erected a flush comfort station, constructed trails, and completed extensive road building. Other road projects for possible southern expansion were considered but left until later. [53]

Other than physical construction projects, the monument also acquired improvements in its administrative capacity. The first seasonal park ranger, G. Frederick Shepherd, with expertise in volcanology, entered duty on July 22, 1935, and in 1936, two seasonal rangers filled the monument's ranks. [54] The temporary rangers assured that no longer would monument administrators be required to perform every duty in managing the area. As Bicknell noted, "it [is now] possible for the custodian to give more time to the supervision and protection of the Monument." [55] Rangers such as Shepherd had the scientific training espoused by Park Service officials some eight years earlier. Such an educational background lent itself well to promoting visitor contacts, area investigations, and the beginnings of the monument's interpretive program, one of the hallmarks of Bicknell's administration being the drafting of the monument's first museum prospectus in 1935. [56] Also contributing to the area's administration, and especially protection against trespass grazing, was the 1936 act excising the northern three quarters of Section 16 from the monument. [57]

In all, the 1930s proved to be a productive period for the monument's administration. Even so, the Service's programs stopped short of full-area administrative development, supplying only the minimum required. Left out of the 1930s New Deal projects were many of the items requested by Bicknell, leaving the monument's facilities inadequate for current use. [58] The New Deal programs, nonetheless, boosted the monument's tourist appeal and administrative capacity to a degree the Park Service could not have reached on its own. And in the future, the Park Service anticipated increases in appropriations to improve and expand the monument's facilities, and continue the "building" process of the area's physical plant. However, World War II interceded, and the monument was in a holding pattern for the next decade.

THE WAR YEARS

The war years reduced protection and improvement programs at Craters of the Moon just as appreciable advances were being made. Visitation at the monument, for instance, peaked in

1941 at around 21,800. By virtue of the 1941 presidential proclamation, ninety-four acres were ceded from the monument to the state for reconstruction of Highway 22 passing through the monument; the cession also capstoned a highway improvement movement alive in the region since the late 1930s. [59] Both high visitation and road improvements predicted a bright future of increased travel to the monument and the surrounding region. Yet with the nation's entrance into the war, visitation plummeted to nearly sixty-nine hundred and bottomed out in 1943 at around twenty-two hundred, one thousand fewer than were recorded the first year statistics were kept in 1925.

Craters of the Moon listed like a ship dead in the water, but remained open. The isolation inherent in the geographic location was no longer alleviated by tourist traffic--and with the tourists went the central ingredient to any park unit's sense of purpose. Appropriations for the early 1940s evinced the custodial nature of the monument's administration; sums less than \$100 were allocated for roads and trails, with the bulk of funding allocated for administration.

In his report of July 21, 1943, Region Four Director O. A. Tomlinson struck on a theme common and with far reaching implications to the administration of the monument. He concluded that even in spite of budget cutbacks for the war effort the monument was "fortunately" nearly self-operating. After inspecting the area's grounds from July 14 to 16, he proclaimed that "the full use, study and enjoyment of the Monument does not require large expenditures for protection, development and personnel." [60] Tomlinson's opinion was perhaps a death blow to the monument's existing threadbare appropriations. Echoing the opinion of Horace Albright in 1924, the regional director forecast the Service's approach to managing the reserve for the years to come.

Tomlinson asserted that "the administrative and protective force of the Monument should never be very large." Extensive lava flows acted as barriers to outside threats such as natural fires that might decimate the area's vegetation. This fact, coupled with the accessibility of the spectacular formations to visitors, rendered the monument's management a rather simple task. The regional director believed that the Park Service

should plan for no more personnel than one custodian, one clerk-ranger, and one maintenance man as a permanent staff. Two, and possibly three, seasonal rangers and two or three temporary laborers will be needed for maintaining the roads, trails, and other facilities, and serving the visitors during the summer season. [61]

Few available records reveal the administrative conditions during this period, and those which exist paint a grim picture. On October 16, 1944, Field Auditor Clarence E. Persons indicated that the monument was in an utter state of disrepair. The area's physical appearance was a shambles. The monument's grounds and buildings wanted for cleaning. Likewise, the office--the main contact point for visitors--was in a deplorable condition. Everything was in a state of disarray; opened and unopened mail littered desks; files filled the floor space. [62] In a similar inspection in 1946, Regional Landscape Architect Sanford Hill offered an analysis frequently applied to the monument's first decades of administration, underscored by the war years. "Craters of the Moon is more or less an isolated area and it has the appearance of being neglected by the Service. Improvements for this area should be scheduled at an early date." At risk here were both the public's impression of Park Service operations and the "proper presentation of the natural features of the area." [63]

Regional Director Tomlinson responded to these charges by suggesting that the conditions were not entirely the custodian's fault. [64] Guy E. McCarty, a Yellowstone ranger for approximately twelve years prior to his arrival, had the longest tenure of any manager (1937-1949). He weathered the war and postwar years managing the area virtually alone, being the

only permanent employee. [65] As Tomlinson admitted, the monument suffered from cutbacks, as had other areas, and from a lack of contact with the Region Four staff in San Francisco. Remoteness characterized the monument and its management.

The regional director, accepting some responsibility for the monument's shortcomings, attempted to provide the area better assistance and strengthen its administration. Following the end of the war, the regional office moved to make the monument the year-round duty station for the custodian and supply him with additional staff. Up until this point, custodians had operated the monument seasonally, opening in the spring, generally May, and closing with the onset of winter in December. For a variety of reasons the Park Service allowed this mode of operation. Winter cold and drifting snows deterred visitation, blocking the monument highway and loop road. In addition, the concessionaire closed in the winter ending tourist accommodations until the spring (yet the operators wanted the Park Service to guard their property). Custodians themselves faced problems of winter access, had few visitors to contact, saw little resource threats, and were isolated in extreme conditions in unsuitable housing.

Director Albright stated the Service's position on this matter in November 1930. He told Custodian Moore that until the Service provided him with year-round quarters, he could relocate the monument's headquarters "within a reasonable distance from the Monument" as long as he made "occasional trips to patrol the area and protect it from vandalism," being under no obligation to guard the concessionaire's property. [66] Even after Custodian Lacombe's new residence was built in 1931, it was still considered "seasonal," and most custodians relocated to Arco, while others wintered in California or worked in other parks. [67]

Custodian McCarty continued the practice during his tenure. Although a year round-tour of duty was established in 1937, the monument still lacked the proper housing and modern utilities to be open all year, so the custodian received permission to move the monument's headquarters to Arco throughout the winter months. However, pressure to upgrade the administration changed this policy.

For several years the regional office had sought solutions to caring for the monument while McCarty took leave or changed headquarter locations. In the meantime, it was learned that the custodian evidently did "absolutely nothing" during his winter in Arco, and that contrary to past practices the state highway department was keeping the monument highway open through the winter, and would have plowed into the monument if McCarty had asked. Thus by March 1948, the regional director instructed the custodian to employ a caretaker in his absence (the only added staffing provision at this time) and, more importantly, urged him to remain at the monument the entire year. Tomlinson believed this change was warranted because with the highway open to travel all year, "we can no longer justify leaving the monument unattended even though few people enter it during the winter months." [68] Part of this shift toward improving standards, if in name only, was the title change from custodian to superintendent in 1948. [69]

In spite of these efforts, two General Accounting Office reports in the fall of 1949 revealed that the San Francisco office had failed to sufficiently raise the monument's administrative standards, especially in the subjects of fiscal matters and paperwork. At one point, Park Service Assistant Director Hillory Tolson, citing these deficiencies and the Region Four office's distance from Craters of the Moon, recommended that some or all of the monument's administrative tasks be transferred to Region Two, headquartered in Omaha, Nebraska. In this way, Yellowstone or Grand Teton National Park could assist in managing the monument. Tomlinson denied allegations that his office was incapable of supervising the monument, pointing out that Omaha was twice as far from the monument as San Francisco; his staff

adequately supervised Alaska and Hawaii park units, all farther from regional headquarters than Craters of the Moon. Shortly thereafter Tomlinson, acting on Tolson's suggestion of having larger parks aid smaller park units, instructed Mount Rainier National Park to advise the monument in many of its fiscal and administrative procedures. By October 1952, according to Regional Director Lawrence C. Merriam, Mount Rainier was considered the monument's purchasing office, and was able to assist the area in other accounting-related matters better than the regional office. [70]

Even though officials retained the monument within Region Four, promises for more staff and better facilities went unfulfilled until the early 1950s. Meanwhile, planning played a significant role. Carried over from the New Deal prospectus, the construction of a new headquarters complex closer to the highway topped master plan proposals. At the time, the monument's buildings consisted of structures dating to the 1920s and early 1930s along with an assortment of temporary buildings converted from old tent frames, which served as an office, quarters, and garage. Though plans shuffled between the regional office and the monument, with both sides in agreement, funding cutbacks prevented any new construction. [71]

When the war ended, travel restrictions were lifted and conditions at the monument were changed. Visitation in 1946 climbed back into the five-figure range, almost duplicating its 1938 mark of about 19,300, and by 1949, it had breached thirty-six hundred. Despite Tomlinson's conviction that the monument was self-running, capable of doing so on a minimal scale, the surge in tourism reflected a different situation. Like most areas within the National Park System, Craters of the Moon found itself unprepared to cope with the growing number of visitors. The monument's infrastructure had remained essentially the same since 1924. By mid-century, Craters of the Moon had reached a critical turning point.

THE SUPERINTENDENTS AND THE POSTWAR ERA

During its first twenty-five years, Craters of the Moon depended on custodians, often shackled by meager appropriations and staffing, to carry out its management. As the progression of their administrations suggests, there was a decided trend from volunteerism to professionalism, from dedicated citizens engaged in "labors of love" to trained Park Service managers establishing policies. As with any generalization there were qualifications. The most prevalent was that the monument seemed to receive managers who were either beginning or ending their careers, causing inconsistencies in its administration--a pattern which, to some degree, repeated itself throughout monument history. Moreover, although changing the title from custodian to superintendent might have been the Park Service's way of gaining more respect for monument managers (who were not janitors), it arrived at a time when Craters of the Moon was poised for change. The superintendents, many of whom were better staffed and funded than their predecessors, inaugurated a new chapter in the monument's administration.

Aubrey F. Houston became the first full-time superintendent of Craters of the Moon in October 1949, when he transferred from Death Valley National Monument where he had been a park ranger. Shortly after his arrival, he issued a report evaluating the monument's facilities and made recommendations for what he called improvements for future "imminent needs." It proved to be one of the most insightful documents to date, calling out the new era the monument was about to embark on. Analyzing the historical trends of the area's administration up to the present, Houston noted that Craters of the Moon had existed as "a sort of backwater." The volcanic features drew mostly local attention, and in any case, the small visitation numbers in the past required little "in the way of physical development and personnel." That picture, he proclaimed, "has changed, practically overnight." [72]

Both the state and the nation had recently realized that "the area has much to offer from the economic, recreational, and now, the scientific, standpoints. The recreational values, especially, have been overlooked." The confluence of three factors contributed to this sudden change: highway development, tourism, and the Atomic Energy Commission. Monument access was linked to two important travel routes. The highway traversing the monument was part of the newly improved coast-to-coast, "scenic" Highway 20 with connections to and from Yellowstone National Park, and the same roadway also formed a main segment of the Yellowstone-Sun Valley Highway leading into central Idaho. [73]

In the postwar boom of affluence and travel for middle-class Americans, these improvements denoted increased tourism for the monument, strategically located along U.S. 20. For its part, the state of Idaho and local civic groups planned a substantial advertising campaign. Craters of the Moon, being the only Park Service site in the state (except for a remote strip of Yellowstone National Park), would own its share of publicity.

In the immediate vicinity, the Atomic Energy Commission (AEC) selected a site in the desert seven miles east of Arco for a research facility in March 1949. The construction, growth in population, and economy associated with the development and operation of the facility initiated its own rise in publicity and visitation to Craters. Each of the projected seventy-five hundred to ten thousand employees at the AEC site alone must be considered potential visitors, Houston contended.

The superintendent warned that "it has been so long since anything has been done in the way of physical improvement, that we find ourselves in the position of needing everything all at once because of the situation which has developed in such a short time." At the very least, Houston needed adequate facilities and personnel, renewing the requests of past officials. Recognizing that budget limitations operated against his proposals, Houston suggested that additional revenues might be accrued through a remodeled concession service near the monument entrance, operation of a downhill skiing business at the monument, and extension of entrance fees collection. [74]

Regional Director Tomlinson responded warmly to Houston's report, but not his economic schemes, and agreed with the superintendent that the best way to fulfill the Service's mission would be to furnish the administrative facilities, larger staff, and interpretive services necessary for increased travel. But all development should still proceed on a small scale: leave the overnight comforts to gateway towns like Arco, and provide for the day-time needs of tourists within the monument. [75] The master plans drafted during the early 1950s expressed some of Houston's input and the Service's new development concept for the monument, with its upgraded physical plant, and administrative and visitor facilities located nearer to the highway. In reality, though, stop-gap measures in the form of rehabilitation projects predominated.

Two positive matters aided in management, though. The creation of the first permanent ranger position finally occurred, and was filled on June 22, 1952 by Robert C. Zink. [76] And the Park Service gained ownership of eight hundred acres of school lands within the monument through condemnation procedures that same year. [77]





Opening Day, ca. 1950, reveals the monument's layout and popularity. From left to right, Crater Inn, superintendent's cabin, and comfort station. Fire circle, stage, and horses, ready for celebration, are visible as well. (*CRMO Museum Collection*)

MISSION 66

"Mission 66 has broken over our heads almost with a vengeance," commented Ranger Robert Zink in 1956, and "we are among the first areas to receive its blessings." [78]

Since the time Superintendent Houston had made his predictions in early 1950, the monument's visitation had more than doubled, from fifty thousand to one hundred thousand in 1956. Yet Craters of the Moon's administrative capacity remained largely unchanged. More than ever, visitor services and resource protection fell short of need for lack of proper facilities and personnel.

The monument's poor conditions mirrored those systemwide, and so did the solution to its problems. Through the capital development program known as Mission 66, the Park Service upgraded existing park unit facilities and constructed new ones over a period of ten years. The program gained popular support and congressional appropriations soared. Mission 66's effect on the monument cannot be overemphasized. It was the fulcrum point from which its mission moved forward and to fulfillment. It was a new era for a previously neglected area. Mission 66 provided the monument with better roads and facilities, and new utilities and staffing with which to operate and build upon.

Two superintendents, Everett W. Bright and Floyd A. Henderson, guided the monument through Mission 66's principal phases, 1956-1961. Because Mission 66 looked to the future for all aspects of park management, especially how the parks could be developed to accommodate the expected 80 million visitors systemwide by the mid-1960s, planning and development occupied both Bright's and Henderson's tenures. The 1956 Mission 66 prospectus and Mission 66 master plan were drafted during their respective superintendencies and delineated the monument's management and development direction. The common factor was the anticipated half a million visitors within the decade. Besides preparing for this inundation and protecting the monument's resources, the plans specifically sought to fulfill Craters of the Moon's scientific and educational mission, further defined as "to provide opportunity for the understanding and appreciation of this unusual and outstanding volcanic landscape, the natural forces that created it, and the biological and other natural forces that

continue to modify it." [79]

Past management conditions and climbing visitation had combined to hinder the monument's purpose; many visitors spent a short period of time (about one hour) and left unaware of the area's significance because the Park Service had failed to provide good information on volcanism and the natural environment. Thus interpretation formed a chief component in achieving this management philosophy, with the hope of expanding the visitors' stay and knowledge. Through interpretation, the visitor could achieve a greater appreciation for the monument's resources, and increase their protection in the process. All told, Mission 66 overhauled the area's administrative infrastructure in order to correct its shortcomings.

The design theme emphasized the monument's day-use visitation pattern and concentrated all work in the already developed northern area. Afterwards the physical plant consisted of a new visitor center, offices, staff housing, maintenance buildings, and utilities, water and sewage systems, as well as an improved road and trail system, and an enlarged campground. As part of its "new look," the program also removed the old administration buildings, the only remnants of the early headquarters site being the warehouse and log comfort station. Building removal also included the concessionaire's Crater Inn and associated cabins. Choosing to accommodate the transient visitor and considering the concession's history of near-failure, the Park Service eliminated concession services from the monument. [80]

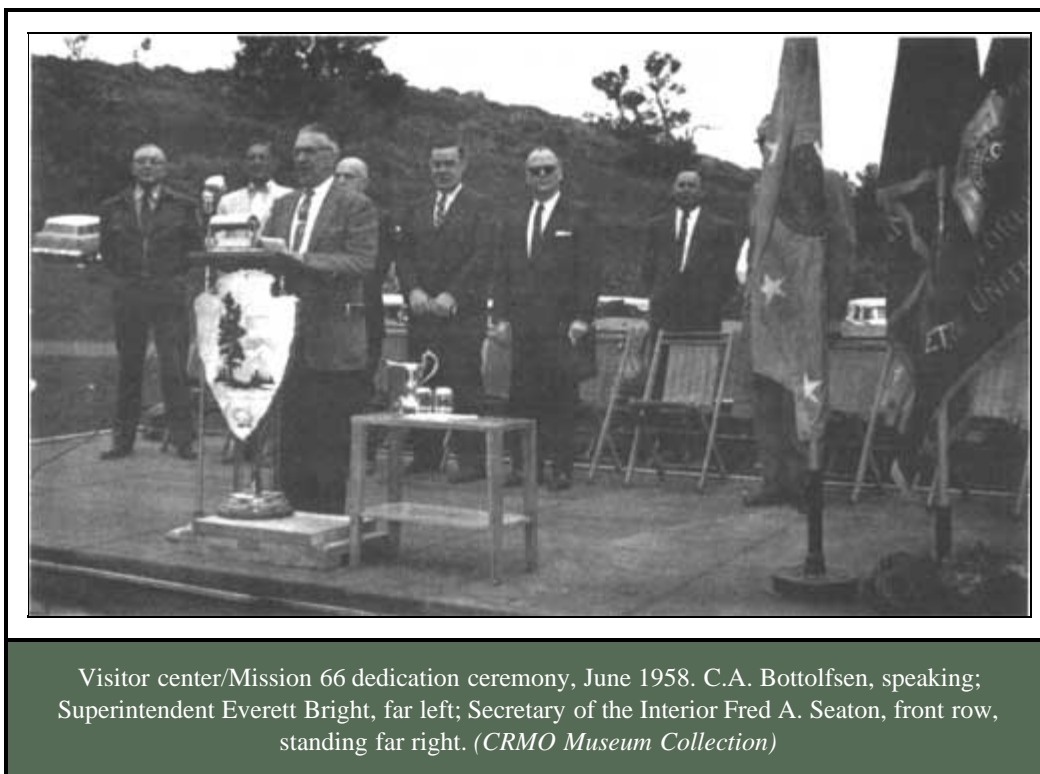
The program also expanded the monument's organizational structure. An increase in permanent employees, for instance, joined the new physical developments and administrative office space, and constituted one of the greatest changes in monument management. An administrative assistant, park naturalist, and maintenance worker were added to the former permanent staff of supervisory ranger and superintendent. Seasonal help numbered eight by 1960. The additional permanent personnel initiated management operations under the protection division and the newly formed interpretation division.

By the early 1960s, monument officials believed that the Mission 66 developments had created a solid foundation for Craters of the Moon to succeed in its mission. Both new facilities and additional personnel contributed to this assessment. The dual mandate of protecting the monument's resources and of assisting the visitor in becoming aware of "the area, its story, and its value" was secure. Fostering an appreciation of the area's resources in both scientific and lay public alike was occurring through the virtually self-guiding interpretive tour, with orientation at the visitor center and museum, and a drive around the loop road with its educational and scenic opportunities. While no overnight lodging was available in the monument, the improved campground offered visitors an opportunity to either picnic or spend the night in a volcanic environment. [81]

Continuing management goals aimed at interpreting the area's volcanic and biologic resources, and further increasing interpretive services and protection through encouraged outside research and employee training; other management objectives focused on seeking cooperation with other state and federal agencies, and assessing visitor patterns should the day-use standard change and a concessionaire be needed. Where developments were concerned, however, management goals adhered to a "confinement" concept. To ensure the preservation of present values and the wise use of the resources it was necessary to keep any additional facilities within the already developed site. [82]

The Mission 66 program at Craters of the Moon literally brought the monument into a "modern" stage of administration. The first three decades of management had been more passive than active, caused by insufficient appropriations, facilities, and staffing. By the early 1960s, however, the monument's administration had shifted to a more active position. Superintendents, with more personnel and an improved physical plant, directed their attention

to mitigating resource damage and enhancing the visitor experience.



Visitor center/Mission 66 dedication ceremony, June 1958. C.A. Bottolfsen, speaking; Superintendent Everett Bright, far left; Secretary of the Interior Fred A. Seaton, front row, standing far right. (*CRMO Museum Collection*)

POST-MISSION 66

Resource management, its development and implementation, predominated the post-Mission 66 era. The monument's resource management program integrated natural and cultural resources management, interpretation, and scientific research. Superintendents throughout the next several decades contributed to each of these areas in various ways, depending on their interest, expertise, and the monument's specific requirements. And many left their mark in other areas of management such as planning and publicity.

Central to most management issues superintendents faced was a deficient knowledge of the monument's resources. Research consequently formed a high priority for many managers in order to better protect and present the area's resources. Beginning in the early 1960s, superintendents and their staffs sought out state universities to conduct research projects at the monument in order to obtain this much-needed baseline documentation. [83]

Reflecting the monument's scientific goals and emphasis on research and resource protection was the addition of the Carey Kipuka on November 19, 1962. [84] The presidential proclamation added approximately fifty-three hundred acres to the southwest section of the monument, of which the kipuka comprised 180 acres of mostly undisturbed, native grasslands. The addition movement was spearheaded during Superintendent Floyd Henderson's administration in 1958, reflecting Henderson's background in managing volcanic park areas in Hawaii. The intent was both to preserve the kipuka as a representative feature of a volcanic environment and to offer it as a place for comparative scientific study in plant and soils research. For interpretation, this new, accurate information could be passed on to visitors. [85]

This period also witnessed a trend in the monument's management with a series of short but highly influential superintendencies. Of the three superintendents involved, their tenures lasted two years or less; this type of activity created a revolving-door image of the office during a very dynamic era in the Park Service. Those destined to better things, it seems,

trained at Craters of the Moon, for all three went on to positions at larger parks or the Washington office. Merle E. Stitt, the first of these superintendents, remained at Craters less than a year, and his administration is characterized more by what happened while he was there than by what he did. A number of resource management issues were defined during his superintendency, among them geologic resource destruction and the Mistletoe Control Project, which commenced with tree removal in 1962.

Controversy erupted over eradicating mistletoe in this manner when Daniel E. Davis assumed the superintendency in 1963. Davis objected to the project because it ignored ecological principles. Tangling with the regional office, he was influential in the program's termination, setting a precedent for abiding by sound scientific study in resource management at the monument.^[86] Davis, too, addressed issues related to the destruction of geologic features, and was also instrumental in expanding interpretation and developing the monument's first interpretive prospectus, written in 1964. ^[87] That year as well, Davis spent the majority of his time participating in the interagency study of Idaho's Sawtooth Mountains; this kind of duty exemplified the important role the monument superintendent played in a state with only one National Park Service site at the time.

In the fall of 1964 Roger J. Contor entered a two-year superintendency in which he completed several important management documents. Responding to an agency mandate to update all master plans after the passage of the 1964 Wilderness Act and before any wilderness studies could take place, Contor revised the Mission 66 master plan. Perhaps the plan's most distinctive quality was its anticipation of increased travel and congestion. In order to relieve future overcrowding and enable motorists to see a complete sampling of the monument's volcanic features, Contor's plan proposed extending the loop drive around Big Cinder Butte, and establishing a new and larger campsite and related visitor facilities in the Little Cottonwood meadow in the northern unit. Contor, trying to predict future needs, was faced with ending all expansion once the monument's backcountry was established as wilderness. To offset this, he noted that the Little Cottonwood drainage might also provide space for expansion of the monument's administrative headquarters. ^[88]

Afterwards, the monument's wilderness proposal was begun and submitted in 1965, as was the first wildlife and range management plan. The drafting of this latter plan reflected Contor's training in wildlife biology and the perception that a more concerted effort was needed toward managing the popular mule deer herd and other wildlife within the monument. Another important "first" was the resource management plan. Drafted in 1966, it was also the first resource management plan completed in Western Region, and significant because it set down in one document the monument's resource management philosophy--that all activity must consider the deceptively fragile lava formations and associated features. ^[89]

In September 1966, with the arrival of Superintendent Paul Fritz, the monument's administration acquired a new character, one that reached beyond its boundaries to the rest of the state. Fritz, trained in landscape architecture, performed a dual role during his superintendency. He was both superintendent and keyman for Idaho's Sawtooth National Park study. And in the latter part of his eight year assignment, he worked as the Service's state coordinator. To compensate him for his additional assignments, the superintendent's salary was increased from a GS-11 to a GS-12 and later to a GS-13 level, and dropped to its original level when he departed.

Once again a monument superintendent represented the Park Service in duties outside of managing Craters of the Moon. In Fritz's case this meant frequent trips to meetings far from his own park, participating, for example, in the planning of Redwood National Park and the Alaska parks. At the state level, he spread the word about national parks, bringing greater attention not only to the monument but also to the Park Service in general throughout Idaho.

Yet his actions often stirred up controversy within his own agency. He was somewhat of a gadfly, an admitted environmentalist whose activities seemed to pose a conflict of interest. He was known to belong to interest groups opposing the Park Service and to openly oppose or seemingly defy some of his superiors. His frequent absence from the monument also posed management problems. In the 1970s, an administrative officer was appointed to essentially carry out the superintendent's duties during extended absences, relieving other staff members of the chore. More to the point, Fritz was accused of neglecting the monument by those same superiors and his successors. [90]

His attention to resource management and administrative issues both supports and counters some of this criticism. On the one hand, while Fritz's administration saw the first mule deer study take place in 1966 and the final private inholding purchased in 1967, these were programs initiated by other superintendents. On the other hand, the establishment of the monument's wilderness area on October 23, 1970, setting aside some forty-three hundred acres, bore Fritz's stamp, for it included Big Cinder Butte which had been previously excluded. Fritz's background as a landscape architect and his concern for the environment influenced his objections to the Park Service's wilderness proposal for the monument. The ensuing internal conflict was worth engaging in, Fritz believed. In the end, it preserved valuable examples of volcanic phenomena which otherwise would have been exposed to possible destruction had the planned road, proposed in the 1966 master plan, been allowed. Circumventing traditional channels he managed to have his own proposal accepted by Congress. To the monument's credit, it was the first park unit in the Pacific Northwest Region to have a designated wilderness, sharing the honor systemwide with Petrified Forest National Park in Arizona. [91]

In the early 1970s, Fritz expressed to the fullest his planning and public relations abilities when he laid the groundwork for the monument's expansion and park redesignation. To this end, a master plan study was undertaken by the Denver Service Center in 1973. The study also was to reassess the monument's visitor-use pattern and experience, interpretive programs and land needs, and the influence of increased recreation on its resources. The influences of this study are evident in the redesignation and expansion movement of the late 1980s. [92]

Fritz left the monument in 1974 to work full time as the Park Service's state coordinator in Boise. And although his superintendency gained the monument more wilderness lands and raised its publicity level, he left Craters of the Moon "drying on the vine," according to Robert J. "Cy" Hentges. Superintendent Hentges, Fritz's successor, characterized his management emphasis as "operation clean sweep." In Hentges' estimation improvements were needed in all phases of management, especially resource management, because of Fritz's intermittent presence. Beginning with his arrival in 1974, Hentges took particular interest in the grazing and hunting issues in the Little Cottonwood Creek watershed, achieving with time noticeable mitigation in both areas. [93]

Advances such as these were directly related to changes in monument personnel, in the positions of chief ranger and interpreter, in the late 1970s. With two qualified and motivated individuals heading resource protection and interpretation, programs which had previously lacked guidance, results soon followed. In 1979 Hentges' administration produced the second interpretive prospectus, fifteen years after the appearance of the first document. In 1982, after a similar span of time since the first plan, a second resource management plan appeared. These documents signified renewed interest, advances, and more organized management in both natural and cultural resources, the fruits of which were born out in protection and additional research. A second mule deer study, a monument history, and baseline inventories were among those projects undertaken. Hentges also engaged in the first rehabilitation project of the Crystal Fissure Spatter Cones, the centerpiece of the monument's volcanic features. Adjustments to the monument's organizational structure, in some respects, were responsible

for advances in management. Hentges separated resource protection and interpretation into two divisions. By lowering inflated grades in administration and maintenance divisions, the superintendent was able to use the remaining money, pooled with cyclic funding, for maintenance projects for the physical plant. Remodeling the headquarters and maintenance buildings, especially during the energy crisis, and repairing roads marked some of the highlights. [94]

Hentges' emphasis on shoring up deficiencies in management and his intense approach to management issues brought results, but sometimes his tactics and style were questioned. The last years of his decade-long superintendency were marred by a suspension related to charges of misuse of a government vehicle (1982), and strained relations with members of his staff and at least one neighboring rancher. These conditions, save the suspension, had no doubt arisen before at the monument, and they are of importance here, not because they isolate one person's shortcomings, but because they reflect a small area's confining and isolating effects. The monument's staff works on an intimate level and in an integrated fashion, which can be both empowering and debilitating. [95]

After Hentges transferred to Mount Rainier National Park in 1984, Superintendent Robert E. Scott assumed the superintendency and worked to pull the monument's staff back together and focus on the monument's mission. Scott's administration continued the collection of baseline data to better plan and manage both the monument's natural and cultural resources. He also continued rehabilitation of monument housing and other structures. For Scott, external threats were some of the most important issues to address. And air quality management--the threat to the monument's Class I airshed from pollution--formed one of his major thrusts. During his tenure as well, encroachment on the monument's boundaries for recreation and mining ventures continued to present problems, as did the chronic internal concerns of volcanic resource damage. The superintendent helped to draft legislation in 1987 for realigning the northern boundary along the hydrographic divide, an issue as old as the monument, and rooted in the protracted struggles to protect the watershed, and halt trespass grazing and illegal hunting. [96] That legislation has lain dormant until another, much broader, issue is decided--the 1990 proposals for monument expansion and redesignation. [97]

Scott, faced with these proposals, was able to successfully lobby for preparation of a general management plan. Drafted in 1991, the plan documents another stage in the monument's administration, calling for another redevelopment program similar to Mission 66. In a sense, this study brings the administration full circle. Once again, the monument's staff has outgrown its facilities. Personnel is up from five to eleven permanent employees on average--augmented recently with the addition of a resource management division--and with approximately fourteen seasonals on staff, subject to fluctuating budgets and qualified applicants. Not only has the administrative capacity grown and changed, but so has the visitor, who comes in larger numbers (over 200,000 a year). Most likely behind the wheel of recreational vehicle, he will come in higher numbers, it is thought, due to anticipated recreational developments in the region. Although noticeable in the 1970s, the visitation season has expanded into the shoulder months of the season, early spring and late fall. All of this stresses existing facilities, causes traffic congestion, and interferes with Park Service operations. [98]

Future plans project that the Mission 66 design will have to be revised by separating visitor services from administrative offices and staff housing through construction of a new visitor center and entrance. In this way the monument staff, having outgrown its facilities, will be able to expand into the present museum and live with greater privacy. Visitors as well, it is hoped, will be able to experience a less congested monument, with better facilities, roads, and interpretive sites.

In summary, throughout the phases of the monument's management no debilitating controversies have undermined or seriously threatened Craters of the Moon's administration. Because the monument is located in a remote and harsh environment, no forces opposed its creation and no opposing force has surfaced since. While relatively free of controversy, the monument still faced a number of challenges. In terms of administration and resource management, delays have formed some of the greatest obstacles--delays in developing adequate administrative facilities and acquiring adequate staff. Isolation has been a consistent theme as well, especially attracting the attention of regional personnel and qualified staffing. All of this contributed to the image of the monument as "self-operating." Because it finally provided the foundation of adequate staff and facilities, the Mission 66 program served as the watershed in the area's evolution. Significant advances in resource management date from that era and are testimony to the initiative of monument managers as much as they are to any one program or outside assistance.

[<<< Previous](#)

[<<< Contents >>>](#)

[Next >>>](#)

adhi/chap5.htm
Last Updated: 27-Sep-1999

CRATERS OF THE MOON

Administrative History



Chapter 6: RESOURCE MANAGEMENT

OVERVIEW OF NPS TRENDS IN RESOURCE MANAGEMENT

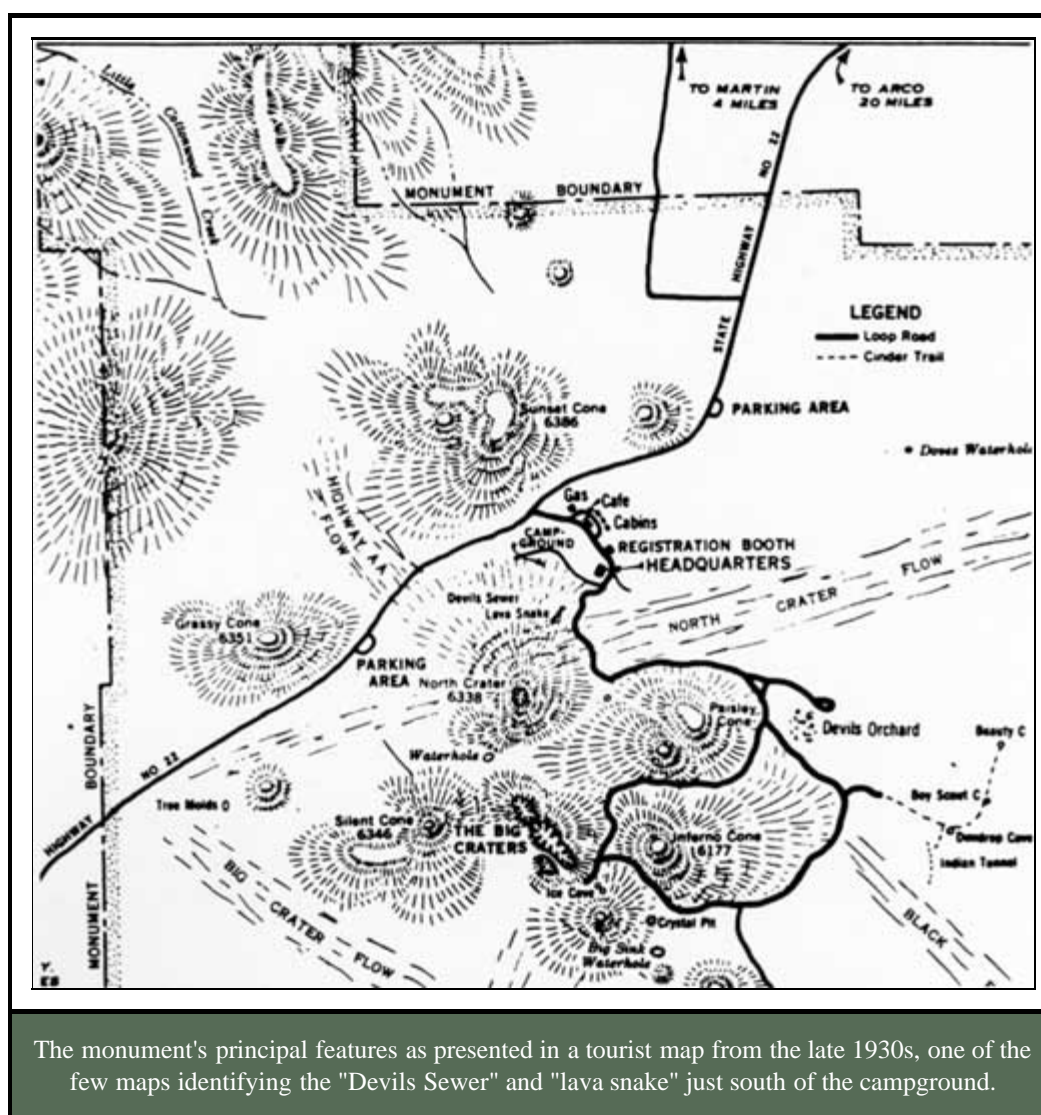
Resource management in the National Park Service has followed several distinct trends. For the agency's first several decades, Directors Stephen T. Mather and Horace M. Albright promoted the park system for its scenic beauty. The thrusts of their policies were protection-oriented and reflected efforts to accommodate the public and develop a political constituency. During this period, manipulation of wildlife constituted the most common management policy. Although recommendations by Park Service wildlife biologist George M. Wright in the early 1930s began to alter the agency's practice of predator control, ecological management was still viewed as conflicting with development needs. The development of sound scientific resource management policies lay dormant following Wright's death in 1936 and the nation's entrance into World War II. During the postwar years, the boom in Park System visitation and the Mission 66 program, begun in the mid-1950s, brought the poor conditions of the parks into sharp focus. Predating the environmental policies of the National Environmental Policy Act, Mission 66 emphasized new facilities with little consideration for their effects on the environment. To some observers, the program appeared to benefit only the visitor through the expansion of roads and the construction of new facilities, and ignore resource management issues and scientific research. [1] To others, it reflected great strides in resource management, particularly where, for example, some visitor accommodations were phased out of environmentally sensitive areas, and the areas allowed to return to their natural states. [2]

In the 1960s, resource management policies began to exhibit a shift from the Mission 66 emphasis on visitor accommodations to environmental protection. Credited with having the greatest effect on park management was the 1963 publication by a team of scientists titled Wildlife Management in the National Parks. Commonly referred to as the Leopold Report, the study stressed that the agency should consider the composite whole of park ecosystems and their processes in management decisions, with a primary qualification being the preservation of original conditions. A highlight of the environmental movement was the 1964 passage of the Wilderness Act, bringing to a close ten years of lobbying by conservation groups, and initiating studies and designations for wilderness within the National Park System.

The environmental movement was further strengthened in the 1960s and 1970s by the support of the general public, which was becoming increasingly aware of and sensitive to environmental issues, including human impacts and the importance of ecosystems. As one historian of the movement has observed, the "major national parks came to be valued both as important parts of the global ecosystem and as unique, distinct areas where nature-altering human activities must not be allowed to take place." [3] In other words, environmental awareness was assuming a global perspective. Parks were not only scenic wonders but also environmental barometers, capable of interpreting the state of our environment through scientific research. The 1978 Redwood Act reaffirmed the NPS responsibility for

preservation and committed it to this new understanding.

Trends in the 1980s continued to reflect this emphasis on natural processes, with a greater emphasis on a holistic management approach. Other emphases concentrated on ongoing resource threats, especially from external pressures, such as residential developments, and commercial and industrial ventures. The 1980 "State of the Parks" report recommended new policies for baseline resource inventories and monitoring in order to understand and mitigate resource deterioration. Today, Park Service resource management thrusts continue to focus on scientific research and emphasize the preservation of park processes, looking beyond the park's artificial political boundaries to the greater ecosystem that determines whether the park will be preserved. [4]



RESOURCE MANAGEMENT AT CRATERS OF THE MOON

At Craters of the Moon, resource management serves as a catchall phrase for management in general, for the protection of resources entails identifying threats and solutions. Generally speaking, resource management at the monument mirrors the phases of resource management that the park system experienced overall. Early resource management was that in name only, becoming more refined as the monument's administration evolved. Like most park units, the monument was virtually shut down during World War II, with resource management abiding by a "hold-the-fort" philosophy. The "formal" or organized era of resource management at

Craters of the Moon commenced at mid-century with the Mission 66 program. Armed with a new physical plant and sufficient staffing in a time of escalating visitation and resource impacts, monument superintendents began producing resource management plans for the first time. In doing so, they developed the monument's resource management program.

MANAGEMENT PHILOSOPHY

Central to any program was a resource management philosophy; the monument's stems from its enabling legislation, the National Park Service's 1916 Organic Act, as well as other relevant federal laws and NPS policies and regulations. As outlined in President Calvin Coolidge's 1924 proclamation establishing the area, monument administrators have endeavored to manage the area's resources for their unusual scientific and educational values and general interest. The one statement that articulates best the monument's current management philosophy dates to the 1966 resource management plan, but is restated in similar form in the most recent plan:

It is important to recognize the deceptively fragile characteristics of the volcanic structures and their associated natural features found within the monument. Careful management of human use of the area is necessary to prevent permanent and irreversible damage to the resources and to ensure that the natural state of the monument will be perpetuated for future generations. [5]

The area's management philosophy was also influenced by its classification as a natural monument from 1964 to 1977. In this respect, Craters of the Moon has been managed to protect its primary feature, the basaltic volcanism of the Great Rift. Other natural resources recognized by management are the biological phenomena of the contorted landscape. By comparison, cultural resources play a minor role in the monument's resource management program. Yet the experiences of early and contemporary humans within and near the monument expands our understanding of the volcanic zone. Indians, explorers, and pioneers in the region during the 19th and early 20th centuries offer administrators physical, written and visual documentation of the area's resources. Interpretive programs present both natural and cultural aspects of the monument, and help protect the monument by educating the public in the two disciplines. A comprehensive research program concentrating upon the scientific and cultural resources of the monument has linked these diverse areas of resource management. Whether in natural or cultural history, these types of investigations allow managers to gain a broader context for the monument's resources, and achieve an understanding of changes to the area over time. Providing visitors with appropriate recreational experiences, while not adversely impacting the monument's resources, forms another management objective. Attention to all of these matters goes toward fulfilling the area's mission.

Overall, management of the monument's resources addresses issues relevant to early administrations, specifically in the categories of geology, wildlife, and vegetation. Collection, vandalism, and other forms of human erosion persistently impact the area's volcanic features. Similarly, illegal hunting of mule deer has been the most common threat to the monument's wildlife, as has been trespass grazing to the area's vegetation. This trend reflects a strong historical continuity in management. It also reflects the fact that past management was aware of only the most obvious threats. Advances in resource management demonstrate a growing awareness of more subtle threats, which, like changes in air quality, are difficult to detect, yet the impact of which could be profound.

MANAGEMENT ZONES

Resource management at Craters of the Moon falls into two general management zones,

natural and developed. Most telling of the monument's zoning is that of the area's entire 53,545 acres 43,243 are designated wilderness. That leaves 10,302 acres to comprise the core of the monument's administration and use; the landscape includes the most dramatic features along the Great Rift, encompasses the foothills and flanks of the Pioneer Mountains to the northwest as well as park development, visitor services and facilities, and the major interpretive motor route through the monument. [6]

Since most of the monument lies within a designated wilderness, the majority of visitor activity and resource damage takes place in the frontcountry. The harsh and remote environment of the wilderness area attracts few visitors. The northern unit, considered a backcountry, but open to day hiking and biking, sees a small amount of activity--its use regulated to protect the monument's water supply and deer herd during hunting season. Moreover, the frontcountry is the region where the monument's outstanding natural features are located, easily reached by the scenic loop drive and its adjoining pullouts and trails, thus concentrating resource impairments. However, this neither minimizes the potential for nor exempts other sites from internal or external threats.

PROGRAM DEVELOPMENT

The formation of a resource management program can be seen, for the most part, in resource management planning and through the monument's various phases of administration, providing further context for specific issues discussed later.

THE EARLY YEARS AND THE SELF-MANAGING MONUMENT

Formal planning for a resource management program did not occur until Mission 66, yet the theme that the monument was self-sustaining pervades the development of the monument's resource management program. Horace Albright established this precedent in the fall of 1924. After visiting the lava region, he asserted that it was worthy of Park Service protection; however, he assumed that the reserve's remoteness and impenetrable landscape secured its resources from threats such as vandalism. Albright worried more about the quality of employee guarding the monument than he did about visitors stealing rocks. [7] Thus most management activity during this period centered primarily on the development of the physical plant. And while some improvements would help manage the resources, they were done with an eye toward visitor use.

The emergency work programs during the 1930s reflected resource management issues, even though they, too, were weighted on the side of developing tourist accommodations. Custodian Albert T. Bicknell, for instance, determined that the construction of better roads, trails, and visitor facilities would contribute to the alleviation or diminishment of resource management threats.

Because of the war, by the late 1940s planning efforts that addressed resource management in any form were static. Better public access and low visitation collectively caused little in the way of irreversible damage to resources, it was believed. Like Albright some twenty years before him, Region Four Director O. A. Tomlinson summed up the situation in 1943 by remarking that the very nature of the monument's primary resource protected it from significant impacts. The formidable barrier of lava prevented serious external threats from fire and humans. Since visitors circulated through the monument by way of the unpaved road system, little stress was inflicted on the resources. From Tomlinson's perspective, these factors, as with the monument's administration in general, caused the area's resource management program to continue its nearly self-operating manner. [8]

MISSION 66

With the 1950s came not only new physical development but also a definitive resource management program at Craters of the Moon. Contributing to this trend were improved national highway access to the monument, a postwar surge in tourism, and establishment of the Atomic Energy Commission's facility east of Arco. The subsequent exponential rise in visitation exposed the area's resources to increased impacts. Along with an emerging environmental ethic in American society and the Park Service's efforts to accommodate rising visitation, these catalysts led to concerted resource management planning efforts at the monument.

Mission 66 provided the necessary facilities and staffing for a resource management program. As part of the program, the monument outlined its resource management philosophy. Superintendent Everett Bright in his 1956 prospectus, for example, stated that management should protect the primary volcanic resource, and should also recognize the biological elements contained in the lava landscape as worthy of preservation and management because animals and plants were valuable for their adaptation to the harsh environment. Although a day-use principle would be employed to manage the resources, the installation of an interpretive program was essential so that formal education of the public could commence and be effective in the battle for resource protection.

Building upon the prospectus, the Mission 66 master plan, drafted in 1960 by Superintendent Floyd Henderson, followed up on the biological emphasis, calling out the importance of adding the Carey Kipuka because the site complemented the monument's scientific and educational mission. The plan also expanded the scope of resource management to include cultural resources, both prehistory and history, for what human activity revealed of the lava region. But natural resources received primary attention over the next several decades.

The watershed year in resource management proved to be 1966. As part of the Park Service's systemwide initiative, the monument prepared its first resource management plan, which was also the first of its kind in the Park Service's Western Region. Written by Superintendent Roger Contor and staff, the Resource Management Plan for Craters of the Moon National Monument formalized resource management at the monument. It addressed the resource itself instead of development, and thus represented a new direction in management. For the first time, one document defined the monument's resource management philosophy and guidelines, inventoried existing resources, attempted to gauge their original conditions, and analyzed appropriate management of those resources. [9]

In general, the principal objective of the monument was to preserve the remarkable and weird volcanic phenomena of scientific value and general interest, as first witnessed by European explorers and pioneers in the early 19th century, in addition to conserving the formations for the enjoyment of future visitors. As a result, Contor's plan mandated the control of human use and development so as not to degrade the original conditions, or, in other words, the "vignette of primitive America." All people, the document asserted, should have the opportunity to witness this landscape of suspended violence, for all its starkness and surprising forms of life.

Conceptually, these resource management principles expressed the main tenets of the 1963 Leopold Report. In this sense, management framed policies necessary to preserve and possibly restore the ecological scene as first viewed by Europeans. In keeping with the monument's designation as a natural area, the document concerned itself primarily with natural resources, and secondarily with cultural resources for what the latter illuminated about the "original" landscape of the previous century. The plan recorded four basic areas of resource management: geologic, wildlife (plant and animal), resource use (recreation and

development), and research.

Overall, these resources were analyzed for change over time through historical and scientific methods. And it was determined that, save the extirpation of grizzly bears, wolves and bison, and the presence of the water system in the Little Cottonwood Creek drainage, no significant disturbance of original conditions existed, and thus there was no foreseeable reason why the scene from the early 1800s could not be perpetuated. Therefore, protection of existing rock, wildlife, plant, water, and human-related resources rather than environmental manipulation constituted resource management's major focus. Guidelines stressed that fragile geologic features were to be considered a "non renewable" resource and managed as such. Biological resources were to be considered "renewable," highlighting the fact that fire and wildlife restoration, for instance, could occur if they fit the original scene. Finally, comprehensive research was to form the backbone of the embryonic program.

POST-MISSION 66

In the 1980s two resource management plans (1982, 1987) succeeded the original plan. The reason for the hiatus between 1966 and 1982 stems from both monument and NPS activities during the period. Immediately following the publication of the 1966 plan, Superintendent Paul Fritz replaced Roger Contor. Fritz, busy with duties as--superintendent, state coordinator, and keyman for Idaho's Sawtooth Mountains study--lacked the time and energy, as well as staff to update the resource management plans. Replacing Fritz in 1974, Superintendent Robert Hentges determined that the monument was in need of a new direction in its resource management practices, yet his 1976 statement for management reveals little though in the way of any new issues, trends, or changes in resource management, except for its mention of external threats, such as the potential mining operations near the monument.

In fairness to both Fritz and Hentges, the 1966 plan served its purpose well, even though its emphasis on original conditions became outmoded as resource management moved toward "true ecology." Moreover, not until the early 1980s did NPS policy begin stressing the importance of updated resource management plans, the preservation of park processes, and comprehensive research. Research enabled managers to better understand the park ecosystem and address possible solutions to issues of resource deterioration while still allowing for visitor use. By far the most significant resource management thrust at Craters of the Moon has been placing resource knowledge as the cornerstone of resource management.

The project employed to meet basic research needs was the Baseline Resources Inventory (BRI), initiated in 1983. The goal of the BRI was to identify and document the monument's resources, both natural and cultural, and their existing conditions. The baseline study attempted to account for all the components comprising the monument's ecosystem in order to fulfill three objectives: to provide a standard of resource conditions; to enable managers to detect change to these resources through monitoring; and to provide information to both qualify and support management actions and plans.

In the late 1980s, Gerry Wright, of the University of Idaho's cooperative park studies unit, developed a comprehensive assessment of the monument's baseline information. The 1988 Review of of Scientific Literature at Craters of the Moon National Monument was a significant first not only for Craters but also for the Park Service. This was the first time a comprehensive look had been made at our state of scientific knowledge of a park area and an attempt to determine where the voids in knowledge existed. Craters of the Moon served as a pilot area for this project as well as the Natural Resources Data System. This marked a shift in the NPS approach to resource management in the form of baseline data collection and data management rather than the more typical crisis management. During this period the monument developed a Geographic Information System at the CPSU at the University of

Idaho; it also developed baseline transects during this period as well, including those for vegetation and breeding birds; it also developed exclosures in its northern end on Bureau of Land Management land to monitor vegetation changes as the result of fire.

Although the BRI sought to be comprehensive, its benefits were not instantaneous, nor could it eliminate traditional problems. In the case of geologic features impacts grew, with management continuing to seek an uneasy balance between preservation and use. Other geologic management issues arose with the need for cave management planning and seismic monitoring. Developing a comprehensive fire management plan demanded attention, too, especially in the wake of the Yellowstone fires of the 1988. External threats mounted and were recognized as one of the most pressing issues. Pollution of the monument's Class I airshed, for instance, could lead to deterioration of an array of resources, leading to both vegetation studies and visibility monitoring.

FUTURE TRENDS

As documented in the 1992 resource management plan, by the early 1990s the monument possessed an adequate baseline inventory of its major resources, and building a monitoring program to measure resource change posed the greatest challenge for the future. [10] Furthermore, other work still needs to be done to complete the data base in the areas of cave management, air and water resources, specific plant species studies; deer winter range use and distribution, invertebrates, amphibians, and reptiles. With changing Park Service attitudes about cultural resources in natural areas and the growing compliance with federal preservation laws and NPS regulations, cultural resource management has received greater attention, yet still requires more research.

Untold numbers of external threats present another area of high concern. Potential pressures outside the monument that need to be addressed are renewed interests in mining and mineral exploration adjacent to the monument, the development of commercial recreational facilities near the boundaries, the encroachment of exotic vegetation within the northern unit, and noise intrusion from airplane overflight activity. Still dominating all external threats, however, is the degradation to the monument's Class I airshed from both particulate and gaseous pollutants. While visibility monitoring has been conducted since the late 1980s, gaseous pollutant monitoring is still needed, as is an air quality management plan.

To address resource management issues brought on by rising visitation, interpretive programs are incorporating resource management topics. On the other hand, the new general management plan suggests relieving present and future congestion through developments--new visitor facilities and reconstructed roads and trails. In addition, should the proposed expansion of the monument occur, new issues and concerns for resource management would come to the forefront.

Ultimately, resolving old problems retains a prominent place in the future of resource management. This is significant from a historical perspective because the same issues affecting past managers will, in all likelihood, influence future managers. Among these are: revising the northern boundary to end trespass grazing and illegal hunting, completing the long-awaited cultural resource inventory, maintaining an adequate water supply with increased use, and, as always, dealing with the inherent impacts to volcanic features.

One bright spot in the future of resource management promises to be the newly created resource management division in 1992. Formerly resource management was included with visitor protection, but the emphasis on personnel trained in resource management has grown. The first permanent resource management specialist position was created in 1989; it was followed by the new division, which consists of a chief, a permanent position, and a

biological technician, a permanent, subject to funding position.

NATURAL RESOURCE MANAGEMENT: ISSUES AND HIGHLIGHTS

Natural resource management at Craters of the Moon National Monument constitutes the majority of management concerns. Historically, protection of the geologic resources has been the primary management focus because the volcanic formations were the basis for the area's creation and are its central theme. Protection of wildlife, vegetation, water, and air quality have formed a secondary but nonetheless important management emphasis. In all cases, custodians and superintendents have pursued policies of mitigation, education, and enforcement to strike the balance between preservation and use of the monument's varied natural resources.

GEOLOGIC RESOURCES

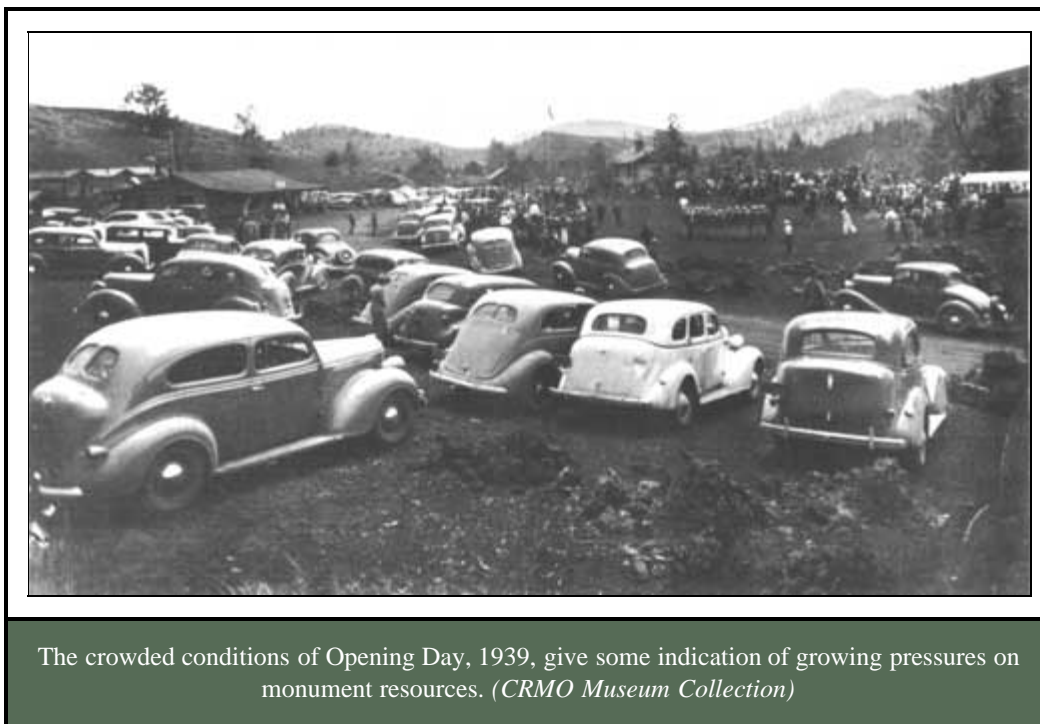
Attracting the majority of visitor activity and visitor related impacts, the lava formations are plagued with the chronic problems of illegal collection, vandalism, and other forms of human erosion. Unlike biological resources, the volcanic features are frozen in time. Where grass or trees can regenerate, only a new eruption can replenish the lavas. Until then, they will breakdown. While a natural process, erosion is accelerated by visitor contact. Federal laws and National Park Service regulations prohibit unauthorized collection and vandalism, yet both exist. [11]

To the untrained eye, the lavas seem indestructible, when in fact the opposite is true; they are deceptively fragile--realized all too starkly by the disappearance of known formations and the degradation of others. Thus efforts to protect the sensitive terrain have required vigilance from monument managers. Balancing preservation and use has led to changes ranging from modifications in the types of acceptable visitor behavior and activity to rehabilitation of popular features. Similar to other aspects of Craters of the Moon's management, the long term effects of depletion and damage from visitor use were not readily apparent nor rigorously managed until mid-century when visitation accelerated and the monument's administration grew in response to increasing pressures. Although the majority of damage occurs within the monument's developed interior, among the outstanding natural features, resource problems are not isolated to these sites alone. Finding a way to protect the geologic resources has meant combating the perception that the already broken, twisted, and contorted landscape is not susceptible to alteration, when it is even by the most incidental human contact.

Impacts to the lava terrain, many of them through benign actions, predated the establishment of the monument. At the turn of the century, scientific groups entered the lava flows of Craters of the Moon and by the early 1920s unrestrained sightseers roamed the formations by foot, horse, or auto. As promotion of the area accelerated, so did visitation and souvenir hunting. Lava bombs, tree molds, squeeze tubes, and loose fragments of aa and pahoehoe lava were among the volcanic specimens attractive to scientists for research and to individuals for souvenirs. Commercial interests, to a degree, also threatened the reserve's "great scientific and scenic wonders." Before the monument was established, at least one entrepreneur had "had sold several hundred dollars' worth of curiously formed lava bombs" taken from "the slopes of the volcanoes." [12]

Even after the Park Service placed Custodian Samuel Paisley in charge in 1925, it was evident that fascination with volcanic rocks would persist. In January, the Arco Advertiser reported what was then and is now a common reason for impacts to geologic features: "There is the general desire on the part of visitors to take home specimens of the different kinds of

lava to show friends." Similarly, universities were conducting scientific outings at an increasing rate. [13] Perhaps the most famous rock collector was Park Service Director Horace Albright himself. Demonstrating the attractive qualities of the monument's lava rocks, Albright "tried to carry an armful of `lava bombs' for half a mile or so" during his 1924 inspection, "in order to make them available for photographing." Sensing his mistake, however, he concluded: "I finally got them to the car, but resolved that I would never again gather specimens at Craters of the Moon National Monument." [14]



Taking Action

Protective measures at this early stage were employed out of necessity and were mostly informal. Impacts like collection do not appear as issues in early Park Service reports. With low-level tourist use, custodians were better able to monitor visitor activity, or at least contact visitors as they entered the area. Moreover, Custodian Paisley's creation of an outdoor display of lava samples in 1926 may have alleviated some rock removal, allowing visitors to touch but not take volcanic specimens. [15] Even so, impacts to geologic resources present at the monument's inception evolved into an ongoing issue that area managers eventually needed to address.

The Posse Dash

A variety of visitor activities jeopardized volcanic features. During the monument's formative years, for instance, damage to geologic formations occurred through a seemingly innocent activity--the annual Opening Day celebration conducted at the monument every spring since the area's creation. The fanfare included picnics, speeches, music, and the famed Sheriff's Posse Dash, all of which was sponsored by the Butte County Chamber of Commerce. The event attracted several thousand spectators. Overflow parking covered both sides of the entrance road and filled the campground. Over all, the festivities formed an important public relations activity and constituted considerable work for the small monument staff preparing for and controlling the crowds.

As a public relations activity the event was a success, but in terms of resource management, the celebration proved destructive. Beginning in the late 1940s and early 1950s,

Superintendent Aubrey Houston reported that Opening Day vandalism and collection were on the increase. Houston's experience in May 1952 is as amusing as it is enlightening:

Sometime during the late evening rush of visitors leaving the monument on Opening Day, the 25th, one of our less law-abiding [sic] citizens made off with our prize specimen of breadcrumb bomb, which makes me [sic] very unhappy and jars my faith in human nature to its very foundation. I even dreamed that I awoke one morning and found that the whole collection had been carted away. [16]

By 1963 change was in order, and Superintendent Daniel Davis toned down the celebration. It was not only labor intensive for his staff but also damaging to monument's resources. The Sheriff's Posse Dash, an opening ceremony where flag-bearing riders raced horses through the monument's sensitive cinders, "tore the place up," Davis recalled. Vegetation as well as cinders and hardened lava suffered. For these reasons, he eliminated the posse dash altogether. Davis realized that this was a delicate issue. The local groups used the area as a personal playground (as they had for years), and he was an outsider expounding new ecological perspectives on resource management. His decision did not win him new friends within the Arco community and alienated him from some of its members. Given the decades of serious impacts to the geologic resource, Davis felt justified in his decision. Even though he formally eliminated the Posse Dash, Arco community members have broached the subject with more recent superintendents. Robert Hentges, approached regarding the horseback event in the mid-1970s, decided against reinstating the festivity, for the same reasons as Davis. At present, the Sheriff's Posse Dash remains a part of the monument's colorful past. [17]



Lining up for the Posse Dash, a popular yet destructive event at Opening Day, 1961. (CRMO Museum Collection)

Buried Treasure

Another colorful element stems from a rather humorous anecdote with potentially serious consequences. Local legend, as recorded in the 1937 Idaho: A Guide in Word and Picture, has it that outlaws headquartered in the cinder and spatter cones of Craters of the Moon, and there hid their gold. [18] It was only a matter of time before a request came in to excavate the monument's "hidden treasure."

In November 1949, several individuals from Boise, Idaho, aware of the legend, asked permission to dig for the secret cache supposedly in or near the formation known as the "Old Man of the Craters" on the southern slope of Paisley Cone. Believing they had located the site through suspect means, Superintendent Aubrey Houston denied their request until he gained confirmation from his superiors. For the Park Service, the situation caused a policy dilemma. At first, the Service "reluctantly recommended" that an excavation permit might be granted, because this was consistent with agency policy and there appeared to be no valid reasons to deny the request. However, the proposed excavation was to occur in an area of monument's highest "value and use" and would leave an irreparable landscape scar. Stating that the excavation was inconsistent with the monument's purpose and the Park Service's mission, Western Region Director Lawrence C. Merriam denied the treasure hunting permit in April 1951. Nevertheless, the story resurfaces periodically, exciting more interest and eliciting more agency denials. [19]

"Hot Rods" and Cinder Cones: Off-Road Driving

A more destructive form of human erosion originated in the monument's early years as well. Driving across the cinders and fragile geologic features at the monument occurred prior to and after the monument's establishment. Both explorers and sightseers left the primitive road system and ventured unrestrained (as did pedestrians) across the delicate cinders creating troughs and tracking footprints in the process. Compaction of the sand-like cinders left an indelible image for years, altering the color of the surface in places and leading to the growth of vegetation in the depressions. In addition to these "cosmetic" scars, early auto travelers frequently sunk into the cinders, spinning deep ruts and breaking limbs off of limber pines for traction. [20] Brittle, hard-surfaced lava formations also suffered permanent damage. This situation was perhaps inherent to Craters of the Moon because of its enticing rolling terrain and informal road system. At first developments played an important role in mitigating this destructive activity. Custodian Albert T. Bicknell--with the help of the emergency conservation work programs in the early 1930s--tried to resolve the issue through the erection of rock barriers along the monument roads and the establishment of more formal trails to prevent cars and their drivers from wandering off onto cinder slopes.

However promising these developments appeared, they were not enough of a deterrent some thirty years later. Even after Mission 66 modernized the monument's loop drive and adjacent roads, rising visitation increased number of incidents, suggesting that the problem was here to stay. Confronted with a rash of off road-driving by local youths from Arco in March 1961, Superintendent Henderson increased protection by initiating night patrols. He exhorted that such actions were contemptible, should be actively opposed, and viewed as "an act of vandalism." [21]

Two years later, Superintendent Daniel Davis acted on this directive and recorded what is probably the first enforcement against off-road driving at the monument, writing that the Butte County Sheriff returned four California youths to Craters of the Moon for driving across cinder cone slopes with their "hot rods." Davis punished the youths by making them rake out their tracks, a policy incorporated into the first resource management plan. [22] Active enforcement and public contact, as practiced by Davis, helped to alleviate but not cure the problem. In a small measure, the problem persists; the wide trail up Inferno Cone, for instance, occasionally attracts four wheel drive vehicles. [23]

Cinder Hauling and Vandalism

Off-road driving was indicative of rising damage overall to geologic features in the 1950s with expanded protection forming the management response. For example, in October of 1952, Superintendent Houston discovered that cinder hauling was taking place since the

cinders were attractive for landscaping, an occurrence likely attributable to the region's construction boom. After discovering the activity, Houston increased patrols, two to three times a day, and resolved the problem. [24]

Outright vandalism during this period, however, underscored the obstacles a small staff encountered protecting the resources. In August 1953, Ranger Robert Zink discovered that some hikers had ventured four miles south of the Tree Molds parking area to Trench Mortar Flat where they "attempted to dig up one of the lava trees," vertical tree molds believed to be the only type in existence. Zink lamented that a lack of personnel to patrol the closed area (now wilderness) or funds for protective fencing found the administration unable "to control the activities of such visitors." [25]

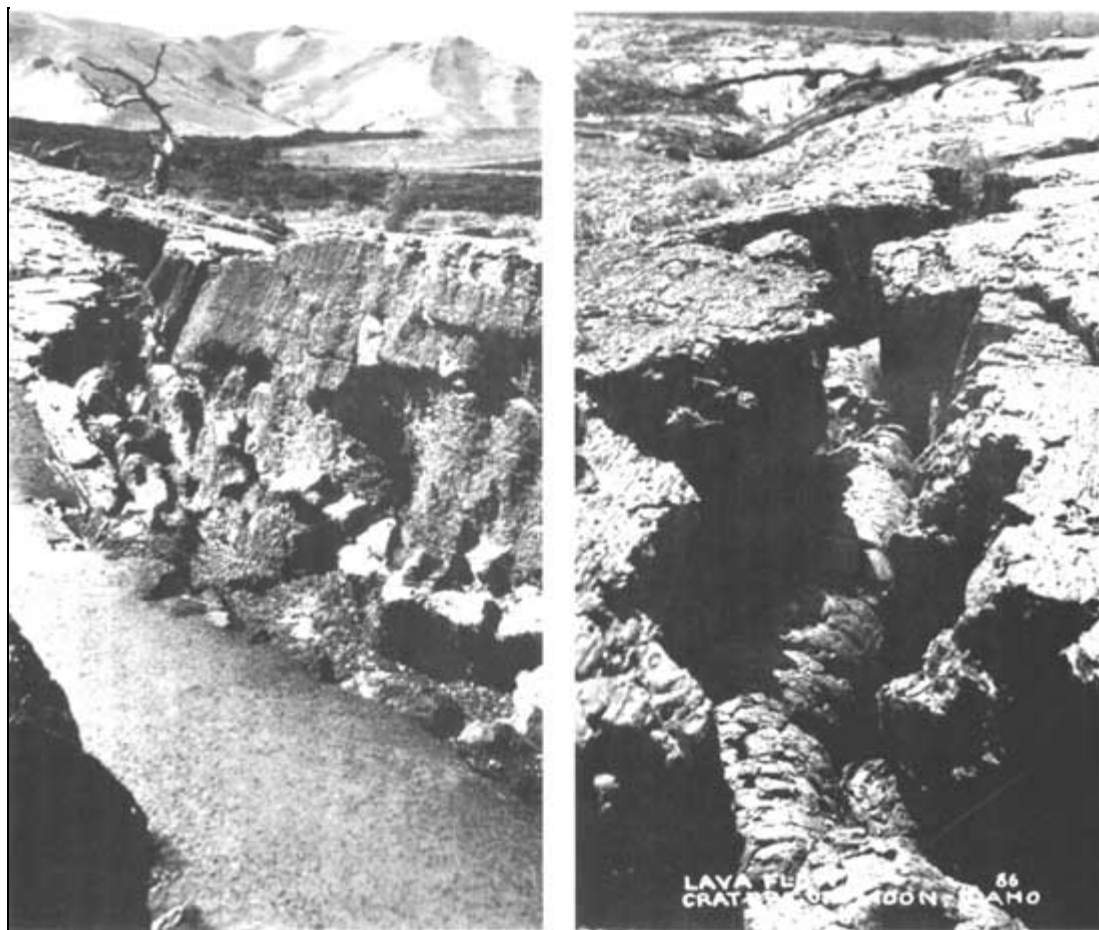
Reflecting the expanded administrative capacity set in motion by Mission 66, Superintendent Henderson took steps to offset vandalism in other areas of the monument, initiating the construction and installation of the gate at Arco Tunnel in May 1961. The gate also provided for visitor safety. And in August, the superintendent increased ranger patrols "in an effort to discourage the removal of rock samples and vandalism to some of the more heavily visited features." [26] As part of this protection and public information program, two months later Henderson erected five signs warning "visitors that specimen collection is prohibited." [27]

Devil's Sewer: The Lost Feature

Increased patrols, warnings, and signs, however, failed to completely prevent the destruction of volcanic features. The impacts represented a process that transpired over a long period of time, and by 1962 their effects appeared in the Devil's Sewer formation situated in the North Crater Flow. [28] The lava section contained a variety of interesting features including aa and pahoehoe lava flows, a pressure ridge, squeeze-outs, monoliths, common plant life of the pahoehoe habitat, and the famous 1,350-year-old Triple Twist Tree. The central element of the area was a long lava tube known commonly as the "Lava Snake." Accessible from the first turnout along the loop drive and by a 300-yard trail, the site received a great deal of use. In the late 1940s and early 1950s Superintendent Aubrey Houston called attention to its impairment intensified by the Opening Day celebration, whereby "Vandalism is a constant threat to some of the most interesting features. As an example, the Lava Snake has been so badly damaged by souvenir hunters or destructive vandals as to be unrecognizable." [29]

Almost forty years of this activity and off-trail hiking across the brittle rock eroded the feature until it had virtually disappeared. In September 1962, Superintendent Merle Stitt pronounced its destruction: "once a 35-foot squeezed-out tube of geological importance, [it] has been completely destroyed by thoughtless visitors. Approximately 2-1/2 feet of this formation remained at the beginning of the 1962 travel season." [30] Afterwards the area was still interpreted but the feature's diminishment redirected interpretive efforts to other features within the North Crater Lava Flow. [31]





The photo at right reveals an intact portion of the "lava snake", ca. 1940s or 1950s; the photo at left feature's destruction, ca. 1962. Note the proximity of the trail to the feature. (*Left photo, CRMO Museum Collection; right photo, courtesy Glenn Hinsdale*)

SETTING DOWN GUIDELINES: THE 1966 RESOURCE MANAGEMENT PLAN

Impacts to the geologic resources eventually found their way into monument resource management policy. The destruction of the Devil's Sewer lava tube exemplified the deceptive fragility of lava formations and the long-term effects of unauthorized collection and uncontrolled human use. Other features were equally susceptible to loss. The 1966 resource management plan documented the gravity of the situation and set down guidelines to mitigate destruction of the monument's "non-renewable" volcanic resources.

Speaking of collection, Superintendent Roger Contor stated in the report that "Craters of the Moon has passed the point of diminishing returns regarding collection of geologic specimens." From now on, monument policy would consider the collection of cinders and lava samples within the monument no longer necessary or appropriate because plenty of similar examples could be found outside the area's boundaries. Volcanic phenomena such as tree molds and lava bombs were believed to be unique to the monument; considering their past collection and depletion, "those remaining are now invaluable." [32]

Therefore, given the sparsity of volcanic phenomena in the monument's core, Contor noted that only bone fide scientific collection should be allowed throughout the monument as a general rule, and that the administration should carefully screen each request. A college or

university's interest in building a "representative collection" of the monument's geology "is no longer adequate justification." Groups of geologists and students from across the country visited the monument annually in search of lava bombs, for example, an activity referred to in "local universities as a 'bomb raid on the Craters.'" [33] This was no longer an acceptable activity.

Mitigation of collection would best occur through the adherence of strict guidelines for specimen removal for scientific research, the expansion of a public awareness campaign to reduce specimen collection and collateral vandalism, the continuance of roving patrols with additional rangers making visitor contacts, as well as the establishment of state laws that would prosecute rock collectors and vandals in Idaho judicial courts. [34] In the case of the latter, Contor announced that in March 1966:

The Butte County Commissioners passed an ordinance...(No. 198) prohibiting any act that "disfigures, defaces, destroys or removes any object or thing of archaeological, historical or geological interest or value on private land or within any public park in Butte County." This ordinance will enable Monument personnel to utilize the Butte County Justice of the Peace for the above violations. [35]

Damage to the monument's volcanic features caused by regular visitor activity received equal attention in the plan. The Devil's Sewer was but one example of unrestrained visitor exploration. Deterioration was often subtle, detected not necessarily from the ground but rather from the air. As Superintendent Contor observed, from "an airplane one can easily spot areas of human use by the red-brown coloring of the broken surface, as contrasted with the oxidized grey of the undisturbed surroundings. Even casual walks into the roadless areas create minor but cumulative damage." [36]

Contor believed that vandalism or social trails created by visitors bored with a certain trail or site could be avoided by the construction of loop trail systems. He thought of Devil's Orchard Trail as a good example, and mandated in the plan that where possible present and future trails should follow this precedent--specifically, North Crater Flow interpretive trail, Indian Tunnel trail, and if feasible, the route between Beauty and Surprise Caves. [37]

Visitor protection also played a role in resource protection. Echoing earlier concerns over destruction to fragile features and increased use, Contor recommended that the installation of "protective walks, ladders, enclosures or barriers in the tree mold and Spatter Cone area" along with other sites should be built commensurate with "public use demands." As for visitation, control of people was key to the success of the resource management program. [38]

Rising visitation exposed design flaws and resource threats. The campground, for instance, was too small for current use and thus projected increases in visitation, and more importantly, it was located in a sensitive area, the North Crater Flow. Therefore, Contor proposed closing the campground and possibly relocating it in the Little Cottonwood Creek basin to further protect geologic formations. [39] Similarly, anticipated growth in visitation required an expanded circulation network to avoid congestion and resource impairment. Contor thus offered the expansion of the loop drive around Big Cinder Butte as a possible solution. [40]

Although neither proposal was implemented, [41] protection of the volcanic resources showed significant improvements with the drafting of the 1966 plan. It established policy guidelines adhered to over the next several decades that to this day remain largely unchanged. Managers, however, would always be faced with a "winless" situation. As Superintendent Robert Hentges noted in 1980, for instance, the "removal of volcanic

phenomena still plagues the park and probably always will, regardless of the information we attempt to provide the park visitor concerning this problem." [42] Today, collection continues to be a problem along with other forms of human erosion. All are managed through aggressive interpretation and enforcement, including "on-site interpretive programs, articles and regulations in handout material, signing, personal contacts and law enforcement actions." These methods, while not stopping injury to lava features, have struck, in most cases, a workable balance. [43]

SITE-SPECIFIC DISCUSSION: FRONTCOUNTRY GEOLOGICAL FEATURES

While general policies to protect the lava terrain were in place by the mid-1960s, the most dynamic resource management efforts have taken place within the past twenty years, focusing primarily on the frontcountry sites. These areas--the North Crater Flow, the Devil's Orchard, Inferno Cone, Big Craters and Spatter Cones, Tree Molds, and the Caves Area--are located along the loop drive. Together, they characterize the monument's intrinsic value, uniqueness, and inherently "weird and scenic" qualities mentioned in the enabling legislation. In a larger sense, this collection of outstanding features exemplifies all the major features found within the reserve, as well as the problems associated with their management. Because the various sites are close together, connected by the seven-mile road system, visitors can experience the essence of Craters of the Moon up close and in a short period of time (2-3 hours). Yet this attribute also contributes to site deterioration since the frontcountry receives the most concentrated visitation, an average of 200,000 annual visitors, the majority of whom visit during the summer months. [44] Consequently, monument administrators, faced with increased impacts, have implemented programs to better protect and rehabilitate the frontcountry lava features while still allowing for visitor use, making the region a continuing resource management concern.

North Crater Flow

The North Crater Flow presents fine examples of ropey pahoehoe and aa lava flows, along with the remnants of crater walls transported by the same flows. The closest site to visitor facilities, the area received heavy use as the disappearance of the Devil's Sewer lava tube in the early 1960s attests. Although the short nature trail at the North Crater Flow introduces visitors to the monument, the interpreted area lies adjacent to the campground located in the same flow, but separated by a low ridge. Over time, social trails have radiated from the campground as visitors explore the lavas or short-cut over the hill to reach the site rather than walking the loop drive. Considering the North Crater Flow as sensitive terrain, Superintendent Contor suggested removing overnight camping facilities from the area altogether in the mid-1960s. Subsequent management plans failed to see the necessity, deeming the relocation of the campground to the northern unit as administratively unfeasible. Furthermore, by 1980 the value of the north end as a high desert ecosystem was recognized precluding any development.

By 1991, the geologic resources of the ridge separating the campground and North Crater Flow parking area had sustained serious impairment, and managers were compelled to seek corrective action. Unable to move the campground, they instead concentrated on the poor circulation design. Campers were more inclined to traverse the ridge since the alternative was the loop drive, which makes for neither safe nor pleasant walk. For these reasons, Superintendent Robert Scott undertook a trail construction and rehabilitation project in the summer of 1991, establishing "a designated trail from the campground to the North Crater Flow area." By obliterating informal trails, developing a regular trail maintenance and rehabilitation schedule for social trails, and continuing enforcement of regulations to prohibit

off trail use in the North Crater Flow, he believed, will result in "long-term rehabilitation/protection of a sensitive and heavily used area." [45]

Devil's Orchard

Here rafts of lava fragments stand like islands in a sea of cinders, possibly marking the vent of an ancient cinder cone. Lava bombs lie scattered about the cinder slopes, and springtime flora displays are glorious in the cinder gardens when dwarf monkey-flowers mat the ground with a magenta cast. One of the oldest sites visited in the monument, Devil's Orchard attracts a large number of visitors who tour the "weird" features along the short interpretive trail.

Built in 1963, the third of a mile, self-guided interpretive loop trail was part of the monument's developing interpretive program, the first area to concentrate on the lava landscape's natural history. Although superintendents such as Roger Contor favored the loop trail design for its protective qualities (circulating visitors in order to hold their interest and keep them on the trail), the design was not effective enough. Social trails braid the area; vandalism is frequent, and rock collectors have scoured the vicinity of its lava bombs. Because of its role in interpretation, Superintendent Scott approved a pilot program in the summer of 1991 to interpret both the site's and the monument's natural resource management problems at Devil's Orchard, thus involving visitors and making them more aware of resource impacts. The experiment was considered successful and on the "cutting edge" of interpreting natural resource management; a formal trail rehabilitation program and revised interpretive approach were underway in 1992. [46]

Big Craters-Spatter Cones

One of the most distinctive and popular sites at Craters of the Moon is the Crystal Fissure Spatter Cones. They formed along the Great Rift when clots of pasty lava stuck together during an eruption, building steep-sided, chimney-like vents in the process that look like miniature volcanoes. The spatter-cone chain at Craters of the Moon is considered one of the most perfect chains of its kind in the world. The chain is composed of three main vents and a fourth and smaller vent in the foreground, called Snow Cone. [47]

Because of their popularity, the Spatter Cones have been the focal point of the most intensive management and rehabilitation ever undertaken at the monument, most of it within the last decade. The vents, in a sense, epitomize the management of volcanic formations at the monument; they are both beautiful and fragile and open to public viewing and contact. Over the years, unchecked exploration wore a lacework of trails into the sides of the cones, sloughing off the delicate cinders on their slopes, caving in sections of one crater's wall, and eroding more than two feet of material from the rim in the process. Visitors throwing rocks and garbage into the vents altered the insulating properties of the features, raising the bases, and causing the possible disappearance of perennial ice. At risk as well was visitor safety, not only from climbing the cones but also from falling inside. Unrestrained activity altered the appearance and integrity of the spatter cones by the 1960s, making imperative rehabilitation efforts for their preservation and use.

Site History and Management

Human erosion of the spatter cones was evident early in the monument's history. Photographs from the early 1920s compared with those of late 1930s, for example, display the conical vents with social trails worn into their sides. [48] At the same time, resource management efforts consisted of cleaning the cones of trash, often with the assistance of local Boy Scouts in the absence of enough personnel. [49] In the fall of 1954 a formal trail was laid around the Spatter Cones, but most visitors still roamed the cones at will. Not until the early 1960s does

any discussion of corrective measures surface in monument records. [50]

In the wake of Mission 66's improvements to the monument's resource management, Superintendent Merle Stitt, as he had at Devil's Sewer, identified the Spatter Cones as a high priority for protection, stating that "Collective damage to spatter cone formations over the period prior to and subsequent to the establishment of the Monument has reached serious proportions." To remedy the situation, Stitt embarked on a study to address corrective action, and in January the following year, the monument submitted its first report on human erosion of the Spatter Cones to the director of Western Region. Yet the record is quiet as to any response by the regional office.

Without any formal program in place, management efforts remained sporadic. For safety, Superintendent Davis installed a grate over Crystal Fissure in 1963, and the following May, the monument once again enlisted the assistance of a Boy Scout troop to obliterate social trails from the slopes of the cones. [51] In September 1965, Superintendent Roger Contor initiated another study to protect the Spatter Cones. Contor, making no mention of the previous report, and implying that the problem had not been resolved, noted that the "present trail system and visitor flow pattern is causing adverse use...." [52] In his 1966 resource management plan, he urged a program to control visitor use and restore the features to a more pristine state. Rehabilitation of social trails, largely responsible for erosion, had failed to mitigate the problem. Hence, Contor decided that a "series of paved, fenced trails and unobtrusive barriers appears to be the only solution." [53]

When Superintendent Paul Fritz arrived only metal handrails enclosed the cones and served as protective devices. Although Fritz planned to complete the improvements recommended by Contor, only "stop-gap" measures resulted--the erection of more handrails and chain-link fencing for safety reasons, and the reconstruction of shoulder material on social trails to combat erosion, in addition to general enforcement and interpretive programs. [54] Yet these were not enough. Upon his arrival at the monument in 1974, Superintendent Robert Hentges underscored the deteriorating condition of the Spatter Cones in his reports and like his predecessors emphasized the cones as a primary target for resource management. The trail networks on the precipitous slopes tainted the aesthetic experience, and contributed to the cones' deterioration. Rocks thrown in the throats of the vents had decreased the depth of the volcanic wells so much that winter snows and ice were melting at a faster pace--all because certain park visitors get enjoyment out of "chucking things down into holes in the ground." [55]

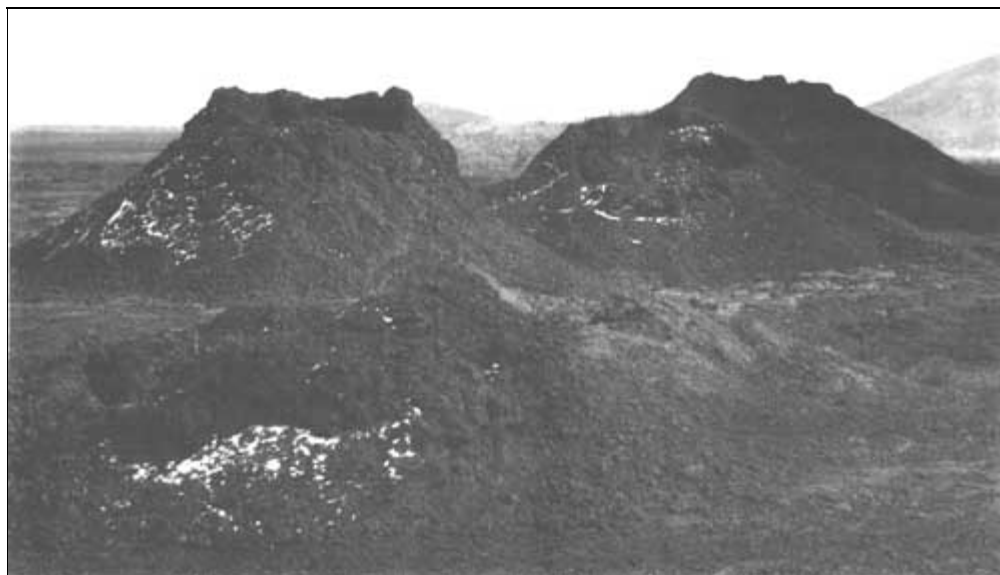
Once more delays emerged to stall any action. Unsure about funding, Hentges did not submit a Development Study Package Proposal (10-238) to rehabilitate the spatter cones site until 1979. The project was intended to balance preservation and use; it would "provide a safe trail system" in order to "insure minimal impact and still allow the visitor to safely experience the spatter cones." [56] As the monument awaited funding, the site nearly reached "the point of irreversible resource destruction." [57] In the meantime, the monument depended on existing procedures and an extensive public information campaign to inform visitors and solicit their support in mitigating impacts. [58]

Rehabilitation began in 1982. The project's major objective, ringing of suggestions voiced over the past three decades, was to improve the aesthetic and natural qualities of the features. Using historic photographs monument managers determined the cones' pristine state with their present state, and determined what an appropriate rehabilitation of the landscape should seek to achieve. Overall, rehabilitation the program rehabilitated all cones, yet only Snow Cone and the second cone were left open to public use, making them the exemplary features of the chain--a decision, Hentges believed, which best met the monument's and agency's mission. [59] Both monument staff and a five-member Youth Conservation Corps (YCC)

crew engaged in the labor-intensive program. Workers reshaped the Spatter Cones, hauling cinders and lava rocks from the base of the cones back up to their rims and sides. They upgraded existing foot trails, two of which were obliterated along with more than a thousand feet of social trails. Similarly, they rehabilitated around two thousand square feet of compacted land at the base of cones. About two hundred feet of asphalt trail was improved by the addition of a concrete retaining wall, and steps up to the mouth of the main vent were constructed. The metal handrails, considered unsightly around the first two cones, were replaced with wood railing.

By end of this phase of the project, paved and unpaved trails led up to and around the two open cones. On the second cone the main trail had been rerouted to run along the eastern face of the vent, and trails running the length of the chain had been closed, restricting visitors to designated and signed trails. A new wayside explained the resource management problem and fragility of the Spatter Cones, and the park newspaper and other pamphlets carried a similar message. [60] In August 1985, Superintendent Robert Scott pronounced the spatter cones project "an unqualified success." He noted that "Not only were the geological features rehabilitated, but visual impact in the area was significantly reduced and the visitor can visit the area safely." [61]

Smaller rehabilitation projects were completed in 1987. These involved hard-surfacing approximately 120 feet of trail leading into the second spatter cone, replacing the handrails at the Snow Cone with a sturdier railing designed in an environmentally sensitive manner, and transplanting native vegetation near the parking lot's southern edge as a method to channel foot traffic into the trail system. [62] At present the standard operating procedures at the site include monitoring trails, educating the public through interpretation and signs, and maintaining the trails. All of this helps to protect the cones and ensure visitor enjoyment and safety. Even so, the spatter cones, in spite of the rehabilitation efforts to date, still receive noticeable impacts due to their immense popularity, fragility, and accessibility. [63]



The Spatter Cones as they appeared in 1924. (*Haynes Foundation Collection, Montana State Historical Society*)



The Spatter Cones receiving heavy visitation in the 1950s. Note the braided trails on the slopes.
(CRMO Museum Collection)



The Spatter Cones after undergoing trail maintenance in the early 1970s. *(CRMO Museum Collection)*



The Spatter Cones after intensive remediation, mid-1980s.
(CRMO Museum Collection)

Inferno Cone

Situated near the Crystal Fissure Spatter Cones, Inferno Cone is a cinder cone, a conical mound formed by the accumulation of volcanic cinders around a vent erupting along the Great Rift. Although Inferno Cone is one of twenty-five cinder cones within the monument, its major significance lies in its use as a viewing platform: the panorama of geologic diversity seen from its crest is impressive. The landscape one scans embraces a series of mountain ranges northeast and west of the monument, the surrounding Snake River Plain, and the chain of volcanic features lining the Great Rift. In addition, the clarity of the monument's Class I airshed can be experienced here as well, a common sight being Big Southern Butte, a national natural landmark lying some twenty-five miles southeast of the monument. [64]

Inferno Cone also represents another example of preservation and use at the monument. As visitors trample up the cone's slope to view the feature and the surrounding region, they cause the trail leading up the cone's southwest face to suffer from compaction, widening, and discoloration. One of the most vexing questions for administrators has been the origin of the trail itself. More than likely, the trail formed out of social or casual use in the early 1920s when the loop drive was first bladed through the area. Subsequent management plans of the 1960s and 1970s call out the feature's use as a vista, but do not stress any type of resource management problem. One management plan even expressed that the cone was not the optimum choice for an overlook and proposed Sunset Cone in the northern unit as an alternative. On the other hand, the interpretive program contributed to Inferno Cone's increased use by including it in nature walks in the 1970s. [65]

The problems with the Inferno Cone trail, in this respect, represent a more recent issue for management. In the early 1980s, the monument initiated a program to control the trail widening process occurring with visitor use and to minimize the extent of the compaction and discoloration. At that time, the unmarked trail could accommodate several hikers walking abreast and was wide enough to entice operators of four-wheel drive vehicles to forego the formality of the short hike and drive to the summit.

Robert Hentges and his staff thus undertook two mitigation programs: break-up the trail

edges, and better define the trail route. During 1983, the monument employed YCC labor to manually spade and dig up the existing trail. The crew decreased the trail to about ten feet in width. As Hentges recalled, this worked out "beautifully, but of course, by the end of the year it hedged back out three more feet." The next step involved a tractor and a harrow driven up and down the trail to tear up the compacted tread. Visual disturbance formed an early drawback of this method. In contrast to the black cinder surface, the lava is "a nice bright color when you go under," Hentges noted, "but one day its matches out perfect. So [we] just harrowed, you know, with the old spikes, and ripped it up. And that did it." [66] The compaction was diminished, the trail narrowed, and the discoloration alleviated. Apparently, the trail marking program was never implemented, due to the fact that hikers would continue to walk around the lava rocks demarcating the edges.

Although somewhat successful, one management solution led to another problem. Inferno Cone, for example, received greater use as a result of restrictions imposed on the Spatter Cones during their rehabilitation and their restricted access following the project. Having tilled the trail for several years, the monument discontinued that approach in 1985--at the insistence of regional office staff during an operations evaluation. Responding to the evaluation team's recommendations, Superintendent Robert Scott launched a five-year monitoring program to document the trail's compaction, erosion, and widening. [67] Data collected would be used to determine the nature of the problem and whether or not surface erosion would continue after compaction had occurred. The program also called for measuring the trail each fall and for comparing those findings with stakes marking previous widths. [68]

The program turned out to be a failure. During the first year, wooden stakes were either destroyed or lost; new stakes were planted and read the next year, but were stolen by visitors the following season. By the fourth year, managers used buried metal stakes and lost half of them, and in the fifth year, using a metal detector, came up with the same results. In 1989, the monument terminated the monitoring program. Managers felt that the impacts were obvious and explored management options, but these are somewhat controversial, raising the question of aesthetics and resource protection. The point is whether use of the trail should continue, and with it the growing scar visible throughout the monument, or whether some alternative be sought. [69]

As the most recent resource management plan states, one proposal would close Inferno Cone trail altogether and construct another to the top of Big Craters to allow visitors a similar vantage point of the landscape. This would eliminate further erosion of the existing trail, but it is doubtful whether an intensive and possibly expensive rehabilitation program could fully eradicate the trail, or for that matter keep visitors off the closed trail. Furthermore, creating another trail, it is thought, would only multiply resource damage. The proposed trail to the rim of Big Craters, for example, had been tried before in the late 1960s and early 1970s as an interpretive vista, but was later closed due to erosion problems--visitors often climbed down the crater wall to reach the parking lot instead of returning by the trail. Similarly, another proposal suggests relocating the Inferno Cone trail, constructed as a switchback, to the cinder cone's leeward side, which would also require development of a new parking area. Whatever conclusions are reached, any solution places the fragile lava terrain in some kind of jeopardy, and places monument managers in the position of determining an acceptable balance between preservation and use. [70]

Tree Molds

Tree molds are generally found in the monument's remote wilderness backcountry, yet from the end of the spur road south of Inferno Cone, a short trail provides easy access to some of these features. Formed when molten lava flows encased trees and then hardened, tree molds

are the cylindrical casts of trees that have burned and rotted away. Vertical and horizontal, the features are delicate, as made clear by Robert Zink's report in the early 1950s, when he discovered the damage to one of the molds at the hands of irresponsible collectors. At one point, Superintendent Roger Contor thought of using plexiglass domes to protect those features exposed to visitor contact. [71] After 1970, wilderness status ensured restricted development and use. While the percentage of visitors who hike into the wilderness is substantially smaller than those who venture into easily accessible sites, the fragile tree molds remain highly susceptible to impairment. Even though only one sign marks their presence, the most vulnerable are those representative tree molds located a mere one mile hike from the road and confined to a small area. [72]

Caves Area

Caves, in the form of pahoehoe lava tubes, spatter cone vents, and fissure caves, are found throughout the monument. They are a significant feature of Craters of the Moon, and are specifically identified in the unit's enabling legislation as being important for their "scientific value and general interest." However, no formal management plan for the caves exists. Reasons for this stem from the usual lack of funding and personnel to patrol these extensive features; management requirements vary from cave to cave, because of their differences in origin, length, size, and accessibility. And until recently, it was thought that unlike many of the other features in the monument, the caves possess "no truly unique or fragile resources that dictate special management needs." [73] Except for the popular developed caves site, most caves are remote and this factor governs their management as wilderness, in or outside the wilderness area's boundary, in that they are generally left alone and unadvertised.

Furthermore, management policies emphasize visitor safety in the caves through interpretive programs, visitor contacts, and, in some instances, facility developments. Over the years, the issue of cave safety has sustained considerable concern in the subterranean environment where visitors encounter unstable rock formations, ice, total darkness, uneven surface areas, and low heights, and, in most cases, require some type of technical assistance for cave exploration, such as flashlights or ropes. Minor injuries and the administration of first aid to visitors are common occurrences associated with the caves.

With the appearance of the 1982 resource management plan, though, the monument identified for the first time, the need for a cave management plan. This grew out of the belief that the monument had fallen short of its enabling mandate to protect its caves, coupled with the recent Park Service initiative to develop a comprehensive resource inventory. Thus the plan noted that the monument needed to detail "specific management programs for individual cave sites. These management programs will vary according to the resource needs and use classifications of each cave." [74]

While such a plan has yet to be drafted, the monument has established some formal policies for the caves. Generally speaking, managers consider caves in the same realm as archaeological resources, and except for certain representative sites, discourage entry. Except for some sites in the frontcountry, managers strive to preserve and protect the caves in their natural state, especially their water sources and wildlife.

Conversely, the "developed" caves region along the loop drive is one of the most popular areas of the monument. Paved and marked trails extend from the parking area to easily accessible caves (Dewdrop, Surprise, Beauty, Boy Scout, and Indian Tunnel) that require neither special equipment nor training to enter and explore. Only the longest tube, Indian Tunnel, has received any significant development, however, through interpretive signs, a marked walking route, and a metal stairway for access; natural light enables visitors to explore its inner reaches without artificial light. The other caves, while open to visitation,

have been left undeveloped and they require a light source. Management of the area requires more time and energy, accomplished through interpretive programs (daily guided walks and self-guiding tours throughout the summer), and daily ranger and cleanup patrols.

As exhibited by the management of Indian Tunnel, cave developments were implemented with visitor use and safety in mind. For example, both Arco Tunnel and Great Owl Cavern were outfitted with various types of ladders, and stairs made from rope, chain, wood and metal; [75] the progression toward more stable structures was made for safety reasons after 1934. Access to Arco Tunnel degraded resources, mostly through vandalism, and led to the installation of a wire gate in May 1961. From that period forward the lava tube was accessible only by registration and special-use permit, and was a site for occasional research. [76]

While the gate continues to work well at controlling entry, damage through vandalism has resurfaced periodically over the past twenty years, requiring gate repair and the volunteer efforts still persists at the site. To care for the site, the monument has relied on members of the Gem State Grotto, a local spelunking club, who in 1983 volunteered their time to clean the florescent-orange graffiti arrows from the tunnel's walls and install a new security gate at its mouth. Unfortunately, no solution compatible with the resource has been found to remove the glowing arrows. [77] In contrast to the high-use site, Great Owl Cavern's stairway was removed in 1972, in compliance with wilderness regulations, and is now accessible only by rope or ladder. As with other remote caves, managers discourage exploration of the site since it requires technical climbing, and the repelling equipment can damage the cave itself. Not signed, it has in a sense faded from existence.

Whereas the remoteness of many caves lends itself well to ensuring their preservation, pressures on cave resources have become more acute in recent years. Managers, although discouraging cave exploration, were obligated to divulge the location of caves through the Freedom of Information Act. Maps also documented their location, exposing caves to more threats. One significant example has arisen over the exploration of Crystal Pit. Because the crystals are extremely fragile and the pit is extremely deep, requiring technical climbing, the cave has been closed to public access since August 1963. But it appears from damage to the grate that Crystal Pit has been entered over the years, and within the last few years, a group of cave enthusiasts has filed an official protest to explore the site. Furthermore, research has documented at least two rare species living in the monument's caves, the Blind Cave Beetle and the Townsend Bat.

With the passage of the Federal Caves Resources Act Protection Act in 1988, which mandates the study of cave resources and the identification of significant caves, managers received further impetus to complete a cave inventory and management plan. By doing so, they can address these and other issues. The legislation itself provides management assistance. It officially places caves in the category of archaeological sites, for instance, enabling managers to withhold information from the public except under specific conditions. For this reason especially, the monument proceeded with an inventory and management plan. [78] Relying on volunteer labor over a period of several years, since there was neither funding nor personnel to conduct such an extensive study, the monument hoped to have its plan drafted by 1992. [79]

VEGETATION

Although the volcanic landscape of Craters of the Moon appears to be a trackless waste, it supports a wide array of plant life. The monument's lava flows contain twenty-six vegetation types and over three hundred plant species. Cinder cones, the Carey Kipuka, and the northern unit, for example, sustain various plant communities of lichens, grasses, herbs, shrubs, and

trees. Management issues have revolved largely around the control of trespass grazing in the north end, to a lesser extent, control of exotic species, fire ecology, and protection and study of the Carey Kipuka.

GRAZING

By far the most protracted issue, trespass grazing, mostly by sheep, has plagued monument managers nearly from the area's inception. The place of contention lies in the foothills of the Pioneer Mountains in the north unit; this environment possesses Little Cottonwood Creek drainage (source of the monument's administrative water supply), traditional grazing lands, and lush vegetation: native grasses, Douglas fir, aspen, and other riparian plant life. The monument did not inherit the grazing problem upon its establishment. The original legislation included only what might be termed "worthless" grazing lands south of the foothill country. But with the enlargement of the monument in July 1928, Craters of the Moon acquired more than two thousand acres of hill country for its administrative water supply and with this lands grazed by livestock. And so began a long history of mitigation policies for trespass grazing.

Roots of Controversy

Expansion, among other things, incorporated the Little Cottonwood Creek drainage to secure an administrative water supply. The grazing issue was connected generally with this expansion and specifically with the water system land exchange. The monument's enlargement and the resolution of private holdings incited protests from some livestock interests who questioned the intentions of the Park Service and its encroachment on the "public domain," and more important, its policy regarding grazing in the new area. Throughout the settlement of private claims in the late 1920s and early 1930s, the controversy boiled down to clarifying the Park Service's grazing policy at Craters of the Moon, specifically in the northern unit.

A major source for the controversy has been the boundary. As the management of the mule deer herd and poaching demonstrates, the northern boundary was not drawn to conform to topography but rather the grid pattern of township and range. Instead of following the hydrographic divide--or ridgelines--and therefore being readily apparent, the border runs a seemingly arbitrary course up and down the northern slopes. This poses a particular problem for the prevention of livestock grazing, since sheep and cattle unless restrained by attentive herders or sturdy fences will roam at will in search of greener pastures. Due to the boundary and the fact that federally administered and privately owned grazing lands abut the monument, trespass occurs. The Park Service boundary invited this type of controversy because the lands involved were at one time part of the open range and also part of a seasonal sheep migration route.

The First Grazing Policy: The Stock Drive Path

On October 5, 1929, Custodian Robert Moore notified the Washington office that stockmen had used the grass on Sunset and Grassy Cones prior to the monument's 1928 expansion, and had "trailed through that way" for years driving their sheep from winter to summer range and points of shipment in the Wood and Lost River regions. Because of this precedent, Moore recommended that the Park Service designate a driveway to accommodate this activity, covering virtually the entire northern unit. [80]

Amenable to Moore's suggestion, the Park Service responded on October 24 stating that it was willing to make an exception to its general policy of grazing prohibition in national monuments and parks "in view of the conditions at Craters of the Moon there would appear

to be no objection to permitting sheep men to drive their flocks through the monument area, though it would be unwise to permit them to graze on Grassy and Sunset Cones and other areas while en route." [81] The one requirement was that all stockmen receive prior permission and that the stock move through "uninterrupted."

Since Moore's conception of a stock drive path covered most of the northern foothills, he believed that no "officially" designated path was warranted. None had been established during the years of open range. As long as livestock owners directed their flocks along the north half of Sections 25 and 26, the Park Service could in fact allow for seasonal passage and grazing to continue. The northern unit had been acquired more for its water source than its volcanic phenomena, the custodian reasoned, showing a bias for grazing interests and a limited understanding of the importance of the area's vegetation for sustaining wildlife populations. Sheep confined to the northern foothills would not "destroy any of the scenic points of interest." [82] On November 11, 1929, the Washington office agreed to authorize grazing, by permit, on the lands recommended by Moore, including all of Section 27.

Yet this policy was short-lived. The following year, on May 12, the Park Service permitted the first and last stock owners to graze on monument lands during this period, authorizing the Martin Brothers to run three hundred head of sheep on the north half of Sections 25 and 26, and 34, and all of 21, 22, and 27. However, it soon became apparent that this "limited" grazing policy would not be effective because it excluded other livestock owners with interests in the northern unit. One of these parties was the Arthur Brothers who owned an eighty-acre parcel of land. The Arthurs, and any other land owners grazing in the monument, were stranded, their operations precluded by government lands surrounding their holdings in which grazing was prohibited. After Custodian Moore informed the Arthurs of this fact and that they could no longer water their sheep on monument land, they alerted Idaho Representative Addison T. Smith. Smith urged the Park Service to reach some type of settlement--either exchange the lands or grant the Arthurs permission to use the water. The Service notified Smith that "we would be glad to negotiate an exchange of lands and get the necessary authority in law therefor." [83]

As part of the water system's development, the Park Service was trying to acquire private lands in the northern unit, and the grazing issue seemed to give it some leverage in the negotiations. Yet, as the Arthur case showed, there were possible political repercussions involved that might risk successful land acquisitions and by association the water line's construction. The Service, for instance, had renewed the Martin permit on October 12, 1930. Yet less than a week later, Custodian Moore requested that Edward B. Arthur be given the Martin permit instead since the water line needed to run across the Arthur holdings, and a grazing permit might help negotiations. Realizing that this kind of favoritism could only hinder rather than assist the situation, the Washington office decided that the grazing policy was headed in the wrong direction. And at this juncture, it clarified its position, stating to Moore on October 23 that we were "very much opposed to encouraging grazing of sheep in the monuments...." For this reason the agency rescinded all grazing in Craters of the Moon, beginning in 1931. The agency did, however, reach a compromise. Sheep drifting into the northwestern corner of the monument would be tolerated temporarily, "without any recognized rights under permit which might later be pointed to as a precedent." [84]

Not all ranchers accepted the news lightly. Some believed that monuments should allow grazing as a general rule, even though parks did not. In January 1931, Thomas C. Stanford, president of the East Side Blaine County Grazing Association, protested against the Park Service's "exclusionary" policies toward grazing at the monument. First, the 1928 expansion withdrew valuable grazing lands, lands that did not contain any "scenic wonders," and second, the bill to exchange private lands within the monument to complete the water system, H.R. 15877, threatened to remove more lands from the public domain and undermine the

livestock industry. Stanford tried to enlist the support of the Idaho congressional delegation, Representative Addison Smith and Senator John Thomas, to defeat or amend the bill to ensure that grazing would continue within the monument. Smith, who sponsored the legislation, ignored Stanford's pleas. But Thomas, trying to help the rancher's cause, ended up supporting the bill, because Director Horace Albright assured him that it would not infringe on grazing interests. [85]

In order to see the exchange bill pass in February 1931, Albright was willing to commit to an agreement on the grazing issue. For this reason, it seems, he was somewhat equivocal about the agency's policy for the monument. He related to the senator that the Service did not reject grazing within the national monuments as long as it did not interfere "with the purposes for which the monument is established." Restrictions, therefore, applied in some instances, but the Park Service, he underlined, has always attempted to cooperate with livestock owners and issue grazing permits when within policy guidelines. [86]

It was clear after the legislation passed that Albright and his agency had no intention of changing the grazing policy set down in 1930. Although Stanford and his fellow association members wanted grasslands in the northern unit designated for grazing or excluded from the monument for this purpose, the Park Service reiterated that no grazing would be permitted. This type of use was simply not compatible with the monument's purpose. Only authorized seasonal sheep crossing and drifting--within reason--would be allowed. The Service justified this position claiming that it had not intentionally acquired prime range lands which did not hold volcanic phenomena and thus not meet the monument's purpose. The watershed was important to the area's administrative purposes; the forage for intensive grazing was minimal (as was water), and the hill country supported wildlife--namely mule deer--with which grazing would interfere. In the 1930 season alone, an estimated fifty thousand "drifted" through the monument, migrating to and from the Wood and Lost River Valleys, as well as from Minidoka, along the lower Snake River region, in the process trampling and overgrazing monument vegetation. [87]

Left to be resolved was the establishment of a stock driveway. Whereas Custodian Moore did not find it necessary to lay out and officially designate one, his successor Burton C. LaCombe did. LaCombe, veteran Yellowstone buffalo keeper, assumed the custodianship in late May 1931 and immediately touched off a controversy with livestock owners when he ordered an unauthorized herd of three thousand sheep off the monument's northern foothills. Up until this point, the grazing policy was somewhat informal; large bands of sheep were driven across the monument to other ranges, and many lingered feeding on monument grass. For example, the owner of the expelled herd, Grover Newman from Jerome, Idaho, confronted LaCombe about his authority to order him off the northern range. Undaunted, the custodian informed Newman that he was enforcing National Park Service regulations that excluded grazing and unauthorized livestock crossing. Newman lodged a complaint with Senator Thomas "to find out what the trouble was." [88]

On May 28, the senator and Thomas Stanford, representing the grazing interests, inspected the northern section with Custodian LaCombe. Stanford told Thomas, who was mediating the event, that he wanted a stock drive two miles wide. LaCombe countered with a quarter-mile path, which Stanford rejected. The custodian, however, stood by his proposal; two miles covered most of the northern unit, which he claimed would only result in grazing of the entire area. As far as he was concerned, the monument was better off without any type of grazing, in transit or otherwise. Neither the range nor water resources of the north unit would support large numbers of sheep, and the monument's purpose was better served by protecting its watershed and promoting wildlife through the habitat protection. LaCombe informed Director Horace Albright that the Park Service could overcome any opposition to his decision because it was largely a regional versus local issue. "The local people that have sheep close

by do not want or rather do not trespass on the monument, it is only the migratory sheep from southern Idaho going to their summer range, that did stop and graze at all on the monument." [89]

Although Stanford and Thomas disagreed with LaCombe, Albright supported his custodian's recommendations in a June 12, 1931 letter to the senator. According to the director, the grazing policy was set; seasonal grazing was excluded, but authorized sheep could be taken through the monument "with reasonable dispatch" across a quarter-mile path, three and a half miles long, following "an old wagon road," Goodale's Cutoff. [90]

LaCombe helped solidify the monument's grazing policy by designating the stock drive path and working to limit trespass grazing. But the real measure of the custodian's role and the policy itself came from weathering Senator Thomas' threats of damaging the agency's support in Idaho because of its treatment of grazing interests. [91] As LaCombe had predicted, the Park Service countered any negative publicity by currying public support in the local communities of Arco, Hailey, Blackfoot, and Idaho Falls, excluding Carey where Stanford's grazing association was headquartered. LaCombe's approach, urged by Albright, was to convince civic leaders that grazing would degrade the monument and hinder the development of tourism. The custodian not only met with community leaders, he also joined their ranks in a public relations strategy, becoming a member of various clubs such as the Lions Club, the Arco Commercial Club, and the Idaho State Automobile Association of America. Since those opposing grazing restrictions were a minority and outsiders, and since the local communities valued tourism and the monument as a scenic attraction, they supported protection and development of Craters of the Moon. In late 1931, Albright lauded LaCombe's "very fair and tactful handling of the grazing problem" and his development of "public sentiment" to support the monument's policy. Although Senator Thomas and Stanford pressed their case for several more years, they eventually gave up, the Service riding the crest of positive public opinion for its policy. It was a policy that lasted, for the most part, until the 1970s. [92]

The Policy Evolves

As an issue, trespass grazing remained a manageable problem in the forty years following the establishment of the monument's policy. A paucity of evidence exists to detail how well the drifting and driveway practices operated. It can be assumed that conflicts were present, replaying similar problems encountered early in the monument's administration. For example, in August 1952 Acting Superintendent Robert Zink reported that confrontations with a local sheep herder led to the resurveying and marking of the northwest boundary. [93] Policy, then, involved showing the boundary to herders and threatening legal action if they did not secure permission prior to driving their sheep across the monument. The boundary, however, provided little deterrent to trespass.

But as with any management program, enforcement rests with the superintendent and his interpretation of the situation. In September 1963, Superintendent Daniel E. Davis faced a common grazing and administrative problem.

The urge for bright lights and muscatel apparently overpowered all of the local sheep herders at about the same time. Four flocks of 600-1000 head each were abandoned just outside the Monument and were "on their own" most of the month. The pristine grasslands and permanent streams drew all of them immediately onto the Monument. So much time was spent herding sheep that we had urgent need for either a Basque ranger or a horse. For most of the period it was impossible to unscramble the ownership--once determined--the owners were given an ultimatum to keep their sheep out or go to court. [94]

Davis, in spite of this chaos, believed that no change in policy was warranted. The owners responded quickly and responsibly to his calls. In fact, he had no quandary with livestock on the monument, provided that herders utilized the north unit as a driveway. It represented critical seasonal crossing for pasture change; the crossings took place twice a year and lasted, usually, less than a day. The superintendent believed it was only fair to let sheep owners use the drive path, yet if there had been a realistic solution to keeping sheep out, he would have employed it. [95]

A Case in Point: The Barkers

While most livestock owners maintained amiable relations and attempted to comply with NPS regulations, one has tried the patience of monument managers for several decades, and has thus been at the forefront of the area's trespass grazing problem. For several decades, Curtis L. Barker of Bellevue, Idaho grazed sheep on one of three Bureau of Land Management allotments adjacent to the monument's eastern and southern boundaries. The problem area was the Little Cottonwood watershed; Barker's sheep, grazing on a BLM allotment near the ridgeline above the drainage, spilled over the crest and descended upon the springs supplying the monument's water, posing serious contamination possibilities.

Barker's record of trespasses became encyclopedic. The beginning of his operation in the monument's vicinity is not known, but as early as 1959 monument superintendents were reprimanding the rancher for violating Park Service policy and driving his sheep across the northern section without permission. [96] Although his predecessors may have overlooked such infractions as inherent to the monument, Superintendent Roger Contor met the issue head on. He treated grazing issues as serious but as a matter of routine policy.

In May 1965, for instance, Contor discovered that the BLM was changing permits adjacent to the monument from sheep to cattle, and cattle unlike sheep were given free range, private landowners bearing the burden of fencing the animals off of their lands. Contor notified Bill Mabbutt, BLM Shoshone District Supervisor, that the National Park Service was firmly opposed to trespass grazing, and that the monument was exempt from this "general rule." "The responsibility of keeping domestic livestock of any type off National Monument land rests entirely with the owner of the livestock." To bolster the monument's commitment to combat stock trespass, Contor also notified Mabbutt that Craters of the Moon had erected a holding pen in the Little Cottonwood drainage to retain trespassing horses or cattle, and, he further emphasized, "we will be prepared to use it if necessary." The monument's primary goal with this stance, though, was to maintain a "good neighbor" policy, to avoid legal repercussions and hard feelings, and to strike the best possible accord with adjacent ranchers. [97]

In the summer of 1965, Superintendent Contor took a firm stance against Curtis Barker's grazing infractions. On July 1, Barker met with monument staff to discuss the rancher's illegal grazing, and after consultation with the BLM district manager in Idaho Falls, it appeared that the BLM might undertake a fencing project in the northern unit to prevent ranchers like Barker from trespassing on Park Service lands. On July 26, the Park Service funded a resurvey of the northwest section of the monument by the BLM. By September the project was complete; crew members encountered difficult terrain, surveyed some previously unsurveyed lands, and placed steel fence posts around this segment of the boundary. But the fencing program never materialized. [98]

Meanwhile, both the conference with monument staff and the boundary project caused little impact on Curtis Barker's practices. Having issued Barker one warning, Contor arrested him on September 17 for trespass grazing; Barker pled guilty on October 25 and was fined \$75, with the understanding that another conviction would include a fine as well as jail time. [99]

Litigation over, Contor continued with monument policy, and on December 4 permitted Barker to trail his sheep through the northern unit along the traditional driveway of Goodale's Cutoff, for a maximum of two hours. [100]

To Contor the grazing issue contained all the significance of a traffic violation; it was standard protection procedure that a larger park may not have included in a monthly report. In a similar sense, Contor's successor, Paul Fritz, treated grazing as a non-problematic issue. Fritz's management philosophy revolved around maintaining and building public relations. Consequently, he continued an assertive relationship with Barker, but rather than exchange legal responsibilities, Fritz offered an olive branch. The peace proposal was water. Fritz allowed the rancher to fill up his water supply at the monument, something no other superintendent had done to Fritz's knowledge. The superintendent, however, remained cautious. While he continued to permit Barker's trailing of stock through the northern unit, he observed the rancher's passing, making his presence known and making certain the herd traveled north of Sunset Cone and that no grazing occurred. "If you don't watch," Fritz said, "he'll take advantage of you." [101]

In Superintendent Robert Hentges' estimation that is exactly what happened. Arriving at the monument in the spring of 1974, Superintendent Hentges ascertained that past management of the issue had been a failure. Over the past seven years, for example, the monument had issued fifteen violation notices to Barker, all of them ignored. In one respect the situation had changed; sheepherders no longer trailed their flocks through the monument, [102] yet unchecked grazing by neighboring sheep still threatened monument resources. And in this instance, Hentges stated, the most serious management issue for him to resolve was "the rampant and willful sheep trespass by animals belonging to Curtis and Pat Barker [his son later became a partner]...." [103]

In his first annual report, Hentges noted the importance of solving this problem. Trespass grazing occurred with frequency; it was difficult to prevent due to the physical terrain as well as the lack of enforcement personnel; and the visible impacts of overgrazing on the hillsides were all too apparent. He also suggested that the multi-year program for fencing the northern unit boundaries for fiscal year 1978 be reconsidered. This was not a viable solution to the problem. Neither the environmental conditions nor the three-strand barb wire would make the \$30,000-\$40,000 project worthwhile. Because the fence line would run along sidehills, gullies, and ridges, it would be exposed to and be destroyed by drifting winter snows, and the three strands of wire would not keep sheep out. [104]

At first, Hentges tried, as had previous managers, to resolve the situation through conference with the rancher. And as past superintendents had experienced, no immediate solutions resulted. In a June 23, 1975 memorandum to the Pacific Northwest regional director, Hentges stated his case and requested assistance. For the past fifteen to twenty years, Barker as a BLM permittee had abused the monument's resources by willfully allowing his sheep to graze on Park Service land. The catalogue of contemporary impacts echoed those from the 1930s. In a three-to-four-hundred-yard penetration, "grass and all flowers had been cropped off as if a mower had passed through the area. In addition, the animal's hooves had roto-tilled much of the ground and their droppings littered the area." Because Barker abandoned his sheep near and in the boundaries for a period of six weeks each spring, summer, and fall on the average over the past years, "the ridges and portions of the slopes within the northern most part of the park are nearly barren and will continue to be until some action can be taken against this man that will convince him that he best knock it off." [105] Livestock activity also threatened the water supply's quality, the trespass occurring a few hundred yards above the four spring boxes and their dilapidated and unprotective fencing. [106]

Looking to the BLM for help proved useless, since that agency only maintained

responsibility for infractions taking place on its lands. Further exacerbating the problem was the fact that small fines meted out in court offered little deterrence to Barker. And Barker, rubbing salt in the wound, "has made it a point to tell people that the monument grass has been the best and cheapest feed he has had during his ranching career." Finally, the superintendent concluded that all of this left the Park Service with the need to find "a way to correct a situation that has been allowed to fester for so many years in the management system at Craters of the Moon." [107]

The First Fencing Project

Before the regional office could respond, Hentges offered a possible solution--a fencing project. Sometime in 1975, [108] after reaching an impasse with the Barkers, the superintendent queried the U.S. Magistrate in Pocatello, Idaho for his opinion on the problem. It was then that the magistrate, acting as a mediator, brought Hentges and Pat Barker together to reach a compromise. Barker contended that no past monument administrators had been willing to negotiate with him or his father, nor had any entertained their suggestions to construct a fence along the ridgeline separating the Barker property from monument land. Former superintendents, according to Barker, downplayed this idea, stating that in order to be practical the fence would have to run entirely on private property. And, as noted above, environmental conditions precluded the success of this approach. [109] In its simplest terms, the situation had devolved to either putting the rancher out of business, by requesting that the BLM revoke his grazing privilege, or compromising with the fencing project.

A settlement was achieved when the court officer suggested constructing the fence across mostly Park Service land. Hentges conceded, provided that proper NPS authorization and a BLM right-of-way permit were acquired, since it would cross corners of the agency's land. At this point, the deal was struck. The superintendent offered not only to allow the fence to run on the monument, but also to fund and build the fence at Park Service expense. For his part, Pat Barker would supervise the project and maintain the fence after installation, to which Barker agreed. And because Barker agreed to these conditions, the judge "forgot" the ranching operation's past violations. A short time later, both rancher and superintendent charted out a path along the monument's eastern ridgeline. [110]

Pacific Northwest Regional Director Russell E. Dickenson approved the project. On February 2, 1976, he concluded that a fencing project provided the only viable solution to the monument's grazing problem. Essentially, the director agreed with Hentges' evidence, pointing out the rancher's habitual infractions; past NPS administrative shortcomings; and most importantly, noting that the project was necessary to mitigate resource disturbance. The quality of the administrative water supply, while not adversely effected, was threatened. Vegetation at the core of the monument was pristine and deserved better protection, for the native grasses and other plant life provided valuable wildlife habitat. [111]

In its final form, the fencing agreement reflected the provisions outlined earlier by Hentges. The Service would provide funding and labor for construction, and would issue a special permit to Barker for grazing privileges on the 148 acres of land "fenced out" of the monument; the Barker ranch would supply the supervision of the construction, and would maintain the fence, as long as it ran sheep in the area. [112] Environmentally, no compliance was deemed necessary, since the fence line traversed mostly rock outcroppings of which there were no significant features. And culturally, neither historic structures nor any known archaeological sites existed in the route. [113] Where state laws were concerned, the short length of the line freed the Park Service of complying with passway-standards for migratory species such as antelope, but the fence height could not exceed forty-two inches. [114] For its part, the regional office agreed to drop the three-strand project.

Commencement of the fence project was postponed one year, during which Hentges began a boundary marking program in 1976, completing it in 1977. [115] When fence construction began that year it lasted the entire month of July. A twelve-member Youth Conservation Corp crew provided the labor. Although employed by the Park Service, they were supervised by the Barkers. The crew built a two-and-a-half-mile-long, barbed-wire fence across the northeastern portion of monument and adjacent lands. All of the materials were paid for by the Park Service and airlifted by helicopter to the ridge tops at agency expense. After being tested against sheep trespass in the fall of 1977, the fence, as Hentges reported, successfully deterred penetration by wandering animals, although some stock circumvented the fence to the north. [116]

Evidently, the superintendent intended to have the Barkers extend the fence line across Section 16, state land, down to Lava Creek to show "good faith" and to avoid the above situation. However, it seems that neither Hentges' appeals to the ranchers nor his inquiries with the state met with the results he desired. [117] Upon completion of the main fence, the superintendent hoped that the Barkers would build this other section of fence the following year. He also hoped that if the fence survived its first winter it could be extended down the eastern boundary of the north unit to the monument highway. [118] Although none of these additions occurred during Hentges' tenure, they anticipated future management actions.

The Special-Use Permit

What remained to be completed with the Barkers was the drafting and issuing of their special-use permit. Having initially prepared the permit in 1976, the monument awaited approval from the regional office and for the fence's completion before the permit was finalized and issued in 1978. [119] The document stipulated that from May 15 to November 15 the Curtis L. Barker operation could graze the

Southeast corner of section 16; T. 2N., R. 23 E. lying north and east of park fenceline; Northeast corner of section 22, T. 2N., R. 23 E. lying north and east of park fenceline...[for the purpose of the] grazing of domestic livestock (sheep) within the boundaries of Craters of the Moon National Monument...[for the sum of] one hundred dollars. [120]

The total acreage involved encompassed 148 acres of monument land, [121] determined, as noted earlier, to be of minimal value to the monument's purpose. This "sacrificial" land made possible the greater good of mitigating trespass. [122]

Six supplemental provisions accompanied the permit and included the following conditions: The Barkers were to maintain the fenceline inside and along the monument's boundaries; the ranching outfit would incur all expenses for repairs and design changes (upon Park Service review); the permittee would inspect the fence annually with monument officials, and would ensure no trespass while the sheep owner's stock were adjacent to the monument; and last, the Barkers were to understand that the fenceline by no means constituted a boundary status change, and that all NPS regulations should be adhered to. [123]

Up until 1984, the fence and special-use permit operated very well to lessen the impacts of trespass grazing in the northern unit. However, the solution also created its own problems. The Code of Federal Regulations was revised in 1984, and although it provided for certain types of livestock grazing, the new regulations did not apply to Craters of the Moon. Hence, from that year forward, the policy of issuing a special-use permit was prohibited and ceased at the monument.

The change in federal regulations left monument Superintendent Robert E. Scott with an

illegal situation that the Park Service had helped create. The 148 acres fenced out of the monument were now being illegally grazed. Ironically, the plausible solution of moving the fence to enclose this section would fail because of the very reason the fence crossed the ridgeline--winter snows and terrain would destroy it and make maintenance costs prohibitive. Requiring the Barker operation to no longer use this section and keeping livestock from trespassing were both unrealistic propositions. [124] While monument officials cast about for solutions to an apparently winless situation, past practices "unofficially" continued.

Meanwhile another grazing situation developed largely out of the monument's control, involving the Barkers again, which led to more discussion of extending the existing fence to resolve the issue. As had occurred in the 1960s, on June 20, 1985, the Idaho Falls District of the BLM revised its authorization and use pattern for grazing, which basically allowed for the Barker operation to run sheep and cattle on the flats between the Blizzard Mountain Road and the north end's eastern boundary. The BLM had consulted monument personnel shortly before the initiation of its new policy and agreed to build a fence across the "flats" in 1986. [125]

Superintendent Scott welcomed the BLM's fence proposal and attempted to embrace a policy of cooperation. He suggested that the new fence, as envisioned by Hentges, should roughly traverse the eastern boundary line to prevent livestock trespass from this new use pattern. At the same time, he expressed several concerns about the BLM management actions and their effects on the monument's resource management program. First, a fence was not a solution to the trespass problem. Sheep could still go around the fence, and while it did afford some resource protection, the Barkers failed to maintain the fence as required causing the Park Service to shoulder the maintenance burden. Second, Scott, while emphasizing the importance of a fenceline in prevention of livestock trespass, emphasized this did not exempt the Barkers or others from legal actions, for he was willing to "vigorously enforce livestock regulations in all future incidents." And third, the fence itself raised questions regarding provisions for the migration of wildlife and the prevention of hunting, since here as well the fence would not demarcate the boundary. [126]

While the fencing project was still in its proposal stage, its necessity was evident several months after the BLM policy was activated. At that time, monument staff documented six incidents of Barker cattle trespass between August 17 and September 29, 1985. [127] True to his word, Superintendent Scott warned Curtis Barker of the government's legal position should trespass continue. According to Idaho state law, the Park Service, considered a private landowner, was obligated to fence out livestock, contrary to what Contor stated in the 1960s. Without a fence, Scott told the rancher in an October 1, 1985 letter that his only recourse was to enforce federal regulations. These stated that livestock trespass was illegal in the monument, and empowered the superintendent to impound livestock, which he intended to do, and if the fines for trespass went unpaid, the Park Service would auction the animals for compensation. [128]

Scott's stand apparently produced little improvement, and on July 8, 1986, he conceded that past meetings with both the Barkers and the BLM failed to create any permanent solutions to the complex situation. For various reasons, Curtis Barker stated that the solution could not come from him; financially he could not afford to construct the desired fenceline; moreover it would not even be on his land, but the BLM's. Nor did he think the problem originated with him. Rather, he was the victim of the BLM's administrative turn of hand, being forced to comply with new grazing allotments. For his part, Scott accused the BLM of indecisiveness. Although the agency had agreed to and programmed for the construction of the new fence, the BLM had "vacillated between considering a fence construction project" and "stating the problem is exclusively the park's." [129]

A few weeks later, Idaho Falls BLM District Manager O'dell Frandsen confirmed Scott's accusations. In a July 22 letter, Frandsen essentially absolved his agency of any responsibility for Craters of the Moon's grazing problems, stating that "the situation had existed when the monument was established." Frandsen said that his agency was willing to cooperate and aid the monument where it could; however, "the solution cannot come from BLM." On this point, the agency was unequivocal. As a final release from any obligations, Frandsen rescinded the offer to engage in the fencing project, citing budget restrictions. [130]

A short time later, Scott turned to the regional office for guidance, unable to find solutions at the local level. Recapping the history of the grazing situation to Pacific Northwest Regional Director Charles Odegaard, the superintendent noted that over time he and his predecessors had exhausted all possibilities of cooperation with the rancher, the BLM, the U.S. Attorney's office, the Federal Magistrate, and U.S. Solicitor's office. To date, thousands of Park Service hours had elapsed attempting to find a permanent resolution. By now the double-pronged issue was all too familiar: how to prevent livestock from grazing the 148 acres in the northern unit (or legally allow them to continue), and how to mitigate the recent trespass problems.

With regard to the first issue, Scott suggested several possibilities. He advocated amending the CFR to include the special-use permit option for Craters of the Moon. He stated that such a regulation would help solve this unique case. Although the monument recommended the new regulation, the regional director did not approve of this avenue; the Park Service's authority in this area was uncertain, and there was also concern that this action might set a precedent for other areas. Another solution offered was a boundary revision for the northern unit, to redraw the boundary lines to conform to geography instead of township and range. Scott noted that this option would solve one problem but create another; trespass grazing would be controlled more effectively, while encouraging more illegal hunting from the ridgeline. As for the second grazing issue, given the events noted above, the superintendent still believed that a fence was the most logical solution. [131]

The Boundary Revision

Once the BLM removed itself from the fencing program, the Park Service decided to solve the situation on its own and put the grazing issue to rest. For this reason, perhaps, Superintendent Scott reversed the monument's position on revising the CFR and submitted a boundary change proposal to the regional office later in 1986. [132] Regional Director Odegaard approved the proposed boundary revision, which would delete 315 acres from and add 210 acres to the monument. The new boundary would conform with the hydrographic divide, and a fence would be constructed along the ridgeline to prevent livestock trespass. More importantly, it would help solve both the Barker problem specifically and trespass grazing in general. It would protect the monument's watershed and establish a boundary that would serve the needs of both the National Park Service and the Bureau of Land Management. [133] In short, the issue had come down to a matter of simply drawing the line on a map: trespass of any kind, legal or otherwise, was unacceptable. Although approved and sent to the Department of the Interior in January 1988, the proposal was delayed there indefinitely while issues such as park expansion were addressed. [134]

The Second Fencing Project

While waiting a decision on the boundary change, Superintendent Scott pursued the fence construction project to treat the trespass of livestock from the north as well as the east. By 1988, a four-mile long fence was in place. It traversed the hydrographic divide of Little Cottonwood Canyon crossing BLM as well as NPS lands extending to the highway. Relations with the BLM remained on good terms so the location did not become a source of friction. Similar to the previous fencing project, the monument employed YCC labor to

construct the fence. Similar as well, the Park Service was unable to build the entire length desired. Scott's proposal called for six-and-a-half miles to be added to the original fence on both ends, for a total of nine miles, but only four were added, totaling six-and-a-half miles. There was no funding for the entire length, yet Scott did not press for more, since he was satisfied that trespass south of the highway was minor. [135] Furthermore, the fence did not completely surround the northern unit, so trespass grazing continued.

In 1989, the BLM revised its grazing allotments and permitted cattle to graze on tracts in the Big Cottonwood Canyon west of the northern unit. Once again, trespass grazing occurred, this time in the Leech Creek drainage. This sensitive riparian area, easily impacted, provided one more example of why the monument wanted to bar livestock from within its boundaries, and why a boundary revision would resolve critical management problems.

No Tolerance

In 1990, a significant decision regarding the grazing issue took place. After gaining law enforcement support and cooperation from Butte and Blaine counties, Superintendent Scott embraced a policy of no tolerance toward trespass grazing. Especially important was the case of Barkers and those acres covered under the former special-use permit. In a March 12 letter to Curtis Barker, Scott articulated the monument's new position. Until the proposed boundary revision became reality, there was no "simple and quick" end to their conflict. Whether the boundary was redrawn or not, Scott concluded that, after inspecting the northern unit the previous fall, "the area can no longer suffer the kind of impacts that grazing is causing." He then stated that he planned to prosecute livestock trespass to the full extent of federal regulations, whereby violators would incur a six-month jail sentence and a \$5,000 dollar fine. "It is my intention," Scott told Barker, "that the above actions be carried out whenever your livestock are found within the monument boundary." There was no more room for compromise; trespass was Barker's "mode of operation," and this action would no longer be tolerated. Cooperation had been a one-sided affair at the Park Service's expense; Barker never maintained the fence as he had agreed, and he claimed to have constructed the original fence when he actually functioned as a supervisor only. As Scott noted "we feel that you have not demonstrated a good faith effort to prevent livestock trespass within the monument." [136]

The superintendent's new stance, however, was deflated by the U.S. Attorney's 1991 ruling. This precluded Park Service enforcement of trespass grazing on the 148 acres fenced out of the monument based on historical precedent. In effect, by allowing Barker to graze those lands, the Park Service "acknowledged the limited significance" of the land in question, "as well as the propriety of the land use for sheep grazing. To now pursue criminal sanctions in the light of that factual reality and a bureaucratic 'snafu' would be imprudent legally and unfair morally." Barker was absolved of all charges, and continues to graze monument land. [137]

When the grazing policy was established in the 1930s, it met the needs of the time. It made grazing an unsanctioned land use within the monument, and to maintain amicable relations with neighboring ranchers, authorized seasonal sheep crossing. Within the last several decades, this latter provision became less of a concern, while illegal livestock encroachments evolved into the central point of contention. In a sense, the Barker tale is exceptional, considering that most ranchers abide by agency regulations. By the same token, the Barker case is significant because its resolution might apply to the grazing problem in general. Yet for more than four decades the case's various "solutions"--fencing, special permit, proposed boundary revisions, and no tolerance--have resulted in a "catch-22." To one former superintendent, the issue represented "a funny but sad testimony about a simple problem that could have been so simply solved with the managerial experience which was always

available in both the Western and Northwestern Regional Offices." [138]

Ironically, in the fall of 1991, an aging Barker died, in effect solving only part of the problem for the Park Service. With his operation and land for sale, the door is open to an uncertain future. Unless a more effective way to prevent trespass grazing and protect the monument's water supply and other natural resources is found, the situation will continue with Barker's replacement.

CONTROL OF EXOTIC SPECIES

While management of the monument's flora concentrates mostly on mitigating impacts from livestock grazing, control of exotic vegetation has remained an ongoing management issue to address. Numerous non-native plants and plant pests are present at the monument, yet none has warranted the intensive control measures undertaken over thirty years ago with the attempts to exterminate dwarf mistletoe on the monument's limber pines. [139] The Mistletoe Eradication Program at Craters was the first of its kind in Western Region, and both during and after its operation raised substantial criticism from inside and outside the Park Service. Between 1961 and 1967, the program operated in some of the monument's most heavily visited sites and destroyed thousands of trees. It forms one of the monument's most controversial activities, exhibiting the Park Service's changing principles in resource management, those based on manipulation and those on ecology.

The program's antecedents date to at least the early 1940s. In his September 1940 inspection, Forester Edward L. Joy investigated the possibility of control measures for white pine blister rust control on the monument's limber pine and ribes plants. Joy recommended that no control programs were necessary because of a variety of factors such as location, climate, and forest health. Periodic inspections would be enough to prevent any rust advance. In passing, Joy noted the abundance of the mistletoe parasite, pointing out that there were no negative effects associated with it. "A small amount of branch and tree kill by this agent was observed but the usual result appears to be stunting and deformation." What is also insightful is that the forester placed a high degree of value on the limber pine forest. Scenically,

the pine is of great importance as a monotony-breaking cover on the lava and cinder formations....In this capacity its irregular occurrence at from only one or two to possibly 200 trees of all sizes per acre only adds to the interest of the area. The extreme treeless cinder mounds with the appearance of huge [sic], groves of gnarled limber pines adjacent on the lower slopes, and river of barren lava rock below the pines are unique phenomena occurring throughout the area. [140]

A decade later conditions remained mostly the same. On April 5, 1951, pathologist John C. Gynn reported that his sampling of the monument's limber pine and ribes bushes was free of white pine blister rust infection. Concern over blister rust--this time expressed by Superintendent Aubrey Houston--proved to be unwarranted, yet again, mistletoe abundance was noted as the only significant problem. No control was considered in the 1952 master plan draft, because even though the parasite was present, it was widely scattered. [141]

Another decade passed before the Park Service determined that the parasite deserved control measures. On June 7, 1961, in response to Superintendent Floyd Henderson's request, Regional Forester John Mahoney, accompanied by two forest pathologists from the United States Forest Service at Ogden, Utah, inspected the monument's dwarf mistletoe infection in order "to recommend a program for controlling this parasite." They all agreed that control measures were necessary and viable. The "presence of limber pine in this habitat is most

unique. Ordinarily it is found as scattered individuals at timber line or on rocky exposed ridges and knolls surrounded by other coniferous species. Here it grows on cinder cones and barren lava flows and at elevations below other coniferous trees."

Moreover, the parasite was located mostly in dense pockets, and healthy stands of trees could be saved through selective removal and pruning of infected pines. Following the inspection, the team outlined a "modest" control program covering a period of fifteen years for selected sites along the loop drive and Broken Top spur road. [142]

On September 11, Assistant Director Hillory Tolson approved the eradication program. By mid-October Henderson had completed his preliminary survey and cost estimates, and had established thirty-four control stands of varying size, totaling 510 acres and containing an estimated seventy-four hundred infected trees. Ninety percent of the mature trees would be killed. Where natural recovery seemed unlikely, Henderson believed that artificial seeding and planting would be required. [143]

On July 12, 1962, Superintendent Henderson's successor, Merle Stitt, received funding and authorization to carry out mistletoe removal. Regional Director Lawrence C. Merriam advised Superintendent Stitt that the project "should be carried out as experimental in nature," and to this end he recommended that two plots be set aside, one heavily infested and the other free of infestation, to act as standards. In addition, the Park Service was to evaluate the program every three years for a period of twenty-five to thirty years to determine if the program was successful. [144]

Tree removal, however, turned out to be anything but experimental and cautious. During 1962 and 1963, workers eliminated an excess of six thousand trees mostly by poisoning, girdling and felling, in addition to excessively pruning numerous others. For all intents and purposes revegetation failed. By 1964 only fifty-two of the estimated two thousand limber pine seedlings had grown in a Forest Service nursery, thus leaving regeneration to natural processes. [145]



Monument workers prune misletoe from limber pine, ca. 1962. (Photo courtesy Glenn Hinsdale)

Forestry Versus Ecology

Where earlier superintendents had been content, it seems, to condone such a severe program, Superintendent Daniel Davis was not. Davis assumed office during the height of the eradication program, on April 14, 1963. He brought with him a background in both blister rust and mistletoe control projects from other parks; that experience helped cement his cynicism regarding eradication's success. When he arrived, he thought "what a disaster." Slash piles both burning and ready to burn confronted the visitor. [146] Between January 22 and March 23, 1964, Davis engaged in a point-by-point argument with Region Four staff over the mistletoe project, stressing the need for an ecological approach to management rather than manipulative policy.

Believing eradication to be overmanipulation of the resource, he recommended that "a moratorium on aggressive control work should be called until sufficient [ecological] research has been done to justify these drastic measures...." Davis calculated that given the logic of the program, the number of trees already cut, and the number infected the outcome could result in deforestation of the monument. The current forestry practices, Davis contended, simplified the matter by destroying the infected trees. From "an ecological standpoint it is very complex and few if any of the answers are known" regarding the long-term environmental effects of the tree removal program. An ecological approach would fulfill this need. The pines, it was thought, ranged from three hundred to fifteen hundred years in age, and they appeared to have lived with the mistletoe without serious damage for many decades at least, evidence which seemed to counter the justification for the eradication program. To Davis, the situation had reached a crisis point and demanded a new perspective. After all, he asked, "which generation should have preference--this one or one 500 years from now?" [147]

While lobbying to stop the program, Davis continued to oversee eradication of trees. He preferred poisoning (begun in 1963) to felling, which left the "appearance of Attila's wintering grounds." Visitors viewed the unsightly logging operation and the downed trees and slash piles. Burning killed sensitive vegetation on the cinder cones, and logging vehicles left permanent troughs on the slopes. As the lesser of two evils, poisoning left the land looking more natural; the dead trees whitened and appeared as if killed by lava flows. Snags cast a better image than stumps. [148]



As part of the Mistletoe Control Project, slash piles were burned, often in full view of visitors.
(CRMO Museum Collection)

In response to Davis' request for a moratorium and ecological research, Western Region defended its actions and went toe-to-toe with the superintendent over points of scientific knowledge and interpretation, and in doing so denied his request. Assistant Regional Director of Operations Keith Neilson told Davis that the regional office had carefully analyzed the situation. In general, policy came down to a question of activity versus inactivity. Without control measures, it was believed that possibly all rather than some of the trees would be lost. Elimination of infected mature trees would allow younger limber pines to thrive. In the language of the Leopold Report, the limber pine was part of the monument's "natural scene," and it was "the policy and responsibility of the Service to protect and insure the perpetuation of this important flora in at least the limited areas designated for control." [149] Therefore, biological manipulation would provide for the long-term as called for by Davis.

Assistant Director Neilson pointed out some discrepancies in Davis' data as a means to counter the superintendent's allegations. Neilson noted that the control area made up only one percent of the monument's acreage, thus lessening the impact of complete forest loss. He also inferred that Davis was rather naive to think that control measures were unnecessary. Even if the trees had lived with the parasite for one or two hundred years, the latest forest research recommended "some type of management or control." While the regional office agreed that Davis' call for ecological research was a sound suggestion, they foresaw no other approach to the issue. Regional specialists were at a loss to understand the superintendent's meaning of "ecological balance." Dwarf mistletoe might be part of the ecological process, contributing, for example, to the natural succession of a forest to sagebrush-grass ecosystem, but the parasite represented "an even more drastic alteration of the ecology than the control" program itself, something the agency could not condone. [150]

These points are significant not only because they support the denial of Davis' request for a moratorium, but also because they reveal how administrators lacked an understanding of the monument's resources, and how rifts in communication between the regional office and a distant park site influenced decisions. The regional office did arrange for Regional Forester Mahoney to go over the program in person with Davis during a site visit, yet Mahoney, for reasons both personal and professional, avoided encountering Davis on his scheduled inspection. [151]

Davis was ordered to complete the major phase of the program that year, and rather than contest the directive, he capitulated. However, he rejected the notion that he and his staff were less than professional in their concern. "[O]ur thinking is based on what we believe to be solid scientific foundation and not merely the maudlin bleating of a purist based on imaginary principles." Davis stressed that it was important for the regional office to understand that while the control area represented 1 percent of the monument's vegetation, it did represent about 95 percent "of the total vegetated area the visitor sees and uses." He also pointed out that region's plan to replace limber pine with Douglas fir in places where Douglas fir did not grow naturally would alter the monument's flora, perhaps even more than tree removal. These and other aspects of the plan, he maintained, demonstrated the program's lack of forethought and shortsightedness. His pessimism was born out of such distinctions. [152]

Although Davis was not successful in ending the mistletoe program, it was phased out several years after his departure in 1964. No new tree destruction occurred after 1963, for example, only follow-up maintenance and pruning. [153] Regional office officials, Acting Assistant Regional Director John G. Lewis and Forester John Mahoney, pronounced the program a success after separate inspections in 1965 and 1966, citing new tree growth as evidence. Although Mahoney recommended deferring more maintenance work until 1968, Superintendent Roger Contor resisted attempts to begin eradication practices again. Agreeing with Davis, and most superintendents since, Contor thought that the program was "totally stupid." And when drafting the 1966 resource management plan, the superintendent and his

staff insisted "on wording that makes solid research a prerequisite to plant pest control." Monument personnel preferred language that said "diseases or plant pests which threaten major portions of the vegetative cover shall be controlled by methods which do not greatly effect [sic] other elements of the original scene." "We do frankly fear the all-too-common control of this-or-that forest pest which leaves a greater disturbance to the landscape than the pest itself." [154] In this case, the eradication program was the most glaring example, and its continuation was postponed indefinitely, pending an extended period of observation and research. [155]

In December 1967, Superintendent Paul Fritz reported that the Park Service was coming under increasing public scrutiny and criticism for its handling of the mistletoe program, and stated that the program's future would be decided by a current study. Biologist Karl Urban's report on the mistletoe problem at the monument, finished in 1968, demonstrated that eradication had failed to curtail the parasite, and that the trees had been infected more than two hundred years prior to the program. [156] These findings thus confirmed what Davis and others had maintained, that the limber pine were able to live with the mistletoe, and a long-range approach sensitive to ecological processes was the better way to manage the mistletoe infection. Following the report's publication, the program was scuttled.

In the end, Davis' worst fears of total deforestation never came to be. Limber pine have reseeded from the remaining trees, and small trees cover former stands. Nevertheless, ramifications of the project have cropped up as recent resource management concerns. Limber pine snags, the standing dead from the eradication program, present safety hazards, and thus constitute an important focus in the monument's hazard tree program initiated in 1987. The proposal to reintroduce porcupine is also tied directly to the health of the limber pine forest, which is a key habitat for the animal. And there is the potential for two exotic birds, the starling and the sparrow, both of which are currently uncommon, to be attracted to the cavities of the abundant snags for nesting, thus competing with native birds for shelter. [157] Understanding the full ramifications of the mistletoe program, however, may be difficult. It seems clear from Urban's research that an ecological approach would have left well enough alone with similar results. But because alteration occurred, that conclusion is difficult to prove. In the larger picture, mistletoe eradication represented one of the few cases of resource manipulation at the monument, coming at a time when the Park Service was only beginning to incorporate ecological principles into its management actions, and had yet to fully embrace them.

FIRE ECOLOGY AND MANAGEMENT

Fire's history and management at Craters of the Moon are not well documented. While fire is important for maintaining a healthy ecosystem, historically it was not considered in such a positive light. It can be assumed that monument fire policies have followed Park Service trends, beginning with suppression and culminating with allowable burning in recognition of natural processes, with more recent revisions prompted by the Yellowstone National Park fire in 1988.

Early Management

In the first decades of management, fire appeared as a largely insignificant issue at the monument. Most discussion centered on fire as a threat and the need to suppress it. In September 1940, for example, Associate Forester Jack B. Dodd noted that in the past fire posed few problems, but the potential for increased risk existed with increased visitation to the area once the highway was rerouted and paved through the area in 1941. The forester stated, though, that Craters of the Moon's main fire threat stemmed not from forest cover, as

was common in most parks, but from ground vegetation composed of grasses and sagebrush on the lava terrain. Frequent high winds added to the fire danger. [158] Even at that, the vegetative cover was sparse and located in isolated islands separated by vast expanses of barren lava. These two factors made fire a minimal threat to the monument's resources, Regional Director O. A. Tomlinson reported in July 1943. The lava fields acted as a barrier reef protecting vegetation from fires, thus minimizing management concerns. [159] In the monument's more lush northern foothills, though, fire posed more concern, as with the Little Cottonwood Canyon fire in the fall of 1945. [160]

Cooperation in Fire Management

Although fire was not considered a great threat, Craters of the Moon and the Bureau of Land Management signed an informal cooperative fire-fighting agreement in October 1959. Reasons for this were due to the monument's remoteness, its a lack of personnel, and its location next to BLM lands. Initiated during Superintendent Floyd Henderson's tenure, the agreement appears to have formalized cooperation with fire suppression at the monument for several decades. The document called specifically for aid in detecting and reporting fires; it established a "Common Dependency Zone," an approximately one-mile-wide zone on either side of each agency's shared boundary. The two agencies agreed that the first available agency fire crew would respond to a fire in that zone at no charge for the initial fire-fighting period. After 10 a.m. of the day following the outbreak of the fire, if personnel were still required, then the agency whose land the fire was on would reimburse the other for that additional assistance. In the event of a fire on both Park Service and BLM lands, both agencies agreed to either mutually suppress the fire and compromise on costs, or suppress only that portion on their lands, and incur all costs. The agreement also provided for other logistical matters, and is currently in force. [161]

Natural Burning

In the 1966 resource management plan, Superintendent Roger Contor stated a new phase in fire management. Expressing the growing ecological emphasis of the 1960s and the NPS emphasis on "original conditions," Contor's fire policy emphasized the need to allow naturally caused fires to burn. Both the monument's vegetation and its value for ecological research would benefit. Fire was a main determinant in and "absolutely essential" to maintenance of "the mosaic of mixed successional stages in the ecological sere of any pristine area" like Craters of the Moon, Contor stated. The superintendent noted that the combined factors of the monument's sparse vegetation, mostly barren lava terrain, and grass islands within natural lava fire-breaks raised little possibility of fire danger to surrounding areas, to the highly visible areas of the monument, to the monument's man-made infrastructure, and to visitor safety. Such a fire program, however, would only be successful after educating the public and securing its approval for such actions. The plan also mentioned the possibility of using prescribed burning as an appropriate management tool, but more research was needed, and at the time, such a management practice did not appear necessary. As a general rule, remote or wilderness area fires would burn unchecked with some limitations; any threats to the aforementioned would require suppression. On the other hand, human-caused fires would be suppressed. For both the sake of the vegetation and the sensitive volcanic landscape, minimum-impact fire-fighting techniques must be followed at all times. All too often in the past, the "only damage ever caused by fires in Craters of the Moon" came from "bulldozers, roadgraders and other machinery used in non-existent emergencies." [162]

In reality, the superintendent concluded, this "will not change very much the fire behavior history of the area. Most of our infrequent fires flare up and die out independently of man's influences." In addition, this policy might "put us at peace with ecologists who correctly

criticize our inconsistent policies which sometimes destroy, rather than perpetuate, the original scene." Properly presented, the role of fire in the monument could "impress upon the public" the Park Service's "very special mission" at Craters of the Moon. [163]

Wood Fire Ban

The next fire-related policy decision originated in 1974, when Superintendent Hentges decided to discontinue wood burning in the monument. Hentges did so because wood fires were fueled by the dominant tree at the monument, limber pine. Wilderness and auto campers fueled their fires with the trees scattered throughout the monument, and it was evident that this practice could lead to serious impacts. In the wilderness area, limber pines occurred less frequently than in the more developed northern section of the monument. Any depletion through wood gathering or inadvertent fire would diminish their "ghostly" presence and the wilderness experience.

In the campground area it was especially important to discontinue wood burning in order to protect the forty to fifty remaining live and dead pines left from mistletoe eradication in 1960s. The control program had concentrated in the monument's frontcountry, thinning the already sparse pines and making their protection all the more significant. Near the campground, the few remaining trees represented the only wood source, and no matter enforcement or regulations, visitors were slowly eliminating the standing pines as they stripped them for burning. In addition, many of those visitors who complied with regulations found wood along the loop drive for their fires. This latter practice promised only to spread the problem to other sites. [164]

Prior to receiving official authorization to ban wood fires, the monument employed a temporary solution during the 1975 season, permitting wood fires only in the campground, and only if visitors collected the wood from outside the monument's boundaries. Furthermore, plans called for removing any incentive for wood fires altogether by replacing the concrete fire pits with aluminum charcoal grills (completed in 1976). [165] It was felt that both human and natural environments would benefit from this change. At the end of the 1975 season, Superintendent Hentges submitted a draft of the wood fire ban regulation to the Pacific Northwest Regional Director Russell E. Dickenson, who approved the measure on March 1, 1976. In its final format, the regulation called for a ban of wood fires within the monument, except for the north unit group campground (the draft regulation provided for fire at the amphitheater). There the monument would supply wood imported from outside the area for campfires. [166] Even though the monument enforced restrictions on wood fires within the monument beginning in 1976, Acting Superintendent Neil King reported in February 1982 that the regulation had never been published in the Federal Register or appended to the CFR as required by Park Service policy. Thus the regulation, still not codified, has been enforced through voluntary compliance only. [167]

Fire Ecology in the 1980s

In 1980 Superintendent Hentges and his staff turned again to fire and its ecological role in sound resource management operations. Although the 1966 resource management plan stressed the importance of fire, no subsequent research had followed to form the basis of a fire ecology plan. The fire management plan, drafted that year, did not cover any "prescribed conditions for natural burns" and called for fire suppression throughout the monument as the general rule. [168] A year later, Hentges informed Pacific Northwest Regional Director Daniel J. Tobin, Jr. that the monument's wildfire management plan was "proposing prescription burning within the wilderness area." In order to win approval of its wildfire policy, the monument took steps to establish prescription burning guidelines in 1981 through research conducted by the Cooperative Park Studies Unit at Oregon State University. [169]

The research was never conducted and the advances in the wildfire program went unmet.

The 1982 resource management plan underscored management deficiencies caused by total fire suppression, noted the possible benefits of natural fires for vegetation, and emphasized the fact that "little is known about the role of natural wildfire on the various plant communities of the monument." Once the role of natural fire was determined the monument could best manage its flora and fauna. Finally, full suppression in the remote districts of the monument was not economically sufficient. Management boiled down to a question of ecological stability and economic feasibility. The 1982 plan suggested a reformed program of fire ecology, one in which ecological principles and financial costs were key components, as was the desire to emulate and to be compatible with the "fine program" of natural-prescribed burns practiced by the surrounding land owner, the BLM. The main purpose was to create an allowable burn program by researching the fire history and fire ecology in the monument. This would establish the most comprehensive ecological management for the monument's flora and fauna. [170]

The fire ecology program at Craters of the Moon has developed slowly. After an October 1985 fire on BLM land, the monument signed a memorandum of understanding to establish vegetation plots on the burned lands to collect fire ecology data. [171] In 1988 a wildfire ecology study was initiated by the University of Idaho's Cooperative Park Studies Unit. [172] Completed in 1990, the study of both the fire history and ecology at the monument revealed substantial evidence of natural fires at Craters of the Moon in nearly all vegetation types. Reflective of the 1966 observations of Superintendent Contor and his staff, the study concluded that the majority of the monument's vegetation (except for the northern unit) was distributed throughout isolated pockets of lava flows, and that fuel buildups were low. For these reasons, the study recommended that prescribed natural fires be included in the monument's fire management plan; to that end, the document also furnished parameters as a departure point for a prescribed natural fire program, as well as data to be incorporated into the existing plan. [173] With this information and the NPS policy fire policy revisions following the Yellowstone fires, the monument could finally see fire's role in resource management.

CAREY KIPUKA

Added by presidential proclamation on November 12, 1962, the Carey Kipuka is an island of relatively pristine grass surrounded by raw, unvegetated lava. Given these physical conditions, the grassland is fairly well protected from impacts from livestock grazing, and provides an isolated area for ecological research, namely in the form of vegetation and soils studies. The kipuka also offers visitors a better understanding of the different components of the Great Rift, and guarantees the permanent protection of a feature unique to a volcanic environment.

Fraudulent Addition?

The kipuka's management lacks the protracted struggles over trespass grazing plaguing the monument's northern unit, yet the site's addition and management was predicated on the fact that the kipuka contained "pristine" grasslands. Managers learned later that this was not the case and this raised the question of the kipuka's value. [174]

In the late 1950s proponents of the kipuka addition believed that its protection would be an asset to science, since undisturbed grasslands were rare in the West. One of the selling points of the Carey Kipuka was that it possessed nearly "pristine" vegetation. It was remote, dry, and surrounded by jagged lavas, and seemed impervious to livestock grazing and any kind of

"unnatural" biological change. Ecologists F.R. Fosberg and E.W. Tisdale, among other scientists and observers, were aware that calling the kipuka "pristine" was an oversimplification fashioned for the sake of legislation. They admitted that some type of disturbance had occurred through wildlife and Native American activities. They identified, for example, a well-worn and marked Indian trail leading to the grass island. Nevertheless, its value as a research tool was immeasurable compared to more altered sites in the region. [175]

As it was presented for legislation, then, the Carey Kipuka's pristine condition created some ambiguity for monument managers who discovered upon closer inspection that it was indeed disturbed by man and livestock. Visiting the area in the early 1960s, for example, Superintendent Daniel Davis found an obvious trail leading into the site and sheep bones in the grass. His successor, Roger Contor, similarly saw a grassland laced with stock trails, evidence of sheepherder camps strewn about, sheep crossing the lava flows surrounding the kipuka, and even his horse run across the rough terrain. To Contor all of this evidence challenged the integrity of the kipuka and made it a fraudulent addition to the monument. In a sense, the Park Service had lied to Congress, yet for political reasons he decided that it was best not to raise any objections. Precedence was at stake. But in another sense, Contor and other superintendents had to reconcile how the kipuka was presented in the language of the legislation with its value to science. For in a larger perspective, kipukas in the near pristine condition of Carey Kipuka were quite rare. And because of its protective status, the kipuka's value can only grow. In the late 1980s, the Carey Kipuka was nominated for national natural landmark status. [176]

WILDLIFE MANAGEMENT

Contrary to the observations of 19th-century explorers and emigrants, Craters of the Moon's volcanic environment supports a variety of wildlife. Nearly fifty types of mammals and more than one 140 bird species make their homes at the monument. Wildlife management has followed Park Service trends, evolving from manipulation to a more informed understanding of natural processes. Without the predators and therefore the traditional problems of predator control inherent to the bigger parks, Craters of the Moon managers have engaged in little direct manipulation of native animals. Protection programs instead have focused on preventing poaching of the monument's high-profile mule deer herd. Because of its visibility and attraction to both hunters and visitors, the herd has been the predominant wildlife management concern; its protection encompasses issues involving revision of northern boundary, law enforcement, research, and cooperation with other local and federal agencies. Another less volatile wildlife issue pertains to the reintroduction of two extirpated species, one known historically to have existed in the monument, big horn sheep, and the other known to have been actively eliminated by early managers, porcupine. [177]

THE DEVELOPING PROGRAM

As with other phases of the monument's management, wildlife management was largely an unorganized enterprise until the 1950s. [178] While hunting is prohibited at Craters of the Moon, deer poaching has occurred with frequent regularity and has occupied administrative time and energy since the monument's establishment. A central contributing factor has been the northern boundary which follows a grid rather than a topographical pattern along the hydrographic divide. The boundary's "unnatural" location often confuses hunters outside the monument who accidentally cross into and kill an animal on Park Service land. For those less respectful, the vagaries of the boundary provide a good excuse. [179] Besides the boundary problem is the attraction of the well-sized deer themselves. Compounding the problem further is the herd's seasonal migration to the monument's northern unit (with its relatively lush vegetation and water) where it finds sanctuary during the fall hunting season as pressure

on outside lands increases. Although early managers displayed concern for other species, sporadically inventorying animals within the monument boundaries as funding and staffing allowed, they concentrated primarily on preserving the deer herd--patrolling the boundary of the northern unit to inform hunters of Park Service regulations. In doing so, they mostly offered visual deterrence.

A Program in Disrepair

During the war years, even this minimal level of wildlife management decreased. In the fall of 1945, both the director of Region Four and the Washington office believed that the monument's attention to wildlife resources was falling short of Service policy. Regional Director O.A. Tomlinson was unsatisfied with Custodian Guy E. McCarty's October wildlife report, which stated that in 1945 "work in the field of wildlife at this area...consisted of patrol during hunting season, and putting out salt for the deer." [180] Tomlinson objected to the cursory nature of the McCarty's program, as did NPS Acting Director Hillory Tolson. Salting for deer also raised substantial concern. Not only did it run contrary to Service policy, it also introduced abnormalities, concentrating animals in specific areas and resulting in landscape disturbance due to salting and overgrazing. Tolson recommended that McCarty desist from salting, and Tomlinson admonished the custodian for not putting more effort into his duties. [181]

While the directors may have been correct in their assertions regarding Service wildlife policy, the war years had left the monument's administration threadbare. McCarty was the lone permanent employee assisted only by fluctuating seasonal staff who were usually terminated by fall hunting season. Moreover, the war era and gas rationing increased local pressure on the monument's herd. Until restrictions were lifted after the World War II, hunters were unable to range far from home. [182] While the custodian's single-sentence report of October 1945 suggested apathetic management, his wildlife reports did include a significant roster of fauna.

Law Enforcement, Cooperation, and Research

Typifying wildlife problems at the monument, McCarty discovered in November 1946 that many "hunters were receiving information, from around Twin Falls and vicinity, [sic] that the area north of the highway was open to hunting. This required continuous patrol to head them off before they got started." [183] Working in cooperation with the state game warden and county sheriff, the custodian helped arrest two hunters, who were fined in Arco approximately one hundred dollars. [184] It appears that this event represented the first reported law enforcement action at the monument involving wildlife. More importantly, perhaps, is that it signifies roots of cooperation between local and state law enforcement agencies and monument personnel in controlling illegal hunting.

It is known, for example, that Custodian McCarty participated in area law enforcement as a substitute Butte County Sheriff in September 1946, [185] and it is likely that he operated in the capacity of Idaho Deputy Sheriff and Game Conservation Officer, as authorized by a May 26, 1943 memorandum from the Department of the Interior. [186] His successor, Superintendent Aubrey Houston, did become deputized under that directive in October 1951, launching a long-term trend of active and cooperative law enforcement toward poaching. [187]

The policy of seeking law enforcement credentials and cooperation to combat poaching lacked in application what it gained in principle. The monument's small staff was simply unable to keep pace with increasing threats. During the early 1950s, local population grew with the installation of the Atomic Energy Commission's facility in the Lost River Valley,

which in turn expanded hunting pressures on wildlife (primarily mule deer) near and in the monument. While day and night patrols in 1951, for example, netted some illegal hunters, others went undetected or unprosecuted. Reflecting on the 1951 season, Superintendent Houston cited the standard pre-Mission 66 analysis of the monument's administration: "Lack of adequate personnel made it possible for poachers to kill four deer during the last hunting season." Other outside pressures tended to exacerbate management problems as well. The classification change from "special hunt" to "open country" in the adjacent Lost River Range, for example, caused the herd to incur greater stress as hunting blanketed the region for the extent of the season rather than being limited to specific places and periods. But no matter the season, closed or open, Houston concluded, poaching remains a problem, "and frequent patrols are needed to meet this threat." [188]

Even the addition of the monument's first permanent ranger (in spring of 1952), frequent patrols and roadblocks in the hill country near the northern unit did not appreciably end violations by the late 1950s. This led to another cooperative effort: Park Service officials and Idaho Fish and Game Department officers marked the boundary of the northern unit together, posting hunting closure signs on September 29, 1959. [189] The 1960s saw more of the same--night patrols tried to deter spotlighting, and boundary surveys of the Little Cottonwood drainage distinguished Bureau of Land Management lands from those of the Park Service. But more policy changes were required.

Turning to the law, in a February 1964 report, Superintendent Daniel Davis signaled the need for better state and federal law enforcement regulations in protection of the monument's wildlife, especially the deer herd. To that end, Davis contacted the Idaho State Fish and Game Commission "in hopes of getting state hunting regulations pertinent to Craters of the Moon changed to more closely coincide with federal regulations." The loophole at the time stemmed from the fact that while the monument was classed a "'closed area' for hunting it is not a state offense to carry a loaded gun or shoot on the monument as long as a game animal is not killed." As an example, coyotes or mountain lions "could legally be killed as far as the state is concerned." Enforcement was also exacerbated by the monument's distance from the nearest federal magistrate, located several hours from Craters of the Moon, and consuming precious time for a small staff to seek a conviction. [190]

Although the outcome of Davis' attempts to upgrade the monument's wildlife management program is not known, a significant policy highlight took place the following year. In the summer of 1965, Superintendent Roger Contor drafted the Long Range Wildlife Management Plan for Craters of the Moon National Monument. Approved August 16, 1965, the document stated that previous management activities "have been negligible." Rather than highlight legal deficiencies as had his predecessors, Contor instead stressed research as the primary management tool. Objectives of the plan were oriented towards all wildlife in order "to maintain and, where practical, re-establish representative populations of native wildlife and plant communities in a healthy ecological environment which provides each species a reasonable opportunity to perpetuate itself." [191] Expressing the philosophy of "original conditions," as called for in the Leopold Report, the management program would attempt to better understand wildlife, such as deer, through research, and base management directions on relevant and contemporary wildlife studies. In addition, it was determined that the monument's small size was not conducive to harboring predatory animals year round; controls in the grazing country outside the monument thinned the number of predators to the extent that predator management was largely unnecessary. [192]

While the focus was on all of the monument's animals, once more the popular deer herd drew the most attention. Vegetation and population studies were needed to determine range carrying capacity and composition, as well as the growth rate of the herd, which appeared to be on the increase since the area's establishment. Visual observations suggested that

vegetation was suffering impacts from deer browsing--a concern on record since the mid-1950s. [193] And only after proper investigation, then, could resource managers determine appropriate controls. Were reduction required, for instance, Contor decided that public hunting, ironically, would prove beneficial. If necessary, monument and state wildlife personnel could even haze the deer out of the boundaries during hunting season for several days. [194]

Superintendent Contor's recommendations and attempts to initiate wildlife research met with success after his departure. [195] Between April 1967 and January 1968, the first mule deer study was conducted by Brent Ritchie, a seasonal ranger and graduate student in wildlife biology, who carried out his research on his own time. Ritchie's research focused on the population, migratory characteristics, and life cycles of the herd. Ritchie also established permanent range transects to monitor forage growth and use. At most, the study led to a more informed observational management program, from which, it was hoped, more substantial management programs could emerge for "herd and range use controls." [196]

Evidently this type of research satisfied management concerns at the time about the herd's life history and interaction with the surrounding environment. In the late 1960s and early 1970s, population and range issues were all but absent from issues surrounding the herd, and illegal hunting still constituted the greatest threat. For Superintendent Paul Fritz, the best program for mitigating hunting impacts reflected standard policy practiced by the first monument managers--patrol. But to this he added a higher level of public contact, informing both the hunters and the community at large of Park Service regulations and the monument's mission. [197] Good public relations alone, however, failed to curtail violations to a satisfactory level. As stated in the monument's 1972 annual report, enforcement required more legal punch. "A bail-bond system would help mete out justice and could serve as a deterrent to further poaching." [198] The state passed a bail-bond system two years later, and monument personnel welcomed the new measure. [199]

New measure or not, when Robert Hentges assumed the superintendency at the monument in 1974, he and his staff pursued a stricter protection program. Like other managers before him, Hentges upscaled patrols, and completed a northern unit boundary marking program in 1977. [200]

Although he reported early success from this program, Hentges also noted that illegal hunting continued to be influenced by forces beyond the monument's immediate jurisdiction. Hentges remarked that poaching correlated with Idaho's fluctuating hunting regulations. A general opening date for the hunting season, as was the case in the late 1970s, for example, caused less pressure on the monument's deer herd because hunters were dispersed throughout the state--all at one time. Separate openings, on the other hand, staggered the hunting season, and, as Hentges recalled, attracted more hunters to the monument who were looking to bag an "extra" deer before hunting one legally elsewhere. [201]

To counter poaching, Hentges broke with traditional policies and went one step further. His roadblocking and spiking program presents the best example of his quest for wildlife protection. Accessibility constituted a great threat to the herd. When Hentges arrived, poachers were driving onto the north unit on the old road bed of Goodale's Cutoff. To combat illegal entrance from the west, the superintendent stacked rocks and posted more warning signs. Even so, Hentges recalled, determined hunters detoured around them. He executed his most extreme deterrent near the eastern entrance. He ran a cable gate up the hillside closing access to the road. Here, too, he spread signs out along the ridgeline and unused two-track roads warning trespassers of unlawful entrance. It was along these old roads that Hentges buried long, metal spikes mounted in boards. Instead of a hunter, though, the spikes trapped a rancher, who, without heeding orders to contact a ranger first, attempted to retrieve his cattle

from within the northern unit. The act took place at night; the violator lost all four tires, confronted the superintendent with the spikes the next day, and took his case to the sheriff. While Hentges believed he was right, he removed the remaining spikes at the sheriff's request--to avoid public controversy and respect the state's jurisdiction at the monument. But, as Hentges recalled, "word got around, and I never saw another track in the park around our gates." While this might have been an overstatement, the incident indeed proved to be an effective "rumor" for reducing the number of poachers operating out of vehicles, leaving rangers more time to pursue those hunters who entered on horseback or foot. [202]

In the late 1970s, additional personnel also aided in the resource management program and in protection of the mule deer herd. When Chief Ranger Neil King joined the staff at Craters of the Moon in 1978, he replaced a ranger who had not been very effective. [203] King helped establish regular patrols and a formal program of hunter contacts--giving hunters printed handouts of monument regulations outside the boundary. But more significantly, King used his law enforcement knowledge and experience (reflecting the systemwide trend to commission law enforcement rangers) to work with local and state agencies to rectify the poaching issue.

In the meantime, other steps taken to improve herd management involved more research. It was one thing to concentrate on poaching, but while the herd "provided meat and trophies for those outside the boundaries," it had high significance for the monument visitor, according to Hentges. The herd's north to south migrations through the monument provided excitement "for the park visitor who drives the loop drive road in the early morning light....This herd is a major resource at the park and needs to be studied more thoroughly in order to be managed properly in the future." [204]

To this end, the National Park Service and the Cooperative Park Studies Unit at the University of Idaho funded a three-year study in May 1980 to investigate the life cycles and characteristics of the herd. The study, conducted by wildlife biologist Brad Griffith, helped answer questions about the herd's population; Griffith determined that hunting provided a major population control (contrary to past beliefs that dispersal was the reason) as did natural mortality, and to a lesser extent highway accidents. In addition, findings confirmed the north-south migratory pattern, and also proved that the herd dispersed over the monument's entire vegetated range. Finally, Griffith countered previous conclusions that the herd damaged its forage supply. [205]

In terms of management, Griffith recommended ten guidelines for monitoring the herd's population and habitat. Included in these were methods to acquire estimates on herd population size, productivity, and winter survival of fawns. Hentges, while pleased with the report overall, expressed some embarrassment over the recommendations. The monument was unable to review the document prior to publication and had concerns with some of its conclusions; this caused managers, in some instances, to apparently contradict their own policies during consultations with state and federal cooperating agencies familiar with the report.

Hentges called attention to two recommendations in particular that posed problems. The first was the suggestion to develop and implement a prescription burning program for the northern unit, a debatable idea. Other factors besides the deer herd, such as public opinion, planning, and Park Service policy, were involved in this type of policy and further study would be necessary. The second recommendation concerned reduction in road kills during heavy visitation in August and September. Deer were attracted to the visitor center lawns and sprinkling system across the highway from the northern unit, and the report advised that both be removed and be replaced with native vegetation. On this point, Hentges stated that "Visitor use patterns, grounds, maintenance," to name a few things "all must be considered

[first]. To phase out the entire lawn system is not acceptable to park management." [206]

Moreover, the study helped implement two standard operating procedures in the monument's resource management program. Beginning in 1983, population and vegetation monitoring were incorporated into the herd's management. [207] The study also provided the basis for entering into a long-term cooperative agreement with the Idaho Department of Fish and Game. The agreement had been a goal of the research program because the monument is but one agency managing the herd, [208] which migrates through Craters of the Moon. Approved on September 14, 1984, the Memorandum of Understanding Between the Idaho Department Fish and Game and the National Park Service provided for management of the mule deer herd "in recognition of the need for cooperation in the preservation, use and management of wildlife within the Craters of the Moon National Monument and upon adjacent and State lands." [209]

The memorandum crowned a four-year effort, brought about mostly by Chief Ranger Neil King in 1979, who believed that law enforcement was one of the best methods for protecting the herd. Because of the monument's proprietary jurisdiction, the National Park Service possesses only regulatory authority at the monument, whereas the state "has the legal obligation and authority to enforce criminal law in the park." [210] State authority was requisite to properly manage the herd, and impossible without a written agreement. Generally, the agreement allowed monument rangers to enforce state laws and formalized the practice of deputizing rangers as conservation officers. Thus, not only could rangers enforce state regulations inside the monument, but they could also assist state officials outside the area's boundaries. No longer were rangers helpless to stop activities occurring just outside monument borders. Now they were able to issue citations and successfully prosecute cases. The program under the agreement, related Superintendent Hentges, will place the park

in a position to effectively meet our management objects of...maintaining solid data on the deer population that will be accepted by the other cooperating resource management agencies...provide maximum protection for the deer herd while maintaining good relations with hunters along the monument boundaries...more effectively control poaching/illegal killing of deer and...prosecute poachers in the most efficient and cost effective manner. [211]

And for the Department of Fish and Game, the agreement permitted the agency to better fulfill its legal obligations at the monument, while at the same time concentrate its efforts elsewhere. [212] Lasting for a period of five years, the document was reaffirmed on October 26, 1989.

In a historical context, the 1984 memorandum represents a significant wildlife management landmark. While the effort to formalize the cooperation between agencies lasted four years, the process transpired over a longer period of time. Monument officials since at least the 1940s collaborated with state game wardens to protect the monument's wildlife. The agreement also helped to institute active law enforcement, patrols, monitoring, and interagency cooperation as the basis for mule deer management.

In 1987, Superintendent Robert Scott announced successes in herd management. For example, cooperation among the United States Fish and Wildlife Service, Idaho Fish and Game, and the monument resulted in the arrest and conviction of individuals involved in three separate poaching operations outside the area's boundaries. More significantly, perhaps for the first time, no known poaching occurred within the monument. [213] Even so, several citations are issued each season, in or near the monument, for illegal hunting. To date, no real changes are foreseen in managing the herd. [214]

REINTRODUCTION OF EXTIRPATED SPECIES

Several extirpated species have been known to exist within or near the monument, mostly prior to the area's establishment. These were grizzly bear, bison, bighorn sheep, wolves, beaver, and porcupine. Of these only the porcupine lived within the monument at the time of establishment, and was the only animal actively exterminated by the Park Service. Predator control never surfaced as a necessary management issue, and for the most part manipulation of the wildlife population appears to have been minimal. In accordance with Park Service wildlife management trends, however, the reintroduction of certain species has been considered.

Beginning on August 24, 1951, the Park Service expressed an interest in starting a wildlife restoration program at the monument. Earlier attempts, it seems, were delayed by shortages of funding and personnel. In the meantime, the regional office relied on the expertise of monument managers experienced in wildlife research to make up for its lack of assistance. [215]

While no other documentation exists to confirm any restoration activity in the early 1950s, some things about the program's direction are clear. The favored species were not bison, bears, or wolves. Managers considered it impractical to relocate these types of animals within the confines of the small monument and expect them to survive, let alone not interfere with adjacent livestock, threaten humans, or disturb the volcanic features. [216] On the other hand, beaver and bighorn sheep were more popular choices.

On September 1, 1959, Superintendent Floyd Henderson informed the director of Region Four that he was considering the restoration of bighorn sheep and beaver. Conditions seemed favorable to reintroducing these two species at the monument. Henderson cited the discovery of old ram horns in and near the monument as well as the testimony of older residents as to the validity of former bighorn populations in the Craters area. Beaver-cut trees in the drainages of the northern foothills indicated that beavers had also recently inhabited the monument. Good grazing plant species and browse existed within the monument and while the deer herd browsed the vegetated terrain in the north unit, its use changed seasonally. No overgrazing was evident, and Henderson predicted that the bighorn would thrive and neither stress the area's range nor threaten the herd.

As for beaver, Little Cottonwood Creek presented the ideal place for reintroduction. It supported a variety of trees and brush--aspen, alder, willows, and chokecherry--as well as an abundant water supply. All told, several beaver colonies could live in this drainage. Henderson justified bringing beaver back into the monument, stating that other drainages in the vicinity were home to "small beaver populations, whose dams hold back freshets, permitting the streams to run during the drier months." The species would not interfere with the monument's administrative supply, situated above treeline and sustainable beaver habitat. Flooding would pose no problems for roads, and would in fact form ponds the monument could use for suppressing fires. [217]

In response, Region Four solicited Field Research Biologist Adolph Murie to analyze the feasibility of the Henderson's proposal. Murie, after visiting the monument in the fall of 1959, concluded that reintroduction was ecologically impractical. The monument was simply too small to support the proposed introductions. Murie agreed with Henderson that the native vegetation of grass, sage and bitterbrush could support sheep as well as mule deer, but only if the sheep numbers were few. Furthermore, containing the sheep within the monument posed another problem, since the species migrated to higher ground. Therefore even if the sheep remained within the boundaries, the "ecological relationships would be cramped and artificial

and would probably require detailed management. They would tend to be a showpiece rather than part of a satisfactory ecological situation." Reintroduction of beaver posed similar ecological problems. Certainly, habitat existed in the mile-long stream drainage, but the food sources were limited. Murie noted that willow would likely increase with beaver ponds, but that other sources would be "sacrificed" in the process. In all, he recommended against reintroduction, because the beavers would most likely "eliminate their food supply." In both cases, Murie suggested that the monument instead concentrate on the significance of its flora. In the West, where overgrazing predominated, "it is especially pleasing to observe the flourishing bitterbrush and other species growing in the monument." Thus the monument's vegetation was better left "growing under current conditions." [218]

Based on Murie's conclusions that reintroduction would cause "cramped and artificial ecological relationships and the destruction of the limited amounts of available forage," Regional Director Lawrence C. Merriam turned down Henderson's proposed reintroduction program on October 19, 1959. [219]

Reintroduction resurfaced again, however, in the mid-1960s. Following the Park Service emphasis on wildlife management restoring the frontier scene, Superintendent Roger Contor, in both his 1965 wildlife management plan and his 1966 resource management plan, recommended introducing and encouraging several mountain prairie mammals. The wildlife program, for instance, recognized the possibility for the natural reintroduction of pronghorn and wapiti in the monument. Their migrations into or near the monument had been observed for the last half decade, and policy recommended cooperating with State Fish and Game officials "to guard against the erection of barriers to this migration." Managers foresaw no range problems since animals' migration through the monument would be short. [220]

By far the most effort went into the reestablishment of bighorn sheep. Contor, a trained wildlife biologist, favored reintroduction. Neither the management plans mention Henderson's previous attempts in this direction, and most likely, the recent change in Park Service resource management policies superseded prior decisions. Justification for bringing back sheep, however, echoed Henderson's 1959 proposal. The historic scene of the late 19th and early 20th centuries, for example, included bighorns in the Craters of the Moon region. Yet by the time of the monument's establishment, the bighorn sheep's sensitivity to livestock diseases wiped out the resident populations. Marshalling evidence Henderson had not, Contor noted that Robert Limbert's 1924 National Geographic article mentioned bighorn remains in the southern area of the Great Rift. Furthermore, in 1949 the last known sighting of a bighorn sheep occurred three miles from the monument. And in May 1965, a weathered ram's horn was uncovered on Sunset Cone. Contor also conjectured that depressions retained in cinder cones and the presence of Indian rock hunting blinds near waterholes suggested that either bighorns or mule deer were present and hunted within the monument during the dry summer season. [221]

Unlike Henderson's proposal, which seemed to concentrate on the northern unit as home for the animals, Contor proposed restocking sheep in the then-named Tutimaba Wilderness. [222] The wilderness provided the ideal habitat for the species--precipitous terrain, isolation, and sufficient water and forage. As before the only competition came from mule deer. After succeeding in the southern section, officials could distribute the bighorns to other sections of the monument. Contor cited federal agency and Park Service planting efforts as providing the necessary criteria for the project, and had approached several agencies about acquiring a nucleus herd.

With the approval of the wildlife management plan in August 1965, the Park Service endorsed the reintroduction program. The regional office was pleased with Contor's management plan and highlighted its reintroduction program. In the spirit of the times,

Acting Assistant Director John Lewis exclaimed, "Your efforts when implemented will unquestionably restore to the greatest extent possible the early frontier scene." [223]

Contor pursued the program following approval of his management plan, broaching the subject with John Woodworth, director of the Idaho Department of Fish and Game on September 24, 1965; any reintroduction would involve Woodworth's department either directly or indirectly. The state bureau's only recommendation was that the Park Service assess the possible impacts bighorn sheep would have on the monument's deer herd. According to Brent Ritchie's 1968 study, the monument's vegetation in the central and southern sections was in near-pristine condition. [224] Because of this, Fish and Game research biologist James Morgan, who was in the process of initiating Idaho's first bighorn transplant in the Pahsimeroi drainage, suggested reintroducing sheep at the monument. Poor range conditions throughout Idaho were contributing to the bighorn's rapid decline. And if the monument proved to be a suitable habitat, reintroduction would help "to perpetuate a rare and beautiful animal...." [225] Superintendent Paul Fritz welcomed Morgan's proposal and consulted regional office specialists in April 1969, but unfortunately available records reveal nothing else on the matter, and presumably the reintroduction program was scrapped for the same reasons presented in 1959.

Yet the subject of reintroduction surfaced again in the 1980s. On July 25, 1983, research biologist Brad Griffith, while working on his study of the mule herd, notified Superintendent Hentges that transplanting sheep was still an unlikely proposition. Griffith put forth two reasons. First, like Murie, Griffith cited that the migratory nature of bighorns for winter habitat was incompatible with the small monument. A planted herd might not return, and fencing would prove costly. Second, the greatest obstacle stemmed from susceptibility to livestock diseases. The porous boundary and adjacent grazing lands, as well as the bighorn sheep's social behavior and migration habits all but ensured disease contraction, transmission, and the mortality of the reintroduced herd. [226] Heeding this advice, the monument decided against reintroduction; both the Fish and Game Department and the Bureau of Land Management concurred. As the 1983 resource management plan stated, from a conceptual standpoint reintroduction was favorable, but from a scientific and common-sense view, it was not. It would be too expensive and cause too much resource manipulation--for example, by adding stress on the mule deer herd--and ultimately fail. [227] Ironically, while no policy change has arisen since 1983, one bighorn ewe entered the monument and was sighted in Devil's Orchard on July 12, 1990. [228]

While bighorn sheep may never grace the monument's landscape again, porcupines might. At one time these animals were common at Craters of the Moon, yet their feeding habits threatened the monument's "scarce" trees. Believing that trees such as the limber pine deserved the "utmost protection," Assistant Director Horace Albright declared the porcupine a "predatory animal" and recommended that "instructions be issued to the custodian of the Monument to kill these animals on sight." Thus during the late 1920s and early 1930s, custodians routinely killed porcupines. [229] Their extermination reflected the "good versus bad" wildlife management policy practiced by the Park Service early in its history. In this case, trees in the apparently barren landscape were the favored biological species. Another contributing factor to porcupine demise most likely originated with mistletoe eradication conducted in the early 1960s. More than six thousand limber pine were destroyed, and along with them some important porcupine habitat. As the most recent resource management plan states, these anthropogenic activities were probably the cause of the porcupine's decline. Whereas wildlife reports from the 1940s and early 1950s document small numbers of porcupines within the monument (or evidence of them), the last porcupine was sighted in the monument in 1980; the wildlife baseline inventory conducted in the early 1980s recorded none.

The rationale to reintroduce the porcupines stemmed from the recommendations of this baseline survey. Furthermore, wildlife management philosophies have changed since the first custodians destroyed these animals. The limber pines, once at a critical stage, have shown an increase since the 1960s' program. Except for the pines, the rest of the porcupines' habitat has remained intact. That they are found near the monument further supports their reintroduction. With more research, the Park Service planned to pursue porcupine reintroduction in the early 1990s, and should this occur, it would be the first corrective program in wildlife management undertaken at Craters of the Moon.

WATER RESOURCES

Craters of the Moon's desert environment makes water scarce. Aridity characterizes the landscape, and management focuses on protecting the scattered water sources--perennial cave ice, snow, and waterholes--that occur naturally throughout the volcanic terrain. Providing water for visitors and the monument's administration forms another concern.

ICE AND WATERHOLES

The random appearance of water, snow, and ice in lava depressions throughout the monument provides a unique contrast to the otherwise dry and hot environment most visitors encounter in the summer season. Winter snow deposits collect in lava crevices, such as spatter cones, and the formations' insulating qualities cause the snow to last all year in places. Ice forms in caves. Some of this frozen water, it is thought, creates surface and subsurface pools. And all forms of water are valuable not only for human appreciation but also for wildlife. Most of the monument's wildlife cluster around these sporadic sources.

To date, management of these water resources has not followed any strict policy guidelines other than NPS protection mandates. The critical management concern has arisen over their disappearance. Up until 1927, the waterholes supplied visitors and managers, but after 1927, water vanished from this supply; most of the well known holes went dry (Registration, Doves, Big Sink and Yellow Jacket). As late as the mid-1960s, others such as Round Knoll appeared to be at a low ebb. [230]

In his 1966 resource management plan, Superintendent Roger Contor suggested a more active management position regarding the waterholes. It was necessary to prevent human and livestock consumption and impact from contaminating the waterholes and contributing to their further decline. Protection of the resource and human health was imperative. The plan recommended that a specific regulation prohibiting use was a possible means of management, yet it was never pursued because federal regulations satisfied this need. Furthermore, like caves the remote location of many of the waterholes served to protect them. [231]

Research has been the preferred mode of management. As Roger Contor noted, the greatest threat to the waterholes was the unknown. Yet while monument managers awaited sufficient studies, management decisions have been in response to resource disturbance, based on observations rather than solid research. The most significant among these dates to Superintendent Hentges' late-1970s decision to rehabilitate the spatter cone chain due, in part, to the disappearance of snow in the vents. The accumulation of rock and other debris thrown by visitors had raised the base level of the features, and snow, exposed to higher temperatures and sunlight, melted sooner and rarely lasted as long as in the past. [232]

Except for historical documentation from the 1920s and 1930s furnished by early custodians concerned over the decreasing level of the water pools, no other hard evidence exists regarding water quality and the source of water for springs and waterholes, or for the Snake

River Plain Aquifer, running beneath the monument. To rectify this, the monument began studies in 1992 to assess the chemical and physical properties of the surface water, ice caves, and groundwater in the monument. [233]

ADMINISTRATIVE SUPPLY

In addition to the waterholes, the administrative water supply is critical to the management of the monument. Since the 1927 water loss, the Park Service worked hard to develop an adequate water supply for the monument. As a result, the monument was expanded in 1928 to include the foothills of the Pioneer Mountains and the watershed of the Little Cottonwood Creek drainage. And a water system was completed in 1931 tapping the surface water of the four springs at the creek's headwaters. It was hoped that the system would provide the monument an adequate supply, and management since then has sought to protect the springs and watershed from impacts such as livestock trespass. Thus, the present concerns with the water supply are to maintain water quality and supply. Contamination, drought, and increased demand present the greatest management challenges and over time have instigated the most policy decisions.

Following the water system's development, a wire cyclone fence was constructed by the Civilian Conservation Corps to enclose the springs in December 1938. [234] The impetus behind the project was the livestock use of the northern region, even though the new grazing policy regulated this activity. Due to the nature of the terrain, snow conditions, and fence material, the fence did not last long, collapsing under the weight of drifting snow. [235]

The absence of suitable protection for the supply raised concerns about surface contamination in the early 1940s. At that time a health inspection determined that spring number four was too contaminated to use; unlike the other springs, this one was located at the bottom of the draw and collected runoff, causing the water to be muddy. The spring was abandoned in April 1948. [236] Officials did not determine the cause of contamination; livestock impact, while a concern, was not a proven source. Periodically, Craters of the Moon managers attempted to rehabilitate the contaminated spring. In 1959 and 1960, for example, Superintendent Floyd Henderson's administration attempted corrective measures that failed to remove contamination from surface runoff. [237] Continuous treatment was the only solution, and the monument achieved this result with the rehabilitation of the water system in June 1960 as part of the Mission 66 program, at which time the spring was tapped once more.

Solutions for water quality problems were interwoven with solutions for livestock trespass in the northern unit. In this regard, Superintendent Everett Bright in his 1956 Mission 66 prospectus posited several approaches. The first and most long-lived was to fence the hydrographic divide; the second was to switch to well water and avoid surface contamination; and the third, and favored solution, was to remain with spring water and alter the northern boundary to include the west branch of Little Cottonwood Creek. [238]

Although no urgent need to act on these proposals arose, the notion remained alive. In the mid-1960s, Superintendent Contor pursued a boundary readjustment, similar to Bright's proposal, stating that while the monument enjoyed an adequate water supply at the time, protection constituted the greatest problem. Unfortunately negotiations broke down to both exchange lands and fence the divide. As a result, Contor's plans were not implemented but resurfaced with future management decisions by Superintendent Robert Hentges. In 1975, Hentges again called attention to the protection of the springs and watershed for the familiar reason of livestock impacts, causing, perhaps, expanded water treatment. In his November 11, 1975 report on pollution hazards regarding the springs, Hentges noted that potential contamination existed, primarily in the form of the Barker sheep operation and the

uncontrolled drifting near the springs. Thus as part of his effort to protect the northern unit from sheep trespass, Hentges' 1977 fencing project helped mitigate impacts to water quality. [239]

Transpiring around the time of the fence's completion was the drive to locate a new source of water. In 1977, the monument embarked on plans to drill a well in the northern section. The plans marked a resurgence of needs foreseen by Mission 66 planning. Hentges believed that a well site tested in 1977 could replace the springs by 1979, leaving the original springs as a backup system. In 1980 the well was activated and tested, but it was still not ready for service. The following year, when ready, it was found that the new well lacked sufficient water flow, perhaps as the result of a watertable change. [240] This situation forced the monument to revert to using the springs. Due to rehabilitation of the system, however, including better chlorination and pipe repairs, the monument cut past water losses, and the supply met the necessary demand. [241]

Superintendent Robert Scott continued the attempts to secure a new source of water. In 1986 Scott pursued plans to drill a second well that could possibly complement the first one and together supply enough volume. Health officials (as in the past) and Environmental Protection Agency regulations stressed that well water would ensure a safer supply than surface water. In addition, it would give the monument a backup source in case of drought and other environmental changes. Drilled in 1991, the second well failed to supply the hoped-for volume. [242]

The conversion to well water arose at the same time as the state of Idaho's Snake River Basin adjudication. In the mid-1980s, Idaho began assessing the quantity of water required of the Snake River System, and the somewhat ambiguous state of federal water rights. Whereas private and municipal water users, for example, had to define the amount they used, federal reserves, such as national parks, did not. Withdrawn from the public domain, parks reserved the right to surface and subsurface waters for the minimum amount needed to satisfy their purpose. Yet Idaho's general stream adjudication forced the National Park Service to assert "all reasonable legal bases for securing water necessary for the conservation, maintenance, operation and present and future enjoyment of National Park System...units in that state." [243]

For Craters of the Moon, this meant producing evidence of its claim for reserved and appropriated water rights to the state on February 28, 1986. In general, the Park Service's Water Resources Division claimed undiminished rights to Little Cottonwood Creek, Little Cottonwood Springs, and one unnamed seasonal stream for the monument since they originated within Park Service land. As for ground water sources, the Park Service claimed rights for the purposes of "quantifiable present and future administrative uses (consumptive)...." [244] Essentially, the agency was affirming the monument's claim to its past, present, and future water uses and needs. During negotiations, the state at first only recognized the monument's surface rights granting "beneficial use," while withholding rights to the perched aquifer in the northern foothills. The state took this position because the springs were specifically mentioned in legislation expanding the monument in 1928, and because the monument produced, after a somewhat arduous search, deeds and water rights to the former private lands in the northern unit. Less was known about the monument's perched aquifer, it seems, and for this reason the state was reluctant to accept the monument's claim. [245]

However in May 1992, the state of Idaho signed a water right adjudication agreement with the Department of the Interior, recognizing the monument's claims for surface and subsurface water rights in the northern unit. In the agreement, Craters of the Moon has reserved rights to the perched aquifer and is able to defend it against any incompatible outside uses. The

agreement also allows the monument to tap the deep aquifer of the Snake River Plain but not defend it. The question of quantifiable use has also been addressed; the monument's maximum diversion per year is 54.5 acre feet, and maximum consumption per year is 19.9 acre feet. At this point, the document is still subject to adjudication and, pending final outcome, change. [246] It is possible that the Craters of the Moon's adjudication could set a precedent for water rights in national parks. [247] One certain thing about any water issue is that it reflects the differences between political boundaries and ecosystems.

AIR QUALITY MANAGEMENT

Throughout the course of Craters of the Moon's history, resource management issues have emanated from the physically tangible: rocks, trees, grass, and water. The last two decades, however, have advanced a less tangible issue--air quality. Air is a ubiquitous resource; its clarity forms an important part of the visual experience, the perceptions of place as well as space. Likewise, it forms an important measure of the condition of other resources at the monument; polluted air can impair and deteriorate not only visibility, but also vegetation, soils, and water. At the monument, visibility degradation and gaseous pollution have increased in recent years from a variety of sources, both local and regional. Even so, the monument's airshed is relatively pristine, and the management focus is to establish a baseline inventory from which to measure decline, to practice a preventive rather than reactive course of management, and to cooperatively study, monitor, and regulate air quality with the appropriate state and federal agencies.

Air quality, perhaps more than any other issue at the monument, underscores the fact that parks are not islands of pristine environments removed from resource threats common outside their political boundaries in a 20th-century industrialized society. "Air pollution," as David Joseph of the National Park Service's Air Quality Division has written, "can travel hundreds or thousands of miles and respects no geographical boundaries during its voyage." [248] This insight is particularly relevant for the monument's isolated location. Remoteness has contributed to the assumption by many managers that the area's air quality was pristine, with only windborn dust and smoke marring the resource. [249]

This opinion stems from the monument's first air quality testing. On November 12, 1956, the United States Department of Public Health, out of Denver, Colorado, set up a National Air Sampling Network Station at Craters of the Moon--in order "to obtain air samples in a typical wasteland area." [250] The monitoring station was set up to detect airborne particulates, and the monument functioned as a basis for purity. In February 1957, Superintendent Everett Bright reported that "Apparently the air at this place is pretty pure--so pure in fact that we have now been requested by the U.S. Public Health Service to operate our air sampling station...30 times the normal requirement [which] is necessary to find if some evidence of air pollution exists." [251]

PROGRAM DEVELOPMENT

As a management objective, air quality was not mandated until the amended Clean Air Act of August 7, 1977. In addition to protection accorded in the NPS Organic Act of 1916, the Clean Air Act provided one of the most significant pieces of legislation for safeguarding air resources in park areas. Section 160 of the act applies to federally managed areas, the purpose of which is "to preserve, protect and enhance the air quality...." The act defined "class I" areas as those lands in parks over six thousand acres and national wilderness areas in excess of five thousand acres, existing prior to the passage of the act. The legislation established strict requirements for managing these airsheds, whereby the Park Service was responsible for protecting "air quality-related values...from adverse impacts." In addition, the clean air

legislation set forth a national goal of "remedying existing and preventing future visibility impairment in class I areas." To meet these objectives, the act directed states to cooperate with federal managers, and to incorporate into their air pollution control program policies which would aid in the protection of class I areas. [252] As a result the Park Service has become involved in a number of air resource management projects, including monitoring and research, interpretation, planning, and regulatory activities at the local, state, and federal levels.

At Craters of the Moon, the Clean Air Act designated the Craters of the Moon Wilderness area as a class I airshed, the remainder of the monument as class II, and charged the superintendent and staff with the responsibility of maintaining air quality values and preventing impairment. Thus, management of air resources at the monument has increasingly centered on fulfilling the act's requirements.

Atmospheric Monitoring and Data Collection

Impetus for air quality management grew during Superintendent Robert Hentges' administration, as a result of both the clean air legislation itself and regional developments. During the late 1970s and early 1980s, expansion in regional population and industrial development throughout the Upper Snake River region prompted an increase in utility plants, and thus the deterioration of air quality. Along with these plants, other threats included fires, agricultural practices (burning fields, wind blown soils, pesticide use and fertilizer production), and auto traffic.

Cooperation in air visibility monitoring at Craters of the Moon marked the first steps in air quality management and predated both the clean air legislation and the increase of regional pollution. In 1973, for example, the monument, in cooperation with the State of Idaho Air Quality Monitoring Program, began collecting Total Suspended Particulate (TSP) samples. Similar to the 1950s data, the low-level readings attracted national attention to Craters of the Moon's clear air. (But this did not mean it was clean air). At this time as well, the monument initiated the operation of a National Oceanic and Atmospheric Administration (NOAA) weather observation facility. [253] Beginning in October 1980, Craters of the Moon managers broadened the fledgling program, and entered into a cooperative agreement with the Bureau of Land Management to gather atmospheric deposition samples for acid rain, the monument being named an official National Atmospheric Deposition Samples (NADP) sampling site. [254] What needed to be developed and implemented was a visibility monitoring program. To this end, a manually operated telephotometer was installed in 1982 on Sunset Ridge, and collections began in the summer of 1983. [255]

The monument's 1982 resource management plan chronicled these advances in the air quality program and set down the management philosophy: Managers should recognize that threats were on the increase and therefore should assume that air quality could only get worse. To protect the class I area, atmospheric monitoring and baseline data collection were paramount. The policy embraced early detection and corrective action to avoid severe impacts to flora and fauna and mitigate possible resource losses. Cooperation with other agencies was essential. [256] Finally, it seemed, Craters of the Moon was taking the lead in an area of resource management, rather than allowing the issue to become an afterthought.

THE IDAHO NATIONAL ENGINEERING LABORATORY

The main source of pollution--and thus a focal point for cooperative management efforts--was the Idaho National Engineering Laboratory (INEL). Formerly the Atomic Energy Commission's National Reactor Testing Station established in 1949, the site lies

approximately twenty-five miles east of the monument. INEL, a veritable industrial giant administered by the Department of Energy (DOE), employed in the early 1990s about eleven thousand people, civilians and military personnel, and supplied nearly 5 percent of Idaho's jobs. Of the reservation's thirteen subcontractors, one alone currently employs thirty-five hundred workers. In addition to its financial and political role in the region, INEL's activities--such as "nuclear research, nuclear fuel processing, and nuclear waste storage/management"--are highly sensitive, involving in some cases the Department of Defense. They also pose a potentially high risk to the monument's and southern Idaho's air as well as environmental quality. Originally, fifty-two reactors were built at the site. Today, thirteen are in operating condition. The facilities on the reservation have more than eight thousand emission stacks, one thousand of which, it is estimated, might be pollution sources. Moreover, up until the mid-1980s, INEL held that its work on national defense projects exempted it from compliance with federal environmental regulations, such as stipulated in the Clean Air Act. [257]

The first major threat to the monument's air quality from INEL began in 1980, when INEL started the construction of a coal-fired steam power plant; it was completed in 1984 and began operation by virtue of a Prevention of Significant Deterioration (PSD) permit secured from the state of Idaho. Pollution threats mounted. In 1986, INEL applied for and later received another PSD for the operation of the Idaho Chemical Processing Plant located within the reservation. Other permits and development loomed on the horizon along with what appeared to be murky air. [258]

Given these circumstances, the threat to Craters of the Moon's air quality appeared overwhelming, and the situation seemed to be getting worse. Updated visibility monitoring equipment was introduced at the monument in 1985, and photos taken from an automatic camera targeting the vistas of Big Southern Butte and the Caribou Mountains revealed that visual clarity was deteriorating. This conclusion countered results of the TSP testing, which indicated that the monument's air quality was pristine, when compared with the rest of the continental United States. [259] Gaseous pollutants also posed a growing concern in the mid-1980s as yellow smoke plumed on occasion above the INEL plants. And an August 13, 1985 ecological study by James P. Bennett, ecologist for the NPS Air Quality Research Branch, concluded that limber pine, chokecherry, and aspen were showing some signs of fluoride and ozone damage. [260]

Bennett's findings sparked the monument's interest in more research, and as reported in the 1987 resource management plan, the trend in air quality was toward increased background pollution, which resulted not only in reduced visibility but also in degradation to sensitive flora, fauna, and other biological resources. Thus, the plan underscored the importance of engaging in gaseous monitoring and baseline data collection to establish current conditions and measure change. [261] Doing this would complement the visibility program and balance the management program in general.

Up until this point, advances in air quality management did not occur in a vacuum; the monument's small staff worked hard to collect and understand the data, in what was for many of the small staff a new field of study. Robert Hentges' administration, for instance, established much of the visibility monitoring program, and Superintendent Robert Scott's administration attempted to have a gaseous pollutant monitoring system installed and, perhaps more importantly, attempted to shape an air quality management plan. The issue for Scott was twofold: the monument should function as a laboratory of pristine air and provide state and national agencies with background information, while at the same time it should meet the goals of the monument's mission by serving the interests of science and education. [262] Success in both cases meant taking an active rather than passive role.

To meet this challenge, in August 1987 Scott and his staff embarked on a program to collect and assimilate a decade of data into a usable format for resource management and interpretation, in compliance with regional office and Washington office directives. [263] This emphasis meant initiating research, educating resource managers, and entering into negotiations with state and federal agencies for cooperation in meeting clean air standards. Cooperation, generally speaking, meant interacting with INEL. Prior to 1987, relations between the monument and the engineering laboratory were informal, the installation of a 1973 radionuclide monitor by the Department of Energy marking the only substantial evidence of interagency contact. [264] Of particular importance in forming a relationship was the controversy generated over INEL's request for a modified PSD permit for its Chemical Fuels Processing Restoration Plant. The conflict led to an interagency meeting, initiated by the Park Service, to exchange information about the pending permit and the plant operation. The meeting brought together officials from the Air Quality Division in Denver and Craters of the Moon met with representatives of the Idaho National Engineering Lab, the Department of Energy, and the state of Idaho Division of Air Quality. [265]

As Scott reported, 1988 proved to be a year of significant accomplishments, largely as a result of establishing working relationships between Craters of the Moon, DOE, and the state of Idaho. For example, these respective agencies set in motion an air management plan, "a new concept," and the first such "document produced for a class I NPS management area." The plan was also the first collaboration of the NPS' Air Quality Division, the state of Idaho, and DOE (INEL). An important achievement, Scott noted, was not so much the drafting of the plan's background section but the groundwork and relationship it established between the Service and these state and federal agencies. Another positive result of cooperation was the influence the Park Service (CRMO) exerted in having its own requirements for gas, NO_x, and other emissions reflected in the PSD permit issued that year for the Chemical Fuels Processing Restoration Plant. Scott hoped that this kind of influence would serve to protect the monument's airshed and establish a precedent for similar future negotiations. [266]

In addition to Scott's work, cooperation benefited from the work of Chief Ranger Neil King, who concerned himself with air quality issues at the monument and nurtured a relationship with INEL. He entered into the somewhat overwhelming field of air quality control and nuclear physics in 1981, encountering the formidable institution of the Department of Energy. And by the late 1980s, his "education" and contacts were paying dividends. INEL also assumed a more cooperative position after internal changes occurred in the Department of Energy, and in response to the agency's tarnished public image regarding environmental issues. Around this same time, for instance, a DOE study revealed that Craters of the Moon deer thyroids contained levels of I-129 that were 12 to 15 percent higher than anticipated, especially startling since the monument was the study's control site. [267]

Along with dialogue struck between the agencies, other benefits included DOE's contribution and maintenance of a meteorological monitoring station at the monument, installed and operational in 1989 with the assistance of NOAA. [268] The cost of installment and initial operation were \$40,000 and the annual operational costs were \$6,000, all of which attested to the high cost of air quality management and the significance of cooperation. Yet issues traveled in myriad bureaucratic channels, often confusing and complicating the monument's attempts to manage its airshed. The tenets of radionuclide pollution and the technical nature of INEL's projects often went beyond the Park Service's realm of expertise, making it a challenge sometimes to understand what was happening at all. In other cases, government agencies seemed to be working independently of each other. In 1989, for instance, Idaho established a INEL Oversight Program to provide "an independent source of unbiased information regarding INEL's impact on public health and the environment." In spite of this, the monument has been unable to attract this agency to its meetings with INEL. [269]

Responding to these conditions, a 1988 study in which visitors rated both clean and clear air as high priorities, and the discovery that INEL had applied for more than a dozen PSD permits, Superintendent Scott declared a more aggressive approach. Scott contacted the Idaho Department of Environmental Quality voicing concerns over the state's shortcomings in visibility management, or its lack thereof. In Scott's opinion the monument's airshed--despite the absence of long-term data--provided sufficient evidence of visibility deterioration, and it could only be assumed, but not proven, that there were biological impairments as well. [270]

Therefore, given this "standard" he proposed a formal network, as opposed to the existing informal one, between the Park Service, state, and INEL to deal more efficiently and systematically with the permit process, the conditions of monitoring and levels of emissions. He also proposed an interagency workshop to discuss these issues, and the formation of a work group to collectively review the permits. Most importantly, he advocated that the state, along with federal agencies, develop a long-term air quality management program for southcentral Idaho. In this way, all parties involved would operate under the same guidelines. Finally, Craters of the Moon within a year and a half would develop its own air quality management plan, which would include the active participation from both the state and DOE. In general, advocacy of a formal working relationship recognized that "merrily stating our good intentions to work together will not necessarily produce results." Only a structured approach could adequately deal with the complex issues of air quality. [271]

Craters of the Moon, in its more aggressive role, was trying to address the issue head on. In 1989 monument personnel held several meetings with INEL, gaining DOE's recognition of Craters of the Moon's air quality concerns, and signed an agreement to form a "Southern Idaho Air Quality Work Group," whose main goal was to develop an "interagency monitoring strategy for the area." Progress in air quality cooperation occurred, for instance, when INEL opened its doors to Park Service personnel, and, in a separate meeting, when DOE briefed monument staff on updated PSD permits, and provided a description of its activities. These encounters helped establish quarterly meetings between Craters and INEL. Meanwhile, the state, which had expressed the desire to cooperate but had not done so effectively to this point, also displayed a more cooperative stance. It involved the monument's resource management staff, as well as the Air Quality Divisions in Denver and the Pacific Northwest Regional Office, in the review process of two PSD permits, and for regional goals in air quality. [272]

The central issue facing Craters of the Moon's air management program by 1990 was the creation of comprehensive baseline data collection, covering visibility monitoring, gaseous monitoring, and biomonitoring. As Superintendent Scott related in March of that year, the working relationships with the relevant state and federal agencies involved had progressed adequately enough for the management program to proceed to another level. Threats to the monument's class I airshed were continuing to grow. The proposed Thousand Springs coal-fired power plant 150 miles southwest of the monument provided an important impetus for documenting the airshed's relatively pristine condition. Scott believed that the "window of opportunity for the collection of pristine data is fast fading--the clock is ticking and we are at the eleventh hour." In a March 3, 1990 memorandum, the Park Service strongly objected to the plant's operation without more stringent emissions controls on behalf of Craters of the Moon and other park units in the region. [273] Yet still missing was the monument's capacity to monitor and analyze both gaseous and particulate pollutants. Scott advocated that the monument move beyond reviewing PSD permits. Otherwise managers were fighting a losing battle. The Park Service had been aware of the monument's pristine air for a decade, yet, he stated, the lack of proper documentation jeopardized both proactive management and the resource. [274]

The following year, the monument's program advanced significantly in this direction. In

February 1991, Craters of the Moon and the Department of Energy reached an agreement to jointly fund and operate a gaseous pollution monitoring station at the monument. INEL originally proposed the station in 1989. It offered to fund most of the operation, supplying the equipment, analysis, and structure, if the monument could provide supplies and personnel to operate the station. At the time, Craters of the Moon was understaffed and underfunded, but with assistance from the Air Quality Division, the monument was able to take advantage of INEL's offer two years later. Monitoring was scheduled to begin in October 1991, and the position for a seasonal air quality technician was created. [275]

By the early 1990s, the program still faced an immense amount of work. INEL had yet to install all air quality monitoring systems. An air quality management plan had been postponed because of constraints of time and staffing. Instead, the emphasis was on detailed project statements for visibility monitoring, gaseous monitoring, and biomonitoring. Overall, relations with other agencies seemed positive but, as with all government agencies, subject to change as new personnel and new initiatives direct the separate bureaucracies. On the one hand, the Park Service and INEL signed an interagency agreement for air quality monitoring at the monument in 1991. On the other hand, relations with the state Air Quality Bureau seemed rather tenuous. State participation in air quality planning for the monument is important, yet the bureau, while helpful overall, has remained noncommittal regarding Craters of the Moon's needs. Furthermore, Idaho has not defined its position very well, lacking, for example, a state implementation plan to address visibility. In the absence of a visibility monitoring program of its own, the state uses permit standards to regulate air pollution in its negotiations with INEL. [276] In a political sense, this places the monument between the Department of Energy, a powerful force in the state, and the state itself, primarily responsible for air management activities in Idaho. Finding a common ground might be difficult. To do so requires that Craters of the Moon joins in air quality planning with these respective agencies--the polluters and the regulators--using well-documented evidence of the health of the monument's air and biological resources to influence air quality management in the region. And even then, there are no guarantees. [277]

EXTERNAL THREATS: SOME PAST AND PRESENT CONCERNS

MINING

Craters of the Moon National Monument lies adjacent to historic silver mining districts in southcentral Idaho. The Lava Creek Mining District, of which the northern unit was a part, boomed in the late 19th and early 20th centuries. The mining towns of Era and Martin, located near the Pioneer Mountain foothills at the monument's northern boundaries, thrived and died with the silver market. Their legacy and the presence of precious metals or other natural resource commodities in those mountains have formed the heart of administrative concerns. And, as with other controversial topics, the Park Service inherited mining issues with the 1928 expansion. Although a time-consuming task for managers has been the settlement of mining claims and operations inside the monument, operations and explorations outside the monument have presented potential threats as well. [278]

Throughout the first several decades of the monument's existence, the Park Service attempted to gain title to all mining claims in the northern unit. In some instances it was successful and prevented further encroachments by mining operations. [279] But it was not until the late 1960s that the agency ended the longest-running mining operation at the monument, the Martin Mine. The mine operators were able to maintain their claim, it seems, by operating on a very low scale; in fact, it is not certain how much, if any, ore was mined after 1928. When the operation's final claim was purchased in July 1967, the monument then turned to managing the remains. [280]

The buildings and mine shafts remained intact until the early 1980s. At that time, Superintendent Robert Hentges cleared a program to return the site to its natural conditions. In 1981, the Park Service determined that the site had no historical significance and did not pose safety hazards, and consequently monument employees burned and removed remnants of the Martin Mine structures and filled the shafts sometime in the mid-1980s. [281] A shallow man-made pond, structural fragments, and three piles of mine tailings still impact the landscape. Revegetation projects of the site, while attempted, have proven unsuccessful possibly due to the heavy metals in the soil and tailings, and bare ground marks the past. [282]

EXTERNAL MINING THREATS

Whereas the monument can control internal impacts from mining with the resolution of private claims, it faces a more difficult task with mining activities occurring outside its boundaries and their potential impact on the monument's resources. External threats from mining elevated in 1986, when mineral claims filed by large mining corporations in southcentral Idaho increased, numbering in the thousands. Several of these were filed, Superintendent Robert Scott reported, "directly adjacent, as close as 100 feet, from the monument boundary." [283]

Near the northwestern corner of the monument, the Silver Bell Mine was located some five hundred feet from the border, and has seen exploratory and preparatory activity two times since 1986. Of great concern more than five miles northeast of the monument is the Idaho Gold Corporation gold and silver mining and heap leaching operation at the Champagne Creek Mine, because of the toxic chemicals used in the leaching process. In addition, exploratory drilling has taken place twice within the last five years in the Big Cottonwood Creek Canyon west of the northern boundary. The most recent test site approached within three quarters of a mile from the boundary. In 1989, NPS Mining and Research Branch geologists inspected the mining activity in the monument's vicinity and concluded that the issue was long-term. "With the increasing interest in disseminated, low-grade gold deposits amenable to leaching, it is likely that there will be continuing and probably increasing exploration and mining activity in the Pioneer Mountains." [284] Sending this message home, a recent survey revealed that within a mile of the monument's northern border there were 184 lode claims and four mill site claims, and within two miles, 284 total claims. [285]

Mining, overall, presents a continual problem for monument managers, but one that as yet has not caused any severe impacts. [286] Resource management objectives continue to focus on revegetating the abandoned Martin Mine site, and, more importantly, perhaps, to focus on maintaining good relationships with the BLM, and to monitor mining activities as they occur and affect the monument. Modern mining operations present a complexity of potential problems (erosion, air pollution, vegetation and wildlife disruption, and traffic) should all of the current activity evolve into genuine mining operations. Even though the monument has secured ownership of all lands within its borders, this does not ensure proper protection of the area should mining occur just outside its boundary. Fluctuations in the international silver market rather than the integrity of the monument's resources and their preservation seem to govern the future of this issue. [287]

LOST RIVER ELECTRIC COOPERATIVE, INC.

In the spring of 1966, Superintendent Roger Contor faced a potentially volatile issue. The Lost River Electric Cooperative, Inc. (REA) requested a right-of-way permit to construct two and a half miles of overhead power lines across the northwest corner of the monument. The

purpose was to provide service to residents of the Fish Creek area; the lines were to follow the old Arco-Carey roadway, which the monument still maintained as a fire road. Contor's position was that protection of the monument's natural landscape was the priority in any discussion of development. For this reason, he stipulated that the powerline must be placed underground. The advantage to the Park Service, besides maintaining the resource, was that the cooperative would construct an underground powerline to the proposed Little Cottonwood Creek campground site. [288]

In April, however, the REA balked at the Park Service's request, citing prohibitive costs at underground construction through the lava terrain. Instead, the cooperative again requested an overhead route, this time transecting the northern unit, directly through the proposed campground, interfering with possible interpretation of the lava plain, and following the general route of Goodale's Cutoff. Contor objected to this route. It would have obliterated the restoration of the natural scene completed in the fall of 1965, when monument staff removed an abandoned telephone line running along the cooperative's proposed route. Moreover, damage to "the natural and historical scene" formed a far more critical factor than the cooperative's economic argument. As a counter measure, the superintendent submitted an alternative proposal to the REA board, whereby the line would pass through the monument's extreme northwestern tip. There the treeless terrain possessed better digging conditions, and a high ridge would screen the overhead lines. The overall distance was shorter, the costs for both sides were less expensive, and it was generally more practical. [289]

Committed to the protection of the monument's natural and cultural resources, Contor held firm in his negotiations. He understood that politically he had no choice in the matter; a powerline would go through one way or another, especially since the area was not wilderness, and that the groups involved could achieve their goals through a state congressman. The situation, in fact, escalated to a congressional inquiry. Fish Creek residents set the investigation in motion after the REA informed them they would get no "electricity unless the line can be forced through the Craters." This situation painted the Park Service "rather black," Contor reported. At a May 11 meeting with angry Fish Creek residents and the REA, the superintendent diffused the situation.

Apparently, hostilities were born out of miscommunications and misconceptions about the powerline. As it turned out, the Fish Creek group was unaware of the superintendent's proposal, and REA officials had never actually inspected the alternate route--or for that matter left the highway to survey the ground at all. After assuring the Fish Creek residents that the Park Service did not oppose construction of the powerline, and showing the REA representatives the alternate route, the superintendent resolved the conflict. On May 16, 1966, the cooperative voted for the alternate route, and the monument stood ready to issue a special-use permit. [290] In the end, Contor believed that a potentially negative situation had turned into a public relations coup. [291]

OVERFLIGHT NOISE

An element of the modern age, the jet engine, with its ability to propel planes beyond the speed of sound, constitutes a resource management at Craters of the Moon. Air flight noise invades the solitude visitors expect in the wilderness and overall impacts the visitor's experience at the monument. Overflight noise has also conflicted with monument management programs, interfering with sensitive equipment used for, and causing the discontinuation of, seismic monitoring of the Great Rift in the mid-1980s. The primary reason that Craters suffers from air flight noise is that a military training route, eight nautical miles wide, crosses the northeastern edge of the monument. Most of these flights are undertaken by the military, originating from Mountain Home Air Force Base and the

National Guard post near Boise, Idaho. In May 1982, Superintendent Robert Hentges, a member of the Federal Executive Association, broached the subject with both the Base and Wing Commanders of the Mountain Home Air Force Base. Hentges was successful in pleading his case and reported later that most of the military aircraft were avoiding the monument boundaries. [292]

Hentges worked to establish a good relationship with the military regarding this issue. That situation evidently lasted through the next several years. In September 1987, Superintendent Robert Scott stated, that although the last five years had seen major reductions, military overflights still constituted an issue, with at least six per month. [293] Part of the reason was that communication had deteriorated after Hentges' departure in 1984, and that this form of management was time-consuming in order to achieve results. By 1991, a resource management project was proposed to reestablish communication with military officials to express NPS' concerns, and to establish a program to document monument overflights. [294]

CULTURAL RESOURCE MANAGEMENT

Cultural resource management pales compared to natural resource programs at Craters of the Moon. This condition stems primarily from the monument's informal designation as a natural area. Its enabling legislation specifically cites the volcanic landscape as the central importance of its existence; human resources receive no mention. Without a specific legislative mandate, Craters of the Moon's staff tended to overlook cultural resources in favor of natural resources. Presenting the monument's small staff with a difficult task in managing cultural resources was the fact that little was known of the area's human history. Moreover, monument managers whose professional training and convictions did not align with cultural resource management goals curtailed development of a program, as did low budget priorities at both the monument and national levels for cultural resource management in natural areas. [295] Although Craters of the Moon's natural area classification overshadowed its cultural resources, it should be noted that from the monument's inception cultural resources have occupied a place in the management programs. Archaeology and history are the two main subjects, and over the decades have evolved into a developing cultural resource management program. And future investigations in these fields should enable the monument to "discover" another layer to life in the volcanic landscape.

Until recently, one of the major assumptions about human history at the monument was that there was little of it and therefore little to manage. The environment was simply too extreme to attract or support people of any cultural period for any expanse of time. But explorers and scientists such as Robert Limbert and Harold Stearns reported finding scattered Indian artifacts in or near the present monument in the early 1920s; custodian reports also mention the discovery of Indian artifacts, ranching equipment, and moonshiners' operations all within the decade following the area's creation. [296]

While these were somewhat random samplings, the Park Service recognized the monument's cultural aspects in the late 1930s. Following the passage of the 1935 Historic Sites Act, the agency paid more attention to the known cultural resources at Craters of the Moon and their potential management. The Branch of Historic Sites, for instance, noted in its August 23, 1939 comments on the monument's master plan that the area contained "Indian caves, Indian mounds, remains of Indian dwellings, and the feature called 'Indian Tunnel.'" These, as well as other Indian sites, were significant enough to warrant the investigation by an archaeologist, and the inclusion of these "prehistoric remains" in the monument's educational and interpretive program. In what would be an understatement fifty years later when a comprehensive study had yet to occur, the commentary concluded that "an archaeologist may not be available for this work for some time, but it is felt important enough to put on record the need for such a study." [297]

History formed the next stage of the developing program. At the behest of Custodian Guy McCarty, Regional Historian Olaf T. Hagen visited the monument to assess its ethnographic, archaeological, and historical background in June 1940 for part of the area's interpretive program. Hagen, while he did witness some archaeological sites, could not comment conclusively as to their importance. He did state, however, that in historical terms the monument's significance was regional, not national, since the monument had been established for reasons other than its historic features. Moreover, he identified the Oregon Trail branch, Goodale's Cutoff, as an important attribute, although "subordinate to the natural features of the Monument." The route provided historical background for the monument. At the time, preservation of an Oregon Trail section was unique in the System, and the historian planned further research. Hagen also met with and interviewed some old area residents, whom McCarty had knowledge of, regarding the early history and establishment of the monument. He advised McCarty to continue interviewing these individuals as part of the monument's history program. [298]

As with many other areas of management, the war years reduced cultural resource management activities. More than a decade later, another initiative for archaeological and historical research got underway with McCarty's successor, Aubrey F. Houston. Houston actively pursued having an archaeological survey conducted at the monument in 1952, based on similar projects slated for Yosemite National Park and Lava Beds National Monument. Funding never appeared. The superintendent also expressed an interest in investigating the monument's history. He had begun to collect materials and planned to compose a short history himself in response to Director Arthur Demaray's 1951 administrative history initiative. Yet the time frame for completing the studies was open ended; there were few guidelines, none at the time for monuments, and so the project was delayed. [299]

In 1954 both the Washington and regional offices infused the history program with new life with a "short history" initiative. [300] Two years later, Ranger Robert Zink completed the first and most comprehensive history of the site to date. A "Short History: Craters of the Moon National Monument" compiled the natural, human, and administrative histories of the area in a series of small chapters. The study was broad, general, and, from an academic point of view, informal. Zink's detailed information represented his own investigations of the monument and Park Service records. Its greatest value lies not so much in its definitive research as much as it record of events, for which documentation in some cases no longer exists. Zink's chronologies of the monument's development, photographs of the area's physical layout prior to Mission 66 and key monument personnel, and series of staff biographies provide an invaluable resource for initiating any research on the monument. [301] Overall, the study represented a great stride in the evolution of the management of the monument's cultural resources.

In 1956, Superintendent Everett Bright's prospectus for Mission 66 did not include cultural resources as significant to the monument's mission; however, it did state that historical research was important because so little was known, save what Zink had accomplished, and necessary to boost the nascent interpretive program. The document mentioned investigating Robert Limbert's material--held then by his family--as a likely avenue of research. Yet while it recognized that other periods of history were important to examine, it gave them a low priority because of the "barrier theme"--the fact that most people avoided the area. [302]

The interpretation that the natural environment deflected human contact with Craters of the Moon held firm in the monument's administration. Subsequent management plans, for instance, demonstrated a slow but changing perspective of cultural resources. Because management and research were needed in all areas, natural resources, such as geology, received primary emphasis (funding). Superintendent Floyd Henderson's Mission 66 development plan, for instance, considered geology and biology as the central facets of the

monument's management, for it was an area untouched by humans, and therefore cultural aspects were all but absent from management goals. A decided change occurred, though, during the early 1960s when the Park Service began planning for the monument's first archaeological survey.

As with other aspects of management, the survey was slowed by delays. Although Western Region had received a proposal from Idaho State University to conduct the survey in April 1960, six years elapsed before a study was launched. Regional Archaeologist Paul J. F. Schumacher delayed the research because the Park Service considered a member of the university's archaeology staff, Robert Butler, a "persona non grata." "We in this office will have nothing to do with Butler on any of our projects," Schumacher stated. The department head, Earl Swanson, was well respected by the agency but was expected to retire soon and be replaced by Butler, a controversial move within the university itself. Superintendent Daniel Davis, trained in archaeology and eager to initiate archaeological research at the monument, agreed with Schumacher. In a May 22, 1964 memorandum to the Regional Director Edward A. Hummell, Davis strongly recommended the postponement of the project for several years until "the turmoil and uncertainty" in the archaeology department was over, or the monument received a proposal from another university. [303]

The situation had apparently been resolved two years later when Idaho State conducted the first and, at present, only archaeological reconnaissance of the monument. [304] Swanson still headed the university's archaeology department, while Butler was absent from the scene but not from the department's faculty. Thus part of the resolution seems to have been an agreement that Swanson would direct the study and that Butler would have no part in it. The importance of conducting a study seems to have also contributed to the resolution. As expressed in Superintendent Roger Contor's 1966 resource management plan, the theme of "original conditions" valued human history for itself and, more so perhaps, for what it could reveal of the condition of the monument's natural resources prior to establishment. [305]

Paid for with a thousand dollar grant from the monument's natural history association, the study was conducted from June 7-June 30, 1966 by Paul G. Sneed; it attempted a broad survey of archaeological sites within and near the monument's borders. Sneed restricted his investigation to terrain most likely to support humans: water courses and climax vegetation. In both his preliminary report of 1966 and his published report of 1967, he identified twenty-eight archaeological sites in the monument's vicinity. Sneed concluded that occupation and utilization of Craters of the Moon by early humans was minimal, given the amount and type of cultural material found and the extreme environmental conditions. He also determined that the principal occupants of the monument were Northern Shoshoni. These findings confirmed past assumptions, which Sneed expected. What was unexpected, in a sense, was that he cracked the "barrier" myth. By employing an ecological perspective, he revealed that humans traveled across the northern section of the monument and along the Great Rift in a north-south direction; the very presence of sites and other evidence such as trails supported this assertion. While the study was an important step, from an administrative standpoint it was only a preliminary investigation. Without excavation, no clear understanding of cultural development within the monument could be achieved, and therefore, no adequate management. [306]

Over the next several decades, management programs documented the presence of archaeological and historical sites and the necessity of conducting more cultural resource research, yet little advances were made. [307] The 1966 National Historic Preservation Act caused no action at Craters of the Moon; Mission 66 razed most structures which could have been eligible as historic sites in the 1970s. [308] Nevertheless, protection of historic features was executed as a part of resource management. One good example can be seen in Roger Contor's prevention of powerline construction along Goodale's Cutoff in the spring of 1966.

In this respect, the Oregon Trail spur owned the status as the only "historic" site within the monument, a site without proper documentation or management guidelines. This status was altered when Goodale's Cutoff was nominated for the National Register of Historic Places on May 1, 1974. [309]

Protection of the trail, as with those known archaeological sites, was more a matter of circumstance than active management. Goodale's Cutoff transected the northern unit, which was classified as a restricted area, and archaeological sites lay in remote sections of the monument, seeing minimal or no public activity. Superintendent Robert Hentges stated in an October 31, 1978 memorandum that monument policy was adequate and in need of no change; no future impacts were anticipated, and any development would comply with environmental assessments and statements. Hentges, it seems, was basing his opinion on recent archaeological inspections in the northern unit, one for a private study and the other for a construction project, which concluded that most archaeological remains were scattered and on the surface and that further investigation would most likely reveal nothing new. [310]

The 1980 amendment of the National Historic Preservation Act, Section 110, added new impetus to cultural resource management in natural areas such as Craters of the Moon. The legislation specifically required federal agencies "to inventory, evaluate, nominate to the National Register, and protect cultural resources under their jurisdiction...." [311] Reacting to other NPS directives and the creation of the Cultural Resource Management Division at the Pacific Northwest Regional Office in 1982, Superintendent Hentges and monument staff initiated proposals and projects for a historic resource study, an archaeological study, an administrative history, and collections management. [312]

Yet the monument's defacto classification as a natural area continued to place it at a disadvantage in terms of funding for cultural resource studies. As had occurred before, though, monument personnel took the initiative. Park Interpreter David Clark, for instance, started collecting historic materials and conducted oral interviews with older, neighboring residents in an attempt to build on the foundation begun in the mid-1950s. Through funding from the monument's natural history association, Craters of the Moon contracted to have a brief historical overview written by Michael Ostrogorsky in 1983.

Ostrogorsky's research renewed interest in Robert Limbert. Ostrogorsky discovered a large collection of Limbert's papers, photographs, and memorabilia in the possession of his daughter, Margaret Lawrence. Limbert was the most exceptional of the few individuals associated with the monument and its establishment; his collection provided not only a key to unlocking the history of the area but also of Idaho in the early 1900s. Beginning in the summer of 1983, the monument embarked on a project to have the Idaho State Historical Society acquire and catalogue the Limbert materials. A year later, unable to come to terms with the historical society, Margaret Lawrence donated the portion of the collection relating to Craters of the Moon to the monument. The monument inventoried and catalogued this part of the collection the following year. Lawrence, through the assistance of the monument, eventually donated the rest of the collection to Boise State University. In the interest of preserving the sensitive objects of its collection and in contributing to research, Craters of the Moon then loaned its Limbert materials to Boise State University in 1986, completing the collection and assuring its preservation. The work surrounding the Limbert collection formed a benchmark in the monument's emerging cultural resource program, and attested to the historic value associated with Craters of the Moon, Idaho, the West, and the nation. To honor Limbert, the visitor center was renamed for him in 1990. [313]

Works by Zink and Ostrogorsky, the Limbert materials, and the 1966 archaeological survey were the only sources informing cultural resource management as of the mid-1980s. [314] Other matters bolstering cultural management included oral histories, the donation of Harold

Stearns' field notes from the early 1920s, and recent historical research on Goodale's Cutoff and the Snake River Plain. The appearance of a cultural resource management plan in 1982 established another benchmark. Although the plan underlined the fact that archaeological and historic data were scarce, it was a plan nonetheless, establishing priorities for a complete cultural resources inventory, the development of museum management guidelines, and the improvement of the museum collection. Only once the cultural record had been documented could those resources be adequately protected and interpreted.

By the late 1980s, the most significant accomplishment in this direction was the completion of a five-year museum collections project in 1987. Other progress was achieved with the completion of an archival project in 1988, undertaken by the cultural resources division in the regional office. The project collected materials pertinent to the monument's administrative history. [[315](#)]

Meanwhile, as revealed in the most recent resource management plan, cultural resource projects were still largely unmet, but this area of management had established its place. Half of the eight programs proposed to focus on managing the monument's collections--one of the most significant problems being the lack of proper storage facilities and space. The other half proposed to complete a cultural resource overview of the monument, to finally assess through historical research how to manage sites such as Goodale's Cutoff and to complete a thorough study of the area's archaeological resources. In addition, the monument's few remaining structures more than fifty years of age have yet have to be evaluated for their historical significance. At least one superintendent considered the log restroom and warehouse, built in the 1930s, "antiquated" and in need of replacement. [[316](#)] The future appears bright for these projects with funding scheduled for them beginning in fiscal year 1992.

[<<< Previous](#)

[<<< Contents >>>](#)

[Next >>>](#)

CRATERS OF THE MOON

Administrative History



Chapter 7: RECREATION MANAGEMENT

In his 1918 letter instructing National Park Service Director Stephen T. Mather on how parks should be managed, Interior Secretary Franklin Lane wrote that "Every opportunity should be afforded to the public, wherever possible, to enjoy the national parks in the manner that best satisfies individual tastes." This philosophy enabled Mather to encourage mass use of national parks and in doing so win wide support, yet at the same time it forced the Park Service to address the dilemma inherent in its mission--how to reconcile the "agency's role as the preserver of the great scenic places with its role as a provider of recreation opportunities to much of the American public." In short, preservationists worried that high tourism would diminish the wilderness values of parks, while tourist groups sometimes protested the lack of adequate facilities and, by association, lack of recreational opportunities in national parks. Attempting to please both sides, the Park Service steered a middle course. [1]

At Craters of the Moon, recreation management has attempted to do the same by allowing visitor activities that are compatible with the monument's founding purpose. Overall, management embraces outdoor activities such as camping, hiking, picnicking, skiing, biking, and cave exploration. Most of this takes place within the monument's developed section; however, Craters also offers primitive recreation in its expansive wilderness and backcountry areas. While recreation rarely elicits management conflict, visitor use of any sort within the monument, as detailed in other sections, requires mitigation policies. Likewise, external recreational developments--potentially adjacent to and beyond the control of Craters of the Moon--demand equal attention for their possible interference with the visitor's experience and resource qualities.

Given the monument's volcanic terrain, desert environment, and small area of development, most visitor recreation has been concentrated around the loop drive and the features located along it. The monument's landscape lends itself well to daytime activities, the predominant use, for the most scenic sites and formations are easily seen within several hours by car. Without the popularity of the automobile and the advent of modern highways, it is unlikely that tourists of any time period could have visited or enjoyed Craters of the Moon on a large scale. This is not to say that all were alike. Tourists during the monument's first decades were required to be more adventurous than their later counterparts; to see some of the natural phenomena, they had to hike into the interior, later accessible by extensions to the loop drive. Except for the intrepid Robert Limbert and other explorers and scientists like him, the majority of visitors toured the monument along the primitive loop drive, and picnicked, camped, or, beginning in the 1930s, spent the night in the Craters of the Moon Inn. Sightseeing was the most popular activity, as visitors circulated among the outstanding natural features, engaging in small excursions and drinking in the vistas.

SKIING

In the late 1930s and early 1940s, downhill skiing and other winter sports activities grew in

popularity at the monument, as area residents slid down snow-covered cinder cone slopes during winter months when Craters was closed. [2] Skiing compelled the Park Service to establish its first recreation policy regarding the development of winter sports facilities at Craters of the Moon. The Arco Civic Club asked the National Park Service, on August 5, 1941, for permission to build a winter sports facility on the northeastern slope of Sunset Cone. The club felt that the cone's proximity to the highway and the eastern boundary, and its lack of scenic qualities associated with the "main attractions" elsewhere in the monument would not interfere with the area's mission. The cinder hill, from this perspective, was far more valuable for recreation. [3]

The request caught the agency off guard. The monument's master plan carried no provisions for winter sports development, and Acting Regional Director Herbert Maier expressed reservations about granting this type of program at all, citing prohibitive development and maintenance costs. [4] The agency left the situation to Custodian Guy E. McCarty. The following summer McCarty reported that at first the civic club thought the Park Service should construct a ski lift in order to attract more visitors. McCarty informed the group that it was not NPS policy to lure visitors with constructed "attractions." Undeterred, the Arco Civic Club next hoped to install its own ski lift at the site, and owners of a rope tow, operating on private land just north of the monument, voiced an interest in moving the lift to and constructing a small-scale operation on Sunset Cone. McCarty favored development of some kind to accommodate the ski resort's supporters, a group of monument boosters from the Arco and Lost River areas who were just seeking "a place to get out for recreation," during a period when alpine rather than nordic skiing was the preferred sport. [5]

Regional Director O.A. Tomlinson made it all but impossible for the civic club to create a winter sports facility at the monument without overtly denying the proposal. Tomlinson stated, as had McCarty, that NPS policy was not to attract visitors with man-made features, but rather to showcase natural phenomena, and this philosophy applied to Craters of the Moon. More importantly, the regional director noted that a February 1940 winter-use policy decision by the Park Service emphasized that no developments should impair an area's scenic values, and that the entire proposed facility would have to be dismantled each season in order to comply with agency policy. In the case of Craters of the Moon, he agreed to award a permit only if the operators did not clear the slopes in any way and if they removed their buildings and equipment each spring. He also urged the operators to seek another site, which would be less expensive for all concerned. [6] No discussion of development continued after Tomlinson's decision; McCarty issued no permit, and no facility was established. Despite the civic club's impression, the monument's scenic qualities prevailed over the perceived need for recreational developments.

For a time, the sport of choice was snowmobiling around the loop drive, until Superintendent Robert Hentges ended the activity in the 1970s, finding that it was harmful to the delicate cinders if the snow machines wandered off course. The energy crisis of the early 1970s also contributed to this trend, and more traditional winter sports, again, gained in popularity. To conserve fuel, managers no longer plowed the loop drive to Devil's Orchard, yet Superintendent Paul Fritz observed that cross-country skiers and snowshoers would likely take advantage of the snow-covered road. [7] In the mid-1980s, Superintendent Robert Scott began promoting a cross-country ski program at the monument. The intention of the program was to provide groomed trails for skiers. [8] Furthermore, Scott explained that the "purpose of this service is to provide a method for winter visitors to use and enjoy the park. As the roadway is not kept snowfree from mid-November through mid-April, there is little opportunity for park visitors to explore beyond the visitor center except by traveling over snow." [9]

By the 1987-1988 season, the program lay in its incipient stages; a donated snowmobile and

grooming equipment allowed monument managers to lay down tracks along the loop drive. Around one hundred visitors skied the trails. The following season use increased, and the monument charged a \$2 user fee, and the Interpretation Division provided a free activity and safety handout for skiers. Winter skiing at the monument had a long history, yet this was the first time park staff had engaged in such a program. Still considered in its initial stages of development as of the early 1990s, the winter skiing service has continued to be a popular winter program. [10]

WILDERNESS/BACKCOUNTRY MANAGEMENT

While most recreation takes place within the monument's small developed area, a small amount of recreation takes place within the monument's large undeveloped area. Eighty percent, or 43,243 acres, of the monument's land base is wilderness, while another approximately 18 percent, or 9,287 acres, is considered to be backcountry--an undeveloped natural environment. [11]

Established October 23, 1970, the Craters of the Moon Wilderness Area had encountered some turbulence in its creation, none of which, however, influenced its smooth management. No pressing issues confronted the environment; designation affirmed the "backcountry" management classification affixed earlier to the remote region of the monument. As one of the first two NPS areas with a designated wilderness area, Craters of the Moon was breaking new ground in management. Yet the wilderness classification altered little in past management practices, and the most significant administrative concern revolved around setting down a wilderness management policy--based largely on the pattern of low backcountry visitation.

Wilderness, or backcountry, management predated the formal creation of the monument's designated wilderness area. After proposing the southern portion of the monument for wilderness classification in May 1965, Superintendent Roger Contor established a number of guidelines for managing the area based on a philosophy of primitive recreation. All use required minimum impact practices, a policy still adhered to today. One of the first actions was the closure of the area to vehicle traffic with the erection of a barricade "on the old fire road at Coyote Butte." As Contor noted, the "Tutimbaba," the proposed name, was "as untrammelled and pristine as any wilderness in the United States." Its natural resources were "almost completely unchanged by the influence of man." And evidence of Native American use was "abundant." "Like other wilderness areas," he predicted, "it will offer Americans a chance to escape civilization and enjoy a world where man is only a passing shadow." [12]

One of the most important management considerations was to "retain the solitude, the wildness, and the opportunity for self determination," the superintendent noted. Thus, "we plan to install no trails (other than about 1 1/2 miles of the old fire road), campsites, self guiding interpretive exhibits or identification signs." The visitor's only guides would be a wilderness pamphlet, describing the environment and regulations, and a topographic map. Furthermore, the monument would encourage overnight campers "to use backpacking stoves...rather than campfires, to minimize fireplace and axe scars at the more popular stopping points. All litter and refuse should be carried out just as it was carried in--on the owner's back." [13]

The harsh environment of the lava country, Contor believed, dictated this management direction. Its heat and aridity contributed to a primarily day-use visitation pattern, with few overnight users, and low visitation overall; less than one hundred visitors ventured into the wilderness annually in the mid-1960s. Those who hiked the primitive backcountry tended to be more experienced and practiced low-impact camping techniques, and therefore caused

little resource deterioration.

Policy, then, focused on prevention of future impacts. Contor's 1966 resource management plan embodied these principles and the guidelines he had established the previous year. The plan stressed day use over the more disruptive overnight camping with its attendant "camp sites," fires, trash, and resource erosion. Overnight use would be allowed through a free permit system, whereby campers would be directed away from significant and delicate natural features. Along these same lines, the superintendent advocated prohibiting overnight horse use, if necessary, due to the stress horses imposed on the sparse waterholes and vegetation, as well as unique volcanic formations. Because wildlife depended on the scattered waterholes, whose levels seemed to be on the decline, campers and horses were not to use them. In addition, stagnant water posed a human health risk. No special provisions were necessary, though, since the holes were difficult to locate in the lava expanse. As for developments, the plan held to earlier guidelines, stating that the monument would neither build nor maintain trails, adding that numerous wildlife trails and easy topography negated these amenities. Only camping zones rather than formal campsites would be designated, with fires restricted to specified sites. The most important aspect of management, perhaps, centered on visitor education and safety information disseminated through pamphlets; primitive trail signs would show the way, and ranger contacts would ensure, as much as possible, visitor as well as resource protection. [14]

Superintendent Paul Fritz and his staff drafted the first backcountry/wilderness management plan in 1972. This document as well as the subsequent 1976 plan written by Superintendent Robert Hentges reflected much of Contor's guidelines; one stipulation was that stock use was limited to forty horses per party. As in the previous decade, visitation still hovered around one hundred overnight users and governed policy--in that there was no pressing need to institute changes in the program. Hentges offered, though, a few revisions to Contor's standards. To emphasize and increase the day-use pattern and at the same time simplify wilderness access, Hentges built a spur trail from the Tree Molds Trail to the main wilderness trail in 1976; along with entrances at Buffalo Caves and Broken Top, this extended wilderness access to three locations. [15] Overnight campers were still managed through a permit system, yet the Hentges' policy did not call for designating or assigning campsites, or restricting use near specific features. Rather, rangers would take the initiative and suggest sites to camp. Hentges also prohibited wood fires altogether in the wilderness, as part of the monument's fire policy in force by 1976. A main concern involved future visitation trends and wilderness carrying capacity, yet low use and minimum impacts characterized the situation in the mid-1970s. Hikers did not penetrate deep into the wilderness. It was expected that use at some point would increase, but slowly, causing no immediate threat. [16]

As implied by both the 1966 and 1976 policies, wilderness was nearly self-managing. The central factor was the amount and type of use, and until both rose dramatically, policy remained the same. The wilderness area's hostile environment and popularity of adjacent Forest Service recreation and wilderness areas, with their less extreme conditions, operated against a dramatic increase in backcountry visitation. [17]

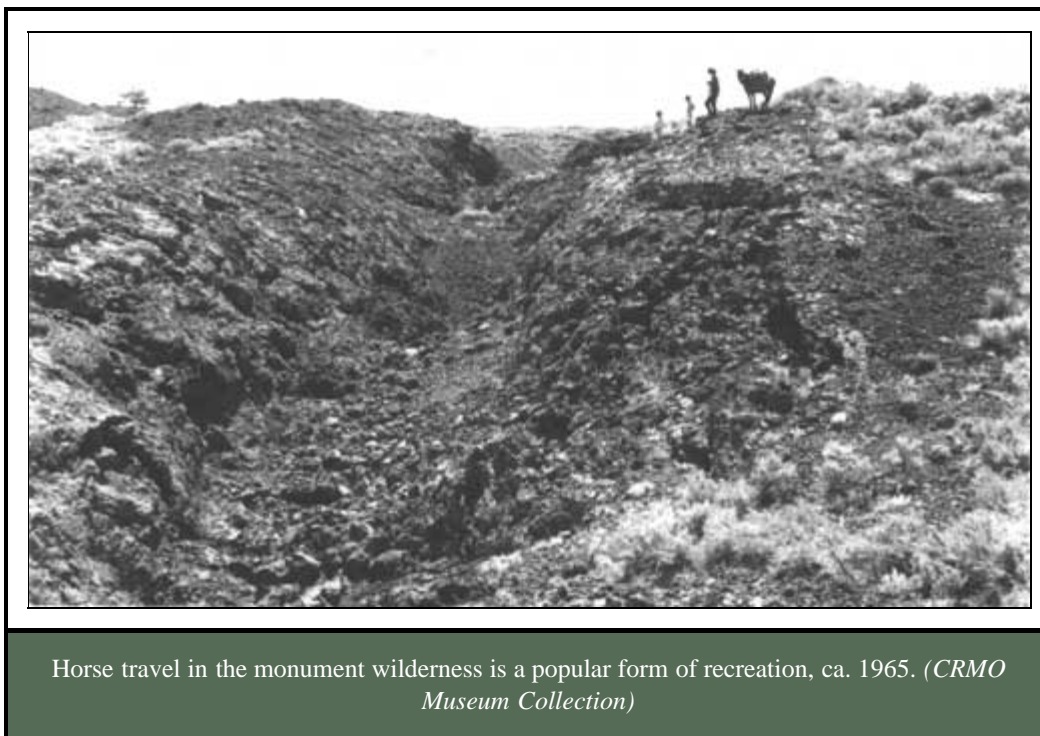
Subsequent wilderness management plans have retained the major principles outlined in previous documents. [18] Hentges, in the 1982 resource management plan, stressed the continuity in wilderness management. For instance, the permit system formed an important management tool because it enabled monument officials to monitor and ensure visitor safety and activity, to protect water resources, and prevent adverse resource impacts. In more than thirty years since the creation of the monument's wilderness area, backcountry use is still light and this fact still guides present policy in the most recent wilderness management plan approved in November 1989.

This plan, however, advanced the approach of past documents. It recognized, for instance, that the monument has the "opportunity to manage" the wilderness in order to preserve its "wilderness character and prevent impacts, rather than try to restore that character through mitigation of impacts." Surrounded on three sides (the east, south, and west) by the Bureau of Land Management's proposed Great Rift Wilderness Area, 341,000 acres, the monument's wilderness seemed well insulated from external threats. It was important then to institute stricter guidelines for internal use. Although the Limits of Acceptable Change System is the standard program for determining wilderness impacts and management responses, Craters of the Moon's low level of use (still averaging around 120 overnight campers) and near "pristine" wilderness conditions rendered this approach impractical. Instead the plan opted for an active resource monitoring program "to assure resource protection." [19]

Moreover, the document defined three opportunity classes in the monument's backcountry to better protect the resource and "provide a variety of wilderness and backcountry experiences." Of the three classes, backcountry, primitive, and pristine, the latter two applied to the monument's wilderness. The primitive zone, a tongue-shaped corridor about a mile wide and three miles long, enclosed the most commonly-used areas in the wilderness--the Tree Molds Trail south along the Great Rift to the popular camping area of Echo Crater. Although considered minimal, here the most impacts and social contacts occurred, and it is here that the "management strategy was to restrict impacts to previously impacted areas." Therefore, campers were encouraged to use former, yet undeveloped, camp sites. The plan also reduced the number of horses per group from forty to twelve. This change reflected pressure from the regional office's wilderness steering committee, headed by former monument naturalist Edgar Menning, and resulted in a short-lived protest by local stock users. The remaining wilderness area was considered as the pristine class, its use characterized almost as the opposite of the primitive class. It received the minimum of use and impacts, and the management "strategy" was to "disperse any use to avoid impacts." This means campers were encouraged to camp in unimpacted sites, move often, and leave behind no signs of their presence. [20]

Essentially, these classifications recognized existing conditions and stipulated acceptable activities in each. In a sense, the backcountry class did the same thing. This undeveloped and natural environment outside of the wilderness boundaries is made up of those lands buffering the monument's wilderness and the northern unit. In the winter months, mid-November to mid-April, the frontcountry serves as the backcountry, since the loop drive is closed by snow and winter sports activities take over. Although no overnight camping is allowed in the backcountry zone, skiers are allowed by permit to camp in the Caves Area parking lot. Similarly, during the spring, summer, and fall months, overnight camping is permitted in the group campground in the northern unit. Use of the northern unit, considered a sensitive area because it contains the monument's drinking water, was otherwise tightly controlled. In the early 1980s, monument officials began to allow day hikes, and were soon forced to require a permit, not to prevent water contamination but to protect the mule deer herd from hunters. One hunter would take a "hike," flushing deer from the monument, which were then harvested by another hunter on the boundary. By making hiking illegal without a permit, this activity ended, and no permits are issued during hunting season. Although no motorized or mechanized vehicles are permitted in wilderness, beginning in 1990, Superintendent Robert Scott implemented a new backcountry management program, allowing bicycles in the northern unit on established roadways, and subject to the same permit system as hikers. [21]

Although the recent management plan has created some changes, the general rule still applies. Until visitation increases enough to impair wilderness and backcountry resources, there is little change foreseen in the course of management. In a sense, what gives the backcountry its wilderness qualities, a harsh and remote volcanic landscape, assures its continued "pristine" state.



WINDSHIELD TOURISTS AND EXTERNAL THREATS

Recreation management shifted somewhat in the mid-1950s with the onset of the Mission 66 program. Although Superintendent Aubrey Houston raised the idea of constructing a winter sports area at the monument as a method to raise revenues for needed development projects, the Park Service instead concentrated on the development program outlined by Mission 66. [22] The 1956 Mission 66 prospectus symbolized the theme of automobile tourism. Driving rather than hiking was now the American public's preferred mode of access. In this plan, Superintendent Everett Bright noted that improved roads and trails, as well as interpretive programs, would assist in boosting recreational opportunities. [23]

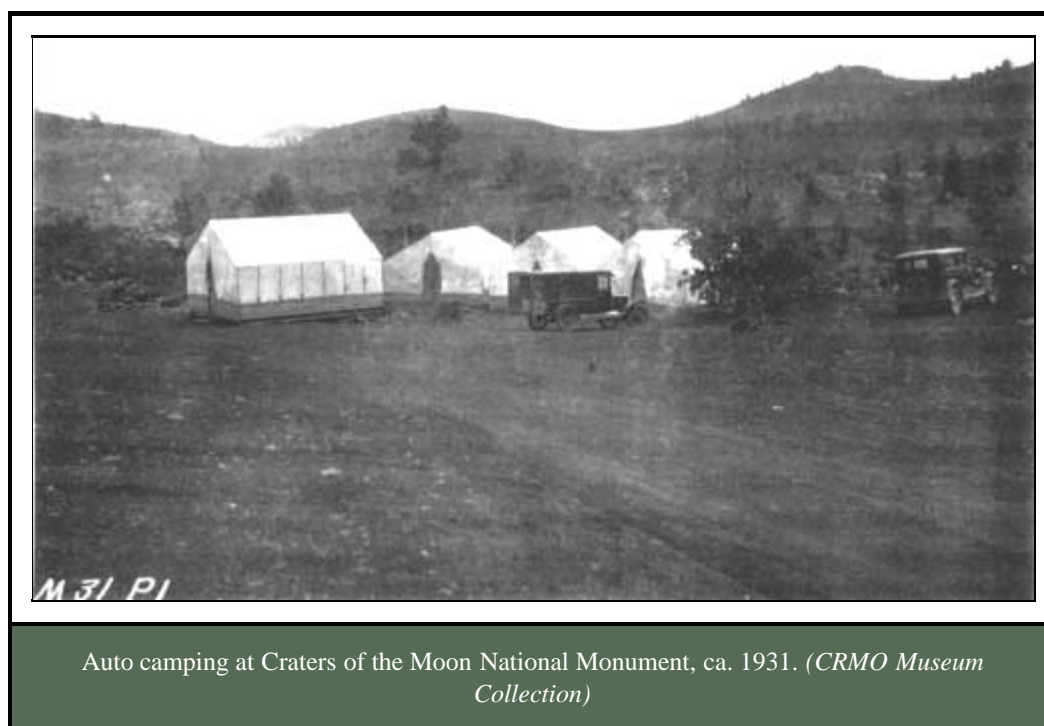
Subsequent management plans concentrated on improving recreation where visitor use would most likely be felt--in the traditional and primary visitor activities. An extension of the loop road around Big Cinder Butte represented one way to expand on sightseeing and interpretation; another was to create more entrances and lighting in the developed caves, and to remodel the present campground into a picnic area and construct a campground twice as large in the northern unit. [24]

Although these plans did not unfold as conceived, they demonstrate Craters of the Moon's management philosophy of encouraging recreation in the lava landscape. A further statement of this commitment, for instance, has been the monument's promotion of primitive outdoor activities in the newly created wilderness in 1970. A more recent variation has been to allow backcountry hiking, biking, and possibly skiing in the foothills of the northern unit. [25]

Recreation within Craters of the Moon's boundaries is more easily controlled than those outside them. To date Craters of the Moon has avoided the clashing values of recreational development and the preservation of natural and cultural resources within the monument because no conflicts have arisen. Currently, the threat of external development revolves around the potential of such developments to occur. The Blizzard Mountain Ski Area, a small operation near the northeastern boundary, for instance, never posed a real threat having run intermittently since its inception in 1962. Superintendent Roger Contor even noted that the

ski area's existence relieved the monument of the pressure to development such an installation. [26] On the northwestern boundary, development of a tract of 2,700 acres of private land in the Big Cottonwood drainage has simmered for more than a decade. Development concepts include winter and summer resort activity, which, given the right economic climate, could severely impact monument resources. And as recent comprehensive management plans have addressed, regional recreational developments could also affect the monument. [27]

All things considered, Craters of the Moon contains a variety of outdoor pursuits for visitors in a relatively small landscape. The loop drive and attendant trails enable tourists to sightsee as well as to take short hikes to and among the monument's outstanding features. Wilderness and backcountry areas add a more primitive dimension to recreation. As recent development plans indicate, the nature of the visitor is changing. Overnight camping in a day-use area has increased, the appearance of recreational vehicles has surged, and the visitor season has expanded. As a result, the general development plan calls for expanding campground facilities and renovating the monument's road system to accommodate these trends. While it is difficult to predict the future, these trends seem to indicate that the traditional center of recreational activity, the frontcountry, will feel the greatest effects. [28]



<<< [Previous](#)

<<< [Contents](#) >>>

[Next](#) >>>

CRATERS OF THE MOON

Administrative History



Chapter 8: INTERPRETATION

OVERVIEW OF INTERPRETATION AT CRATERS OF THE MOON

By definition, National Park Service interpretation seeks to "communicate the natural and historical significance of parks to the public." [1] Its function at Craters of the Moon has been no different. For more than six decades, monument managers have attempted to develop the visitor's understanding and appreciation of the area's natural and cultural environment. As with other management programs, the volcanic landscape, with its variety of features, plant and animal life, has been the main focus. Craters of the Moon's enabling legislation has dictated this thrust, thus relegating cultural interpretation to a lesser emphasis by comparison. The interpretive program at the monument has evolved slowly, reflecting both NPS trends and the monument's administrative development pattern. The first several decades witnessed primarily ad hoc management, as small and underfunded staffs attempted to meet the monument's educational needs. Mission 66 provided new facilities and expanded staffing, enabling interpretation to address both education and resource protection in the ensuing years; it allowed a formal program to emerge.

Such a program has performed a vital role in the monument's administration. Unlike park areas that showcase scenery and whose visitors are aware of why they are coming and basically what they are seeing, Craters of the Moon's scientific uniqueness has assigned interpretation a particularly important function. It must intellectually stimulate both the informed and lay visitor alike. Especially for the untrained visitor, it must convert the initial impression of the dark landscape's stark scenery into a greater understanding of the recent volcanism on display. Instilling an appreciation of the monument's geologic significance, its variety of colors, forms, and textures, enhances the visitor's experience and helps protect the volcanic environment.

THE FIRST DECADES OF INTERPRETATION

Beginning with Secretary of the Interior Franklin Lane's 1918 policy directive, national parks were to be managed for their educational as well as recreational values. [2] Director Stephen T. Mather created the Education Division in 1923, and his successor, Horace M. Albright, established the Branch of Research and Education in 1931. Both developments testified to the Park Service's commitment to science and education. At the park level, these advances contributed to visitor service programs in the form of guided hikes and tours, campfire talks, and museum exhibits. [3]

In its developing stages of administrative growth, Craters of the Moon lacked the required personnel and scientific research to carry out these programs to their fullest and convey to the visitor the monument's importance. The one-man operation in the 1920s and early 1930s concentrated on displaying the features more than it did on relating their scientific qualities. Providing access and guidance to the volcanic phenomena occupied much of the time and energy of the first several custodians. If visitors could not see the sites, then they could not

appreciate them. Influenced by this basic premise, Custodian Paisley established a series of "firsts" in the form of guided and self-guided activities, giving structure to the monument's nascent interpretive program. Paisley created the monument's first "museum service" in the summer of 1925 when he constructed an "elaborate display of specimens from the Monument..." and erected the exhibit outside his headquarters cabin. For decades to come, this crude display case functioned as Craters of the Moon's sole museum exhibit and orientation device for visitors before they toured the monument. [4] Because of the area's low visitation, Paisley also personally assisted visitors in seeing the primary features, as part of his guide business, having laid out a "tour" of the monument along the primitive loop drive.

Although the rudiments of visitor services were set up in the latter 1920s, the Park Service was aware that more needed to be done than greet, direct, and accompany visitors through the monument. Civil Engineer Bert H. Burrell in his 1927 report, for instance, stated that the Craters of the Moon deserved a better trained staff, particularly in the position of custodian as well as in the position of ranger naturalists. With these changes, the engineer intimated that the monument could carry out an educational program. Chief Naturalist Ansel Hall believed as much when he related to Burrell that the Park Service could employ naturalists at the monument for the six-month season to conduct "educational work." [5] But upgrading the monument's personnel in terms of numbers and scientific training awaited several more years, as did any developments in an interpretive program. [6]

Until these changes took place, the Park Service relied on Harold Stearns' pamphlet, "A Guide to Craters of the Moon," to enhance visitor experience. When Yellowstone National Park Superintendent Roger W. Toll inspected Craters of the Moon in the fall of 1931, he observed that it was the only printed information available to the public. Published in 1928 and revised several times thereafter, the guide represented the geologist's extensive research on the monument's volcanic formations, a result of the surveys Stearns undertook in the early 1920s which helped to establish and later enlarge the monument. Toll believed that the geologist's guidebook, available for twenty-five cents, adequately met the visitor's needs. [7] What Toll could not know was that the interpretive program would rely on Stearns' booklet until well past mid-century, a reflection of the quality of the geologist's work and the monument's lack of staff, money, and research to produce a comparable document.



The first visitor center and museum at the Cinderhurst Camp, erected by Custodian Samuel A. Paisley, seated on the left, ca. 1925. (CRMO Museum Collection)

INTERPRETATION AND THE NEW DEAL

The Park Service's expansion during the New Deal augmented the monument's interpretive program substantially. Increased appropriations led to the creation of the first seasonal ranger position, and on July 22, 1935, G. Frederick Shepherd entered duty. His presence not only allowed Custodian Albert T. Bicknell to better supervise and protect the monument, but also enabled Bicknell to provide visitors with a more organized educational program. Shepherd's main duties were registering and handing out information to visitors as they entered the monument. Shepherd "was a good young geologist," according to Bicknell, who possessed special training in volcanology and helped inaugurate the monument's naturalist services. He gave naturalist talks to visitors hiking among the monument's features, and accompanied scientific groups on their inspections of the area's formations, all of which led to "a correct interpretation as to the age relationships of the lava flows and many detail problems." He conducted his own investigations of the monument's volcanic terrain as well, further increasing the understanding of Craters of the Moon. His most ambitious exploration occurred in October 1935 when he traversed the Great Rift from the monument to Minidoka. Shepherd, having previously established caches along the Great Rift, set out on October 6 and arrived at his destination on the 13th. Three days later he retraced his route by airplane to photograph the Rift. The week-long journey emulated somewhat Robert Limbert's 1921 exploration, namely in severity of route, yet unlike Limbert little information remains of his trip and how it aided the interpretive program. [8]

THE 1935 MUSEUM PROSPECTUS

A significant development in the evolving interpretive program took place with Shepherd at the monument. He and Bicknell drafted a report titled the "Proposed Museum and Educational Program at the Craters of the Moon National Monument," in response to the National Park Service's growing educational program development and the establishment of a Museum Division in 1935. [9] Bicknell and Shepherd stated that the monument needed a museum and educational program: "first, to preserve and display specimens of unusual scientific importance and public interest; second, to explain the natural phenomena of the Monument; and third, to fill the growing demand of the public for education." In summarizing the deficiencies in the existing program, they struck a familiar chord, noting that "these needs are inadequately met due to improper facilities and insufficient personnel." With respect to museum collections, preservation, and presentation, only Paisley's "crude specimens table" was available, and it did not protect fine specimens from exposure to weather, mishandling and possibly theft by the public. Moreover, the small display case lacked enough space to hold the entire collection, which had increased in number, nor was there a "satisfactory way in which to label and explain these specimens other than verbally." [10]

As for the educational program, that was "being carried on as well as possible under existing limits of time and personnel." It was in fact better than it had ever been with the addition of Shepherd. Both he and Bicknell interacted with visitors as much as possible, explaining the specimens in the collection, answering questions, and orienting them to the monument's sites. Visitors expressed their appreciation of this type of instruction, claiming that it enhanced the value of their visit. Other contributions to the program were covered in campfire and field lectures, mainly by the seasonal ranger. In any case, due to rising visitation and small staff, some visitors were overlooked, while those who received assistance desired more in-depth instruction or field guidance. The two men concluded that the value and necessity of an educational program was beyond question.

The experience thus far gained has proved conclusively the potential value of an

educational program which would enable visitors to hear talks either in an open-air theater, at campfires, or at various places on the loop road thru the Monument. The demand for literature and maps has also increased to the point where apologies are needed to explain their lack. [11]

The principal feature of the proposed program was the construction of a museum building. The ten-room structure would house exhibits of geology, natural history, some cultural history, as well as library and new ranger-naturalist's office and living quarters. Having the naturalist stationed at the museum building would facilitate visitor contact. In this regard, the naturalist would be on duty twenty-four hours a day. The museum building would function as the central orientation point for tourists, and the exhibits would be supplemented with explanatory labels, thus relieving the shortcomings in the educational services already provided. [12] "We also believe that in so doing," Shepherd and Bicknell stated, "we are furthering the extensive educational program inaugurated by the National Park Service to develop the cultural instincts of the public." [13]

But the prospectus was just that and remained in "preliminary status," joining other study plans from other parks at the Branch of Plans and Design in the late 1930s. While the museum and educational program remained in the design stage, the monument's interpretive services waxed and waned. In 1936, for instance, funding allowed for hiring two temporary rangers, further increasing public contacts. However positive this appeared, the end of the New Deal programs and entrance into World War II diminished funding and seasonal staffing, and hence diminished hope that Craters of the Moon would receive the needed facilities and personnel to build its program. Regional Director O.A. Tomlinson's opinion that the monument was self-operating in 1943--requiring only minimal staffing and few physical improvements--caused the monument's interpretive program to suffer further setbacks. [14]

Despite setbacks and delay the Park Service continued to plan for developing the educational and museum program at the monument. Assistant Director Hillory A. Tolson called for Craters of the Moon to be included in the Museum Exhibit Planning Program for 1948. [15] Renewed emphasis only engendered the same response. In 1949 Superintendent Aubrey F. Houston reported, for instance, that preservation of museum objects was basically in the same status it had been for almost thirty years. Underscoring the area's deficiencies in this aspect of management, Houston refused to submit a priority list for museum projects in July 1950 because the monument had no museum. The superintendent suggested to the regional director that the agency begin again with another comprehensive museum prospectus and include a museum building in the monument's development plans for the 1952 season. [16]

At this same time interpretation assumed new importance in the Park Service, [17] and its effect was soon felt at the monument. In January 1951, Region Four initiated a program for producing an interpretive development outline for Craters of the Moon as part of its master plan, and hence for establishing an interpretive program. Upon completing the report by the following January, Houston reiterated his earlier analysis regarding interpretation.

We may safely assume that we must start from scratch, since there has been no physical development of interpretation devices nor any coordinated program of interpretive service and contact, to my knowledge, since the area became part of the National Park System. There have been individual efforts from time to time, such as those of Mr. Bicknell and Mr. McCarty as well as my own. But for all practical purposes the Monument may be considered as having no interpretive program at present. [18]

Houston hoped to build on the earlier educational program and museum prospectus drafted by Bicknell and Shepherd. With that document and his own outline, the Service could work

out an "integrated program which will enable our visitors to see and understand the significance, as well as the scenic and esthetic values to be found here." [19]

THE 1952 PROPOSED PROGRAM

Although preliminary, Houston's interpretive outline documented the status of interpretation at the monument. In terms of themes, the natural environment received the most attention. The wide assortment of volcanic features associated with a fissure eruption compressed into such a small area offered the perfect arena in which to study and enjoy the geological phenomena. The biological environment was important for how it related to the volcanic landscape, especially plant adaptation and the abundance of life found throughout the seemingly desolate lava. Humans also fit into this category, since rock mounds marked Native American trails through the area. Only a few scientific studies, however, supported the interpretation of geology, flora, and fauna. While Houston attempted to interest universities in research, knowledge of the monument's resources remained mostly incomplete. [20]

Along with the shortcomings in research, interpretation at the monument was suffering setbacks because of increased numbers of visitors to the area. [21] Rising visitation in the postwar travel boom, the regional increase in population with the establishment of the Atomic Energy Commission site near Arco, and the improvement of national highway access to Craters of the Moon all resulted in additional visitors to Craters. The monument, then as now, was not a destination area. Visitors en route to or from Yellowstone National Park or Sun Valley, for instance, stopped in at the monument for a brief visit, reinforcing the "rest stop" perception of the monument by regional and Washington offices. Traveling mostly by auto, the majority of visitors toured the monument in several hours and left, leaving only a small percentage to spend the night in the campground or at Crater Inn.

The short period of time larger numbers of visitors stayed at Craters increased the pressure on the small staff to convey the monument's significance to more people in a shorter period of time--without the proper facilities to do so. Typically, two permanent employees, the superintendent and the supervisory ranger, along with a few seasonal rangers attempted to inform and interact with visitors as best possible. A seasonal ranger greeted the public at the checking station in the monument headquarters, collected a .50 cent fee, handed out a leaflet, directed visitors to the rock display table and the loop drive. For these reasons as well as a lack of adequate parking and personnel, the superintendent complained that "It is impossible to give more than a very few minutes to interpretation," especially for those who have "more than a superficial interest." Moreover, without a museum, the headquarters office functioned as an interpretive center, interfering with administrative duties during the summer months, and insufficiently meeting the informational interests of the general public. This further reinforced the need for an orientation hub.

The limited interpretive program relied heavily on the self-guiding theme. The loop drive, connecting the frontcountry sites, was central to this activity, offering turnouts and trails to the sites and beyond. Interpretive devices such as waysides and signs were incomplete, though, and improvements to them would only add to the visitor's experience as would the addition of self-guided trails. In addition, limitations of staffing and increases in visitation impeded what personal interpretive services the monument provided. Conducted tours were popular but restricted to special groups. As a rule, seasonal rangers and the superintendent conducted interpretation through short contacts in the form of roving patrols. Major events such as Opening Day saw an increase in regular activities, as did holidays and Sundays. Moreover, the best known form of interpretation in the Park Service, campfire talks, was missing from Craters of the Moon after 1939 and continued to be during the early 1950s due to low demand, among other reasons. While the monument continued to rely on the Stearns pamphlet, Houston noted that his staff hoped to form a natural history association some time

in the near future to correct deficiencies in publications. Away from the monument, the superintendent also presented talks about Craters in the local and regional communities. Some headway in interpretation was being made in the early 1950s, yet the persistent lack of proper facilities and personnel continued to restrict any noticeable development. Until these improvements occurred, visitors would continue to criticize the monument's administration.

MISSION 66

Plans to improve the monument's interpretive capabilities climaxed with the Mission 66 program. Interpretation constituted a main focus of the management and development program. As Superintendent Everett Bright detailed in the monument's Mission 66 prospectus, the continued lack of facilities, personnel, and increased visitation caused Craters of the Moon to fall short of its interpretive objectives "as a scientific and recreational area." The approximately 120,000 visitors in 1956, for example, certainly experienced the monument in a physical and scenic sense but received virtually no educational experience, no real appreciation of the site's importance, no expanded understanding of what they were encountering. The Mission 66 interpretive concept remained unchanged from previous proposals, though the intent differed slightly. Managers wanted to help the visitor achieve a better knowledge of the area's resources and in doing so foster a sense of public responsibility to protect those resources.

As part of the Mission 66 program, the Park Service drafted a new museum prospectus and sign plan for the monument in the summer of 1956, and improved the monument's road and trail system by 1957. A combined visitor center and headquarters was finished in 1958, containing a lobby, museum, and offices. The visitor center formed the conceptual and structural heart of the interpretive program.

The interpretive design theme proposed and implemented by Mission 66 concentrated on self-guidance; it envisioned the visitor confronting the strange environment along the highway, pausing at several pullouts, and entering the monument to learn more about the volcanic landscape. The first stop was the visitor center itself, located strategically near the entrance, where audiovisual media and discussion with trained personnel introduced the public to the area. Upon leaving the information center, the visitor then traveled through the monument along an improved loop drive. The newly paved road circulated cars in one direction for most of the tour. Waysides and signs informed visitors about the sites, and those individuals wanting to explore the monument by foot could do so on several self-guided trails which were in place by the early 1960s. Personal activities such as guided walks, auto tours, and evening programs also complemented the physical improvements. [22]

Administratively, Mission 66 provisions led to an important stage in the interpretive program. Plans called for the creation of an interpretation division; prior to the late 1950s the superintendent and chief ranger shared the responsibility for running the program. Steps to alleviate this obstacle took place on July 8, 1956 when, in lieu of creating a permanent naturalist position, the Park Service split the ranger position into half-time duties as ranger and naturalist. Robert Zink, the monument's ranger who received this classification, stated that this new designation merely affirmed the double duties he had been active in for several years, leaving interpretation in the same status. [23] By July 1959, Superintendent Floyd Henderson created a permanent park ranger-naturalist position at the monument in order to better manage interpretation. And in October, David C. Ochsner assumed the position of the monument's first park naturalist, transferring from Olympic National Park. With his arrival, the monument officially had an interpretation division. [24]

THE POST-MISSION 66 ERA

Although many aspects of the interpretive program were in place before Ochsner's arrival, the park naturalist did influence the development of interpretation. In 1960, he helped to reinstate the campfire program. He was one, if not the first, person to suggest interpreting plant succession at Craters and proposed that the monument develop a self-guiding nature trail at Devil's Orchard, where the dominant theme would be ecology.

By the mid-1960s the interpretive program included self-guiding tours via the visitor center, loop drive, and trails; and guided tours in the form of auto caravans, nature trails, and campfire presentations. Craters was still lacking a formal document directing the program, such as an interpretive prospectus. Superintendent Daniel Davis, interested in strengthening the existing interpretive services and their expansion, assigned Chief Park Naturalist Edgar P. Menning to write the monument's first interpretive prospectus. The purpose of the document, drafted by January 1964, was to "incorporate the existing and proposed interpretive media for the monument..." in addition to establishing some conceptual foundation for interpretation. [25] All of this was necessary because the Mission 66 program only established the basics of the interpretive development and a more comprehensive approach was needed. For example, funding limitations prevented the installment of many interpretive and orientation devices in the visitor center; revisions and additions to outdoor media were warranted due to new information on the monument's geology. All told, changing forms of media and concepts in interpretation placed a particular emphasis on audiovisual programs. [26]

While the prospectus validated the interpretive values presented at the monument, its primary concern was to determine the best method of conveying the area's significance to the public. Of particular concern was the individual visitor. The 450,000 annual visitors as projected in the Mission 66 prospectus failed to materialize; the roughly 200,000 annual visitors stayed only a matter of hours, thus confirming that program development should concentrate on self-guidance. Menning determined that the visitor center attracted nearly all visitors, and for this reason, he proposed making the existing eruption film the "primary interpretive media" for relating the complex story of the Great Rift and formation of Craters of the Moon. The three-minute film deserved this emphasis because of its popularity, its informative qualities, and its ability to quickly familiarize the short-term visitor the area. To centerpiece the film, he proposed increasing its length and building an auditorium to house it. The secondary media in the visitor center would be the existing exhibits with some revisions. These would include better illustrations of volcanic activity, would introduce mounted animals to replace ineffective photo panels of the monument's wildlife, and would emphasize the area's plant distribution patterns, habitats, and succession.

As stated in the interpretive prospectus, the visitor center was a critical element to the monument's self-guiding tour. Beyond the visitor center the loop drive constituted another of the monument's main self-guiding interpretive devices and should be viewed, according to Menning, as important since it enabled the normal "transient" visitor to gain some appreciation of the weird landscape and stimulate interest to return. The drive also operated in conjunction with the monument's trail system, which provided access to the exhibits in place. By this time four trails were self-guiding. One of these, the Devil's Orchard, boasted one of the first audio stations in the monument, exemplifying the new shift in media devices. In addition, the prospectus recommended some conducted activities, such as proposing that a permanent campfire circle be built to replace the temporary structure assembled in 1960. It also advised that research was also badly needed to establish a comprehensive program--geology still being the best-known subject.

In January 1967, Superintendent Paul Fritz's administration reviewed the interpretive program in order to bring it up to date. While leaving the major themes intact, the monument's park naturalist, Dennis L. Carter, recommended several changes in the program that diverged from Menning's prospectus. Carter stated that only half of the monument's visitors currently

stopped at the visitor center, and therefore, since the facility supplied enough interpretive devices, no efforts would be made toward expansion of the media program. More important for planning, Carter suggested that future attention would have to concentrate on the expanding season, as tourists were arriving in shoulder months of May and September. [27]

Carter was expressing a central factor in the monument's interpretive program: the balance between guided and self-guided services. Most often, as suggested by the naturalist's analysis, decisions weighed in favor of the latter, since the combination of visitors, funds, staffing, and physical landscape dictated such an approach. It was the impetus behind Superintendent Roger Contor's decision to end auto tours in 1966. Although self-guidance formed a major interpretive activity, Carter believed that some guided activities were requisite because there were limits to self-guidance. Conducted hikes, then still in the experimental stage, exemplified a viable and efficient interpretive activity. [28]

One of the main administrative changes proposed at this time was to combine the interpretation division with the resource management division. A May 1968 management appraisal team suggested this action, reasoning that, while the divisions functioned well individually, they overlapped in "research programs and proposals and visitor services." Due to the close interrelationship between the two divisions, "they are functioning essentially as a combined I and RM organization." [29] Superintendent Paul Fritz concurred with the team's findings, but noted that no action would take effect until a chief of I and RM was classified, possibly allowing for decreasing the grade of either the ranger or naturalist positions. Available records do not indicate when this change took place, but by at least 1972, both interpretation and resource management had been officially merged into one division, with the monument ranger functioning as chief of I and RM. [30] By 1978, the situation had come full circle when Superintendent Robert Hentges abolished the single division and reestablished two divisions. This move reflected his own view that separate divisions offered more administrative efficiency in spite of the overlap, and also reflected a Park Service directive to this effect, around since 1974. [31]

Besides the separation of divisions, the most notable administrative change impacting interpretation during the 1970s transpired in 1978 when Hentges hired David Clark as the monument's chief interpreter. Clark's tenure has spanned more than fifteen years, and his long tenure and vigorous leadership are responsible for the area's current interpretive program and development. This most recent era in interpretation has its roots in the 1979 interpretive prospectus which Clark prepared. This document expressed the need to revise the program to match visitor use to personal and nonpersonal services, in order to provide the most effective interpretive programs. [32] That Clark believed a major revision was necessary does not mean that his predecessors were negligent. It is more a commentary on the frequent turnover in the chief interpreter's position, causing a lack of unity in the entire program. [33] Furthermore, the program has benefited from better research, improved funding, and professionally trained staff, mostly unavailable to past managers. In all of these areas, traditional problems persist, the significant highlights being a more organized and well run natural history association helping to fund programs, and the establishment of the first permanent park ranger (interpreter) position in 1989. [34]

The principal philosophy guiding the program since Clark's arrival has been to provide the visitor with a more complete understanding of the volcanic landscape by furnishing a variety of interpretive themes, based largely on the most recent and extensive research conducted at the monument. [35] The comprehensive approach to interpretation--covering natural and cultural resources, as well as objectives relating visitor safety and Park Service information--was set down in the 1981 statement for interpretation. The document listed five specific themes and objectives for interpretation:

1) To encourage the understanding and appreciation of the geological, biological and ecological influences which make up Craters of the Moon. To stimulate an increasing awareness and interest in the visitor concerning all natural processes occurring in the monument and elsewhere. 2) To encourage understanding the role preservation plays in the maintenance and management of natural areas. 3) To instill in the visitor a sense of caution when confronted with unfamiliar safety hazards. 4) To give the visitor a better understanding of monument regulations and policies. 5) To create an understanding and interest in the role that past human influences have had upon the monument and our culture. [36]

Ten years later the only changes were some clarifications and revisions that reflected a broader perspective. The first was to emphasize that the geological processes at the monument were part of those that created the Snake River Plain; second to recognize the Park Service's concern for issues affecting the natural world; and the third to educate the visitor about resource management issues, in order to relate the concept of preservation and "the role it plays in the management and maintenance of natural areas." [37]

As these goals suggest, interpreting resource management issues has evolved as one of the most significant philosophic changes in the program. It departs from conveying information about the monument's resources and attempts to actively involve the visitor in their protection. Another theme that has become increasingly more relevant has been cultural history. As research progresses, the interaction between nature and humans in the monument's volcanic environment sheds light on how the harsh landscape influenced human activity. And finally, the program also hopes to complete the interpretation of all the monument's representative geologic features by including Big Sink, its importance brought to light by new research. [38]

THE PROGRAM: PERSONAL AND NONPERSONAL SERVICES

PERSONAL SERVICES

Although the monument's physical landscape lends itself to a self-guiding format, managers have attempted to provide group activities that give a sense of one-to-one interpretation. These activities have involved guided walks, tours, campfire talks, and special programs. This type of interpretive approach continues to evolve since it requires proper funding, staffing, and visitor interest to maintain, unlike the self-guiding programs which tend to be more cost effective but lack the in-depth interpretation possible through personal services.

GUIDED WALKS

One of the earliest forms of interpretation at the monument was guided tours of the area's features. Custodians in their capacity as lone managers during the 1920s and early 1930s engaged in this form of visitor service because of low visitation and lack of well-developed roads, trails, and signs. Custodian Paisley, for example, personally guided visitors through the monument, as he stated, taking "special pains to point out all of the attractions of note." In this regard, the custodian owned an added incentive, since Director Mather had granted him the special privilege of operating an exclusive guide service. While private services of this type arose later (Limbert briefly operated a guide service in 1927), subsequent managers employed similar interpretive activities, greeting visitors, familiarizing them with the area, and when possible leading them through it. [39] In this capacity, managers attempted to relate to individuals the area's significance and regulate, to a degree, resource impacts.

Guided hikes, however, did not officially join the interpretive program for several more decades. Reasons for this stem from the fact that staffing did not keep pace with rising

visitation prior to World War II, and that the war years saw decreases in both personnel and visitation. By the early 1960s, bolstered by Mission 66 developments and expanded staffing, the monument's interpretive program once again included guided walks. In the summer of 1961, Superintendent Henderson experimented with nature walks and scheduled one conducted hike to the caves area on Sunday mornings. Henderson felt they were popular enough to increase to three a day if the monument could hire more naturalists. His optimism was short-lived. Two years later, Daniel Davis and his staff increased the walks to once a day on weekends, yet lack of visitor interest discontinued the activity by 1964. Attempts to develop guided walks, though, continued. At the suggestion of former Chief Park Naturalist Ed Menning, Superintendent Roger Contor reintroduced the activity on experimental basis in the summer of 1965. [40]

After several years experimentation paid off. Park Naturalist Dennis L. Carter reported that conducted hikes were quite successful, attendance was high, and they would be made a regular aspect of the interpretive program in the summer of 1968. They were to receive the primary attention of day-time personal services since the auto caravan had been discontinued two years earlier. The main interpretive emphasis would be natural history, since geology was well covered through other media. [41] The North Crater and Great Owl Cavern Trails were the main routes used. [42] By the summer of 1970, the monument had initiated a hike to Buffalo Cave, which, Superintendent Fritz announced, proved popular enough to become a regular feature of the program. [43] Fritz reported several deciding factors for the success and scheduling of these activities--climate and staffing. While daily morning walks were well attended, the monument abandoned an attempt at a mid-afternoon trip because the "combination of hot sun, the strong winds, and our transient visitation at this time of the day apparently made it rather undesirable." Attempts at creating an early-evening walk failed since the monument was understaffed (although day-use visitation patterns suggested a reason for this failure as well). [44] Other walks up Inferno Cone and to the Big Craters-Spatter Cones, North Crater, and Devil's Orchard have been attempted since the 1970s but suffered from low attendance and were cancelled; exploring lava tubes (or caves) seems to have provided more incentive for visitors. [45]

Today the nature hikes follow largely the same format as established in the early 1970s. High visitor interest, attendance, as well as the cool cave environment are determining reasons behind three daily Cave Area walks in the summer season. Though these walks do not provide enough time for in-depth interpretation, their popularity and practicality make them important services. Balancing this out, more in-depth coverage is offered on the two-hour walk to Buffalo Cave, which targets campers who wish to take a hike during the cool morning hours. [46]





Naturalist hike in the North Crater Flow, ca. 1963. (CRMO Museum Collection)

AUTO CARAVANS

Prior to the 1950s, auto tours were an informal enterprise. Reflecting the new travel boom in American society and the monument's improved road system after completion of Mission 66 construction, auto tours then lived a short life as a formal part of the monument's interpretive program in the late 1950s and early 1960s. Compared to the larger parks which conducted auto caravans in the late 1920s, the program at Craters of the Moon was somewhat anachronistic. Nevertheless, the auto tour was the primary day-time activity of the monument's interpretive services during this period, while nature hikes were still in the experimental stages.

Superintendent Henderson initiated the caravans in the summer of 1959. The conducted tours operated from two to four times a day, spanned one hour in length, and consisted predominately of geology, and to a lesser extent natural history. The tour stopped at four sites along half of the loop drive: Devil's Sewer (North Crater Flow) for an introduction to aa and pahoehoe flows and features, as well as plant succession on pahoehoe; Paisley Cone for discussion of a cinder cone and the variety of cinder habitats and plant communities; the first Inferno Cone overlook (the pass before Big Craters parking area) for discussion of the monument's and surrounding area's landscape; and finally the Big Craters-Spatter Cones site for discussion of the Great Rift and forces of volcanism. [47] For a time the tours were well attended and elicited complements from visitors. Yet after examining the attendance in 1965, Superintendent Contor observed that visitor use was sporadic, and that the completion of signs and waysides converted it to a self-guiding format. Altogether, these conditions did not merit continuing the program, and the superintendent terminated it the next season. Contor instead decided to rely on conducted walks, roving patrols, and station duty at the visitor center to make interpretive contacts, which, he believed, were a successful means of interpretation. [48]



Auto caravans were a brief, but popular, form of interpretation in the early 1960s. *(Photo courtesy of Glenn Hinsdale)*

CAMPFIRE PROGRAMS

As suggested by the conducted walks and auto tours, interpretive services at Craters of the Moon depended highly on visitor interest and proper staffing. The centerpiece of the Park Service's interpretive program was the evening campfire talk, one of the first standard features of interpretation at Yosemite and Yellowstone National Parks. The Park Service used the traditional nightly gatherings to discuss the national park idea and how, whether in truth or legend, that concept was related to 19th-century explorers who discovered some of the scenic regions now preserved as parks. [49]

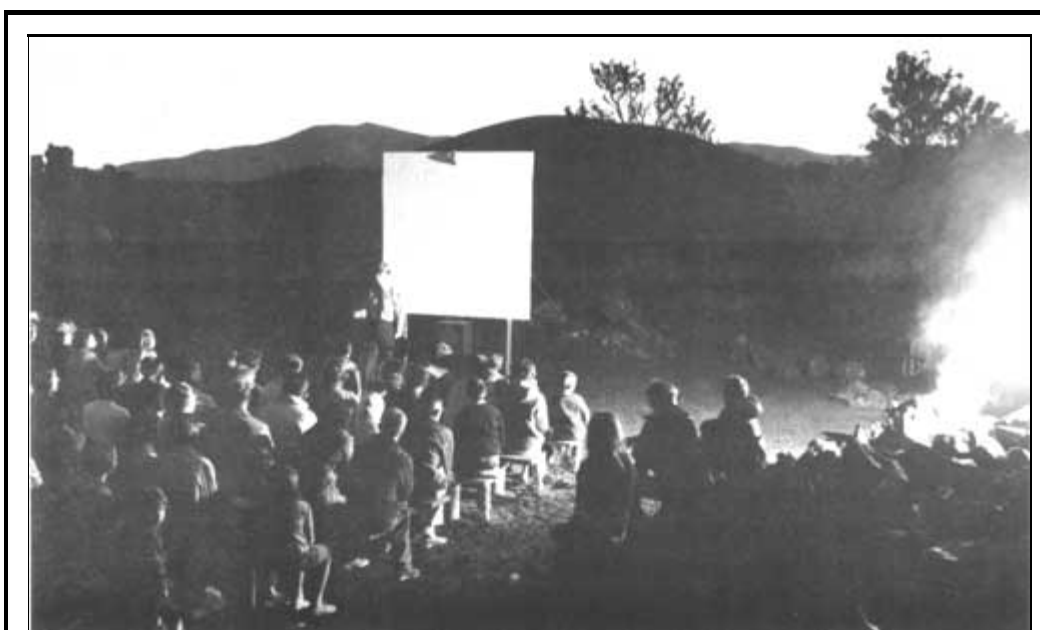
The campfire program at the monument commenced with the addition of the first seasonal ranger, G. Frederick Shepherd, in the summer of 1935. That season, at the behest of visitors, Shepherd conducted several campfire lectures. His training in geology added depth to his presentation, Custodian Albert Bicknell noted, and "aroused considerable discussion among the visitors," drawing crowds of twenty or more people, and "proved very successful and to be much appreciated by visitors." [50] Evening programs lasted only a few more seasons, however, before they were discontinued by Custodian Guy McCarty in 1939 at the onset of World War II. [51]

Interrupted by the war years of low visitation and understaffing, the campfire program was not reinstated into the monument's interpretive program for several decades. In the early 1950s, Superintendent Aubrey Houston reported that the evening lectures did not as yet deserve a formal program. Endeavors at conducting them experienced low turnouts, the superintendent observed, because the evenings were apparently too cool. An attempt to hold discussions inside Crater Inn proved ineffectual as well due to limitations of space. Technical difficulties further hindered the campfire presentations; still without electricity by early 1952, the monument staff was unable to show slides or films. Houston anticipated that any advances in this direction would be self-initiated since Craters of the Moon did not own any audio-visual equipment, but staff members were willing to show their own slides for special events as well as lecture programs. [52]

After the creation of the interpretation division and the hiring of the monument's first park naturalist in 1959, the evening program saw renewed life. In June 1960 Superintendent

Henderson decided to construct a temporary amphitheater adjacent to the campground. omitted from the Mission 66 construction plans, the campfire program site included wooden benches seating 120 visitors, a projection table, and a plywood screen painted white. Beginning on June 18, park naturalists presented illustrated talks on geology or natural history two nights a week. After a few years their popularity had grown, and Superintendent Davis increased the program to once an evening during the summer season. [53] Variations of the campfire program have been tried. For example, for several years in the late 1970s and early 1980s, the monument experimented with an early evening children's program as part of the Park Service's Urban Initiative and Year of the Child themes. [54] However, low attendance and a wide age distribution cancelled this activity. To date, the traditional campfire program remains one of the most well-attended and effective interpretive activities in the monument. [55]

For all of its popularity, however, the campfire program suffered through long years of operating with inadequate facilities. Built as a temporary facility in 1960, the amphitheater was never designed to withstand the monument's environmental conditions. In May 1963 Superintendent Davis involved his staff in a rehabilitation project, which entailed landscaping, seating and audio-visual improvements, and placing electrical wiring underground. [56] These renovations reduced some but not all of the program's shortcomings. In 1964 Park Naturalist Edgar Menning suggested that the proposed auditorium might solve some of the interruptions caused by the monument's weather. The auditorium was never built, and in 1973 Superintendent Fritz stated that the temporary structure had "deteriorated to the point that it is no longer usable." The location next to the campground created distractions and more importantly, the facility's electrical system was a nightmare, repeatedly failing during evening programs. [57] Fritz won approval for construction of a new amphitheater in 1974, but due to construction setbacks the project was not completed and operational until August 5, 1975. The project redesigned the amphitheater site (moving it over the hill) to correct the noise intrusions from the campground. [58] A prefabricated structure, this new amphitheater required replacement soon after it was installed. Although identified as interpretation's top priority in the late 1970s, nearly ten years passed before the project reached the top of the cyclic maintenance priority listing. Completed in 1988 and designed to blend with the monument's environment, the new amphitheater proved to be a "monumental improvement over the existing site." [59]



Campfire program, 1965, one of the monument's most popular interpretive programs. (CRMO Museum Collection)

ON-SITE AND OFF-SITE PROGRAMS

Craters of the Moon also participated in other on-site and off-site personalized services such as roving patrols, orientation talks at the headquarters and later visitor center, as well as community presentations. Managers traditionally attempted to guide groups through the monument until visitation overwhelmed the small staff. By the early 1950s, Superintendent Houston restricted group tours to school classes and Boy and Girl Scout field trips. Of the two, only tours for school groups survived until the late 1980s. At that time, increased demands outpaced available personnel for this service; the visitor center became overcrowded, and it was too much to expect interpreters to work well with children of all age groups. For this reason, the monument phased out the guided tours in favor of the concept of teaching the teachers.

Promoted by Park Interpreter David Clark, this program aimed at fulfilling one of the most critical interpretive activities--environmental education. In 1990 the program was officially launched with the publication of a teacher's guide. Monument staff members had first broached the idea for such a guide as early as 1976, but administrative and publication matters delayed its production. The handbook's purpose was to advise teachers on how to plan monument field trips and activities, and how to understand the volcanic environment so they could in turn instruct their students. As the program has matured, it now includes several one-day workshops, a four-day accredited teacher's workshop in affiliation with Idaho State University, and resource trunks complete with video tapes of the monument, slide programs, books, posters, rock samples, among other things, located in various school district offices throughout southern Idaho. Although one of the monument's most successful programs, it is also one of the most susceptible to budget cuts and depends on funding from the monument's natural history association and work by volunteers. [60]

Off-site interpretive activities by custodians and superintendents also were a standard practice of monument managers during the spring and winter months. Custodian Paisley, for example, initiated this routine in 1925 when he provided museum exhibits for local fairs. Off-site programs received increased emphasis when the Mission 66 campaign sought to increase public awareness of the Park Service's purpose, and the environmental movement of the 1960s spurred the agency's activities in environmental education. [61]

In 1968 the National Park Service formalized this trend by initiating the National Environmental Education Development for Schools program (NEEDS). NEEDS met with varying success throughout the System, and at Craters of the Moon little of the program was used, mainly because of the monument's distance from local schools. Yet environmental awareness did find its way into the interpretive program. Superintendent Paul Fritz, influenced by his keyman and state coordinator duties, promoted an environmental education program in southern Idaho schools, assigning his park naturalist to conduct off-season presentations within the region in the late 1960s and early 1970s. [62]

By the mid-1970s, the environmental education aspect of the interpretive program had evolved to the point where it was, for the most part, an important though voluntary operation run by the park naturalist. Chief Interpreter Robert Reynolds by his own initiative, for instance, participated in educational training for southern Idaho teachers. He belonged to an interagency team, the Magic Valley Environmental Education Team, composed of United States Forest Service personnel, as well as local and state educators; he also worked with the Idaho Environmental Education Advisory Committee. The duties centered primarily on providing three to four teacher workshops a year around the region, and local meetings with teachers in Butte and Blaine counties. [63]

Outreach programs such as environmental education suffered setbacks in the late 1970s and early 1980s when the arrival of the energy crisis restricted travel, when budget cutbacks decreased seasonal naturalists, and when visitor trends expanded the visitation season. These new conditions strained the one man interpretation division during the winter months. Even though attempts were made to continue the program in the 1980s with school programs on energy conservation, monument involvement in this activity was effectively over. Travel restrictions and shortages of funding and staffing were the main culprits, but the monument also realized that it was more effective and would reach a wider audience to concentrate teacher workshops and school and special programs at the monument. To give one program to a single group often meant a two-hundred-mile trip. [64]

Experimental Breeder Reactor #1

Craters of the Moon has not always interpreted only its own resources, and for a time in the 1970s assisted in the interpretation of the Experimental Breeder Reactor #1 (EBR-1), a national historic landmark registered in August 1966. Located at the National Reactor Testing Station (now the Idaho National Engineering Laboratory) some twenty miles east of Arco, the site was operated by the Atomic Energy Commission (now Department of Energy). Early in the 1970s, the Atomic Energy Commission announced its plans to deactivate and decontaminate EBR-1 by 1976, and expressed its intentions to cooperate with the Park Service to establish a nuclear energy interpretive program at the historic landmark. [65] Superintendent Fritz supported the inclusion of EBR-1 into the National Park System; such an event fit well with his plans to relocate the monument headquarters to Arco where coordinated management of both areas could take place.

The site was never included in the System, yet the Service did assist in the facility's interpretive program beginning in June 1975. At that point in time, EBR-1 was dedicated and opened to the public on a daily basis from mid-June to mid-September. At that time as well, the Park Service entered into a two year cooperative agreement to assist in the structure's management. Craters of the Moon supplied two interpreters and janitorial services, as well as covering some utility costs; the DOE supplied the majority of funding for overall operations. The monument also helped create a self-guiding booklet that first year for the interpretive program. [66]

After two years elapsed, Superintendent Robert Hentges wanted to sever the agreement between the agencies. As he stated, "It is Craters of the Moon's feeling that...interpreting this particular site does not coincide with what we feel is Park Service philosophy and policy." [67] Unable to dissolve the arrangement in 1977, however, the monument continued operations at the site, except that the monument was now involved in a contract capacity. DOE was responsible for the operation costs, while Craters of the Moon administered the seasonal staff, both hiring and supervising the personnel in return for the costs as well as a 25 percent management surcharge. [68] After four seasons of operating the interpretive program at the EBR-1 site, Hentges further expressed his desire to end the relationship, but foresaw no immediate end to the situation. The most recent agreement ended after the 1979 season, and available records suggest that as of 1980 the monument terminated its interpretive program with the site, the DOE evidently assuming all responsibility for managing the landmark. [69]

SPECIAL EMPHASIS PROGRAMS

To achieve its goal of fostering understanding and appreciation of the monument, Craters of the Moon reached out to the public in other ways. The most notable example was the Opening Day ceremonies, the pet project of Arco business leaders since the area's establishment. The event provided managers with a special occasion once a year to interact

with the local communities and impart to them the monument's and Park Service's mission. Although cut back by Superintendent Daniel Davis in the early 1960s, Opening Day was eliminated by Superintendent Fritz in 1968. To conduct this program gave the impression that the monument was only open seasonally, and Fritz worried that visitation would be adversely affected. [70]

An offshoot of this outreach tradition has been the special emphasis programs sponsored by the interpretation division. These programs occur usually once a season in which a particular theme such as the bicentennial or Park Service anniversaries is presented. The monument intends for the programs to attract neighboring residents, who would otherwise never visit the monument, as well as special interest groups. Moreover, the programs provide the opportunity for the interpretation division to integrate pertinent management issues, such as air quality, into their educational program. One example is the highly successful program of 1988, "A Day in the Air," an event that featured guests from the Park Service, Department of Energy, Idaho congressional representatives, and local and state officials. The event was successful in the areas of public relations and resource management, and resulted in a commitment from DOE to install air quality monitoring facilities at the monument. Along these same lines but on a smaller scale, the division scheduled special topics programs for Saturdays on an experimental basis in 1990. These events cover subjects such as wildflowers, ecology, wilderness, lava tube explorations, and history. They have proven to be popular with the general public, based on attendance and visitor surveys, but their scheduling depends on demand and the expertise of available interpreters. [71]

OTHER ACTIVITIES

Many interpretive activities have had only transitory value at the monument, dependent on visitor attendance and administrative efficiency. Early evening campfire programs and evening naturalist strolls, for example, mark some of the services attempted in the past and which might be tried again. [72] Sky interpretation has assumed a more lasting role. Interpreting the stars in the monument's night sky complemented discussion of other aspects of the monument's resources, such as its clear air. After a 1972 star-gazing workshop, Superintendent Fritz proceeded to initiate a small-scale program following each evening's campfire talk. As Fritz stated, "Our nighttime sky is superb, the sort of sky seldom seen by visitors from urban areas, and we feel that this is as much a part of the local environment as the lava." [73] Sky interpretation had become "an integral part of the interpretive program at Craters of the Moon," reported by Superintendent Hentges three years later, yet rather than expand the program, Hentges stated that the monument would first attempt to improve the quality of the program. Quality depended on the expertise of the monument's naturalist staff, which varied from year to year and person to person. These conditions caused the program to occur sporadically, supplemented by the San Francisco Sidewalk Astronomers who conducted sky interpretation with three-day presentations for several years in the early the 1980s. [74]

In the end, personal services fluctuated with visitor attendance, funding, and staffing conditions. Interpretation and guided services functioned based on this formula. In a monument where the self-guiding theme predominates, and where only 7 percent of the visitors take advantage of the personal activities, the program receives continual reassessment by managers. The most recent appraisal began in the summer of 1991. For a two-week period at the end of the season, the interpretive program experimented with roving patrols, point interpretation, and evening strolls, rather than relying entirely on guided activities. All three had been tried at some point in the past. Proving to be effective--fitting in well with the short-term visitor and staffing levels--some of these activities were resurrected as part of the interpretive program. [75]

THE PROGRAM: NONPERSONAL SERVICES

The self-guiding theme has directed the interpretive program at the monument in the form of nonpersonal services, and comprises a bulk of the program itself. A variety of factors influenced this development, namely the short-term visitor, the close proximity of the monument's volcanic features, and the fluctuations in the size of the seasonal staff and annual budget. Consequently, the combination of a self-guiding road and trail system, waysides, publications, and facilities enable the visitor to both understand and experience the monument with as much ease as possible.

VISITOR CENTER

Finished in March 1958, the visitor center provided the monument with its first interpretive facility and the key component of the young program. Situated near the highway and high enough to overlook monument scenery, Craters of the Moon's visitor center advertised the presence of the National Park Service and attracted visitors to the building. There they could view the volcanic terrain and learn more about it before embarking on the self-guided loop drive.

The monument's 1956 museum prospectus called for the use of museum exhibits, panels, and audiovisual media in the new visitor center to introduce and explain the weird volcanic phenomena and life found within this landscape to the visitor. With Superintendent Floyd Henderson's administration, monument officials proceeded to set up the visitor center's museum. Display cases, panels, and a relief map visually related the complex story of basaltic volcanism and associated natural history contained in the monument. An important and popular device was the three-minute eruption film of Hawaiian volcanism which concluded the visual narrative. [76]

When installed in May 1959, the automatic projector (with film tree) soon proved to be the most "effective means of interpreting the area," [77] Henderson reported, but malfunctions plagued its operation, damaging films and often excluding this important audiovisual feature from visitor orientation--a situation which continued intermittently over subsequent decades. [78] The usefulness of the short film occupied the majority of the interpretation division's activities at the visitor center. In 1964, for instance, Chief Park Naturalist Edgar Menning advocated expanding the film's length to twenty minutes to convey a more comprehensive story, and proposed constructing an auditorium adjacent to the visitor center capable of seating 150 people. This type of building would solve an inherent design problem in the museum exhibit room, whereby sound from the film spilled out into the room disturbing concentration on other displays. Yet plans fell through and the Park Service dropped the project. Naturalist Dennis Carter had recommended against the longer film and auditorium because the visitation patterns had changed. Rather than the 90 percent estimated in the mid-1960s, only 50 percent of the monument's visitors stopped at the center, and a twenty-minute film, Carter believed, would waste too much of the average visitor's one-to-three-hour stay. [79]

The problem with sound spillage persisted. As detailed by Chief Interpreter David Clark in his 1979 interpretive prospectus, the monument decided to correct the issue by creating a soundproofed alcove for the audiovisual program, which has yet to be built. [80] In 1987 an exhibit development project funded the completion of a new monument video; it extended the play length to five minutes; the troublesome projector/film tree was replaced by a video cassette player/television, and in 1989 the interpretation division installed a laser disc player, thus completing the mission to find a relatively maintenance-free, if not quiet, audiovisual program. [81]

Another of the dominant issues relating to the visitor center has been the condition of

museum exhibits. Completion of the displays was staggered through the late 1950s and early 1960s because of funding limitations. Because of the monument's interpretive design theme, the visitor center museum was dedicated to relating only the essentials to visitors, placing more emphasis on the "exhibits-in-place." Although various revisions and rehabilitations of the displays have occurred in both content and media throughout the last several decades (such as the addition of a topographic relief model, mounted animals for wildlife exhibits, and the incorporation of monument history), the exhibits are around thirty years old. While in good condition their effectiveness has dwindled. In response to this, Harpers Ferry Center undertook a new exhibit program in June 1987, although completion of the project awaits funding. [82]

THE LOOP DRIVE

The loop drive historically has been the route providing access to and linking together the monument's representative features, and so forms the central element of the monument's self-guiding interpretive tour. The road, in an unimproved state, predated the establishment of the monument. The monument's features and relative ease of physical relief determined the general direction of the route. In the 1920s Custodian Paisley helped to establish the loop road as an integral component of the self-guiding concept when he laid out a "five-mile loop trip" for visitors to tour the scenic wonders. [83] Mission 66 reconstructed the road, improving its interpretive function. The master plan of the period, for instance, related the route's significance to the interpretive program: "This seven-mile drive winds through a weird volcanic landscape where carefully selected 'exhibits-in-place,' explained with signs, markers, and wayside exhibits, add perspective and a fuller meaning to the graphic displays in the Visitor Center." [84]

This statement reflected the interpretive concept that the monument's natural environment was on display and that the main occupation of interpretation was to educate visitors through the route's design and media. The primarily one-way road with its pullouts, waysides, parking lots, and trail heads provided visitors the opportunity to experience a unique landscape. At the same time it connected the sites to be interpreted. These are essentially the same today: the North Crater Flow, Inferno Cone, Big Crater-Spatter Cones, Tree Molds and Craters of the Moon Wilderness, Cave Area, and Devil's Orchard. [85] Today, the loop drive is considered successful because it enables visitors to see the representative features of the monument and because it receives some of the most intensive interpretive use. In many cases it is the only contact visitors have with the monument.

SELF-GUIDING TRAILS

The loop drive, like the visitor center, was conceived of mostly as an introductory interpretive device, but it also provided access to the monument's self-guiding trails: North Crater Flow Trail, Tree Molds Trail (formerly Great Owl Cavern Trail), the Cave Area Trail, and the Devil's Orchard Nature Trail. The majority of these trails were in use in some capacity as common paths or designated with rock cairns during the monument's first stages of development. The New Deal work programs served to further develop and extend some of these routes. But the first formal self-guided trail did not come into existence until 1952. In July of that year Superintendent Aubrey Houston and Ranger Robert Zink designed a nature trail on the North Crater Trail; it employed point-by-point interpretation of geology and botany using numbered stakes with descriptive labels attached to each. The experiment lasted two years, when, as Zink recorded, "all the informational cards had been removed [by visitors] from the stakes and all but four of the twelve stakes were taken." Zink went on to describe the setbacks to this self-initiated interpretation, asserting that no "attempt was made to re-establish the Nature Trail since more stakes were not available, no money was available to purchase more, nor were funds available to mimeograph sheets of information for

numbered stakes." [86]

Self-guided trails received more attention and funding in less than a decade with the Mission 66 program. The North Crater-Big Craters Nature Trail was at least partially self-guiding in 1960; however, this format was soon abandoned, and it is assumed that managers considered the trail better suited for conducted walks or scenic views. [87] The first trail to be designated as fully self-guiding was the Cave Area trail in June 1961. [88] At this juncture, the program addressed mainly the story of basaltic volcanism. The trail to the caves was one example, but plans also germinated during this period to interpret natural history in a self-guiding format.

After a survey of the monument's on-site interpretive devices in the fall of 1960, Park Naturalist David Ochsner suggested changes in the themes for some of the trails for the upcoming season. With new research on basic plant succession in the monument available, Ochsner proposed revising the Great Owl Trail interpretive signs to present this theme; furthermore, instead of using the point-by-point and leaflet method, he believed that the signs and imprinted text should tell the story. The naturalist also proposed that the monument develop a self-guiding nature trail at Devil's Orchard, then undeveloped save a parking area and roadside signs. Yet here the theme would differ from the others in that ecology would be the primary focus since the area appeared to support a substantial amount of plant and animal life. [89]

Work on developing natural history themes for both trails commenced in the winter of 1961, when the park naturalist began writing a trail guide for Devil's Orchard and revising the sign text for Great Owl Cavern. Park Naturalist Edgar Menning completed the Devil's Orchard trail in June 1963, drafting the pamphlet, designing the third-of-a-mile loop trail, and setting out the numbered stakes for point-to-point interpretation. In the summer of 1964, Menning also installed an audio station on the trail, which played bird songs for atmosphere. The trail received "numerous compliments," the naturalist reported, and upon visitor requests he further revised the path by adding signs for the names of flowers. [90]

Unlike the progress at Devil's Orchard, interpretation of plant succession for the Great Owl Cavern Trail never graduated from the planning stages. In his January 1968 draft revision of the monument's interpretive prospectus, Park Naturalist Dennis Carter stated he had decided to eliminate the plant ecology theme for Great Owl Cavern. Carter believed that the monument was too small for interpretation of plant succession in two areas; the signs previously designated for the Great Owl Cavern Trail would be installed at Devil's Orchard instead. An additional reason for altering the plan was that construction of the spur road to the Great Owl-Tree Molds parking area changed the trail head location and complicated the installation of the signs in the correct sequence. Carter received some criticism from the regional office for his views on restricting the ecological theme to the Devil's Orchard Trail. Park Service officials worried in a time of growing ecological emphasis within the agency that Craters of the Moon might slight this important topic, since the monument was a predominately volcanic area. Even so, Superintendent Fritz stood by the decision. The trail, however, would not be ignored by the interpretive program. As of the late 1960s, Carter had begun guided walks along the Great Owl Cavern Trail, replacing the self-guiding format. Once the wilderness area was established in 1970, these walks were discontinued; the staircase into the cavern was removed, and the emphasis was placed on the tree molds at the end of the trail. [91]

In this same era, the monument worked on expanding the North Crater Flow Trail and its self-guiding devices. Up until the mid-1960s, the principal feature interpreted was the Devil's Sewer lava tube, [92] to which a three-hundred-yard trail crossed part of the flow from the parking lot and terminated near the monoliths. In his 1961 survey, Park Naturalist Ochsner had recommended expanding the features interpreted at the site, and the final destruction of

the Devil's Sewer feature by visitors necessitated refocusing the program. All of this coalesced into Menning's 1964 proposal to revise the site's interpretation. The naturalist recognized that the loss of the Devil's Sewer had compromised the area somewhat, and so he decided to interpret the North Crater Flow instead, claiming that the "potential of this fascinating area has not been developed...." Menning pointed out that the site was the most popular self-guiding trail even without much development. It was the first site along the loop drive and possessed a variety of volcanic phenomena such as pahoehoe and aa lava flows, squeeze-outs, a pressure ridge, the famous Triple Twist Tree, and plant life associated with pahoehoe flows. And an estimated half of all visitors stopped there and spent ten to fifteen minutes exploring. These elements made the area an "excellent introduction to the monument." Some repetition of the geologic interpretation available on the Cave Area Trail would occur, but the popularity and importance of the North Crater Flow as an introductory site overrode this fact. [93]

Menning planned to interpret primarily the volcanic features and secondarily plant succession. Over the next several years, the monument installed a wayside exhibit at the parking lot and signs for the self-guiding trail. In August 1965 Superintendent Roger Contor and Park Naturalist Arthur Hathaway put the finishing touches on the development by designing a return trail to relieve visitor pressure on the resource; this quarter mile loop trail complemented that concept in operation at Devil's Orchard. [94]

By the end of the decade, the self-guiding trail system was fully developed with only revisions in media and theme. For instance, beginning with a 1972 wayside exhibit plan, the interpretive program has made more use of waysides than signs along these trails, as with other places in the monument, since the plan's approach was for the field devices to bear much of the interpretive information about the resources. Modifications along these lines have taken place at North Crater Flow Trail and the Cave Area Trail in recent years. These changes often carry different messages based largely on new research available since the late 1970s. Furthermore, in the 1980s Chief Interpreter David Clark decided that it was necessary to balance the information interpreted at these sites. For example, he added more waysides to the North Crater Flow Trail to tell a more complete story of and incorporate recent research on the area. Any signs or waysides repeating this information at the caves were removed.

A radical change in content is found at Devil's Orchard. In the summer of 1991, the interpretation division redesigned the trail to discuss the story and importance of resource management at Craters of the Moon. The pilot program experimented with a new guide, new posts, and new (temporary) waysides. The intent was to interpret resource management issues occurring at Devil's Orchard and the monument in order to involve the visitor in understanding the problems faced by managers and the public in national park areas. After receiving a positive response, the monument planned a full-scale trail renovation for 1992 with a substantial grant from the National Park Foundation. [95]

WAYSIDES, SIGNS, AND OTHER MEDIA

In the self-guiding format, interpretation relies on some device to convey the interpretive message to visitors. In the monument's first decades, signs were indicative of the state of the program; enameled metal signs, for example, offered only descriptive information, such as the names of sites. As part of the Mission 66 program, the 1957 sign master plan continued this descriptive trend, establishing the monument's first formal interpretive sign program, and phasing out the enameled signs and replacing them with routed wooden signs. In addition, the Mission 66 program was responsible for installing the first wayside exhibits at the monument's principal features, waysides which underwent various design changes as did monument signs. [96]

In response to the call for more media in the 1964 prospectus, the 1965 sign and wayside exhibit plan incorporated new information on engraved aluminum signs and covered waysides. However, the 1972 wayside planning team introduced a new direction in field interpretation, stressing the idea that the field media should "carry much of the interpretation of volcanic features." The document also reflected much of naturalist Carter's contention in the late 1960s that the area was oversigned as a result of the 1964 media prescription. Exhibits could convey more information with less devices. In the late 1970s, the monument installed some twenty fiberglass modular waysides, beginning the slow process of eliminating the metal signs. [97]

Although it was thought that the 1972 exhibit plan would meet the monument's future needs, that was not the case. As with other aspects of the interpretive program, new research and lack of comprehensive scope required revisions within a few years. In the early 1980s, another wayside exhibit plan was undertaken and finally completed in 1988. As a result, the monument installed six new waysides and identified the need for twelve more. Many of these reflected the new emphasis on resource management and history in interpretation. Two waysides, for instance, interpret air quality and history, both relatively new subjects to the program. The air quality display incorporates interpretation of the Oregon Trail to strike both a historical context for clean air and inform visitors of the presence of the historic Goodale's Cutoff in the monument's northwestern corner. Both were placed at a pullout on the monument's eastern flank using a landmark for overland travelers, Big Southern Butte, as a target site twenty-five miles distant. [98] A third wayside was placed on the visitor center patio; it exhibits maps and photographs of the monument as a way to entice visitors to tour the loop drive, and a photograph displaying impacts of off-road driving and listing monument regulations attempts to instill a sense of responsibility in park visitors. Similarly a fourth wayside at the Big Craters-Spatter Cones informs visitors of the site's fragile nature and reasons for restricting off trail use in this area.

AUDIO STATIONS

During the 1960s, the monument expanded its on-site media. In 1964, for example, Superintendent Davis and Park Naturalist Menning decided to install audio stations as a way to both educate visitors about the monument's resources and fill in for exhibits that had yet to arrive. Three stations were put into operation: one outside the visitor center as an orientation device; another on the Devil's Orchard Trail for bird songs, and the last at the crest of the Big Craters Trail describing the southern view of the Spatter Cones and Great Rift. After several seasons, the stations turned out to be a maintenance burden and of "questionable interpretive value." Their physical presence was unnatural and appeared to detract from more than aid interpretation. Park Naturalist Carter reported in 1968 that the monument staff removed two of the three for these reasons. Though in disfavor, the mason-block structures were not forgotten. In the early 1970s, Superintendent Fritz resurrected the audio stations. He first replaced the station in Devil's Orchard in 1971 in order "to restore an attractive program on birds." [99] Second, he returned the Big Craters station to operation but in a new location, near the parking lot and wayside, where it encountered more use than in its original location. This relocation, from crater rim to road level, also mitigated erosion of the crater wall, since earlier visitors short-cut down the slope returning to the trail head. [100] By the early 1980s only the Devil's Orchard audio station remained in operation, having been augmented with a solar panel to interpret energy conservation. But it, like the others, required too much maintenance to be an effective interpretive device. Once the trail guide was revised in 1982, omitting the reference to the station and bird songs, it was removed. [101]

PUBLICATIONS

The printed word provides an invaluable service to convey Crater's interpretive and

management messages to the public. Without some type of publication service, most visitors would be at a loss to understand the monument's resources. At the monument the availability of printed information corresponded directly to the availability of scientific research. Consequently, Craters of the Moon relied on the 1928 publication and subsequent revisions of Harold Stearns' pamphlet, "A Guide to Craters of the Moon," for fifty years. While other publications were available since the formation of the Craters of the Moon Natural History Association in 1959, Stearns' booklet constituted the monument's handbook. In 1978, the monument received its first natural history handbook, Life in a Volcanic Landscape. At that same time, new research being conducted by the United States Geological Survey outdated Stearns' work and eventually the more recent handbook. To address this issue, in 1991 a six-year-long project by Harpers Ferry Center culminated in the printing of the monument's second handbook.

Over the last decade, the interpretation division has aimed to approach publications through a tiered concept. Free publications such as the park folder, activities handout, and park newspaper (started in 1981) relate the basic park information, as do more topic specific handouts. Inexpensive publications form the next level, providing information for the self-guided tour of the monument and elementary information on the monument's resources. The park handbook and more subject-specific publications furnish more comprehensive, yet general, source materials. The succeeding stage leaves the park itself and considers the monument and the region of the Snake River Plain.

NATURAL HISTORY ASSOCIATION AND VOLUNTEERS

From its inception in 1959, the Craters of the Moon Natural History Association has proven to be an invaluable ally in the interpretive program. Its main goals are to assist in better interpreting the park and to provide funds for research to accomplish this task. As a business it has remained independent of the larger regional natural history association, and has matured from a small-scale informal operation to one of sophisticated dimensions. In general, the association has provided funding for research projects, special programs, and publications for the monument, in addition to assisting in underfunded interpretive goals and management objectives. [[102](#)]

Like the natural history association, volunteers are used to complete important projects for the interpretive program. Shortly after the 1969 Volunteers in the Parks Act, the monument recruited volunteers to assist interpretation, but recruitment faces two problems: location and housing. Since the monument is not situated near a large urban area, it cannot draw potential volunteers from a sizeable population base. Travel expenses to Craters become excessive for most volunteers. This situation is further compounded by limited housing at the monument. Nevertheless, the volunteer program has been strong, especially in the 1980s when it grew in size and accomplishments. Two types of volunteers are employed; those who work on small, general projects, and those who work on more specialized assignments. The latter projects are completed by summer interns. Beginning in 1989, the monument recruited college students locally and nationally whose academic training could be applied to more complex projects. And as of 1990, Craters of the Moon offered two internships, one for interpretation and one for resource management; the majority of funding for travel, housing, utilities, uniforms and a stipend came from the natural history association. The intern program benefits the students who receive academic credit while providing critical assistance to the monument's interpretive programs. [[103](#)]

SUMMARY

Interpretation is central to relating the significance of the monument to the visitor. Three general themes over time have been applied--geology, natural history and human history.

Interpretation has also been important for imparting a variety of other information to the visitor such as safety, Park Service themes and concerns, environmental topics, and resource protection. The main philosophy has been to enable the visitor to understand and appreciate the volcanic landscape; this goal has required information based on sound research, which has not been available until recent times, as well as personal and nonpersonal services. These services attempt to accommodate the short-term visitor, who remains on average of one to three hours, through guided and self-guided activities, audio-visual media, publications, and special programs. One of the most long-term concerns has been how much emphasis to place on each service given trends in visitation, staffing, and funding.

[<<< Previous](#)

[<<< Contents >>>](#)

[Next >>>](#)

adhi/chap8.htm
Last Updated: 27-Oct-1999

CRATERS OF THE MOON

Administrative History



Chapter 9: DEVELOPMENTS

OVERVIEW OF NPS DEVELOPMENT TRENDS

To build public support for parks in its founding years, the National Park Service encouraged tourism. By welcoming automobiles, and developing roads, campgrounds, and hotels, the agency enabled more Americans to enjoy the nation's wonders, and visitation soared. The Service's leaders, however, never intended to grid the parks with roads and mar the landscape with subdivisions, but rather to make the most spectacular sites accessible to tourists and concentrate other developments in a central location--leaving the majority of park lands as wilderness. While this approach reflected the Park Service's mission to balance visitor use and resource protection, park promotion attracted larger and larger numbers of tourists pressuring the agency to increase development. [1]

During the 1930s, the New Deal emergency work relief programs injected park management with the necessary manpower and appropriations to meet these growing demands, marking one of the most important phases in park developments. The next phase, perhaps the most significant, responded to an even greater crisis. The war years had backlogged critical maintenance and development projects, and a visitor explosion in the 1950s had swamped the already inadequate park physical plants. In the mid-1950s, Mission 66, the Park Service's ten-year rehabilitation program, arrived and with over a billion dollars in appropriations renovated the overwhelmed facilities of the national parks. The program strove to upgrade all areas, some for the first time, repairing and constructing thousands of miles of roads, campgrounds, employee housing, and sanitation systems. Innovations such as the visitor center incorporated interpretive facilities and administrative offices, containing in some instances concessionaire services and auditoriums. Since this period, development programs in the Park Service have concentrated mostly on maintaining Mission 66 facilities, but as has often been the case, increased visitation and staffing have outpaced the capacity of existing park developments. [2]

THE COMPACT MONUMENT: A DEVELOPMENT OVERVIEW

Craters of the Moon's development history conforms to the basic phases of Park Service's, detailing the agency's thrust to accommodate the public and to assist in the monument's management. The monument also possessed its own set of circumstances that influenced its development. A combination of environmental and administrative factors restricted the location of facilities to the northwestern section of the monument in a small and confined precinct. This design scheme reflected in one sense the agency's desire to showcase the volcanic landscape's most exemplary features and at the same time protect other natural phenomena. In another sense, though, it was the landscape that determined this approach, for the volcanic features, compressed into a small area, meant that no extensive developments were necessary to present them to the public. Moreover, the lava flows influenced a "confined" administrative development, offering only a few places in which to build

administrative structures and visitor accommodations without disturbing valuable resources. These physical restrictions also corresponded with the Park Service's belief that the monument's management and protection required only the "bare minimum" of staff and facilities.

THE EARLY YEARS

The Park Service did not inherit any structures, only common-use roads and trails, when it began managing Craters of the Moon in 1924. In planning the formation of the monument's physical plant, the Service envisioned the area as a "wayside" for Yellowstone National Park travelers, providing "sanitary conveniences" for tourists and increasing the isolated monument's popularity. Only a small staff and minor improvements were needed to protect the resources and service the public, and in 1925 Assistant Director Horace Albright estimated that a five-year, \$35,000 to \$50,000 comprehensive development program could accomplish this task. This level of funding never appeared, but the need for improvements remained. Although convinced that the volcanic terrain formed a barrier to resource destruction, Albright and other bureau officials believed that this environment performed the same magic on tourists.

The main emphasis in planning at this early stage, then, was softening the monument's image as a hostile place. In the monument's "first" development plan in 1927, Yellowstone National Park Civil Engineer Bert H. Burrell stressed the importance of accommodating visitors in the monument's beautiful yet harsh landscape.

It must be considered that the entire area of the monument is to a large extent forbidding to the average tourist in the present state of development. To hold the interest of the average tourist we must not alone present natural phenomena or beauty, but must cater to his comfort; none but those of purely scientific mind will endure the discomfort of the present campgrounds without conveniences usually furnished the motoring public such as suitable camping places, toilet facilities and adequate water. [3]

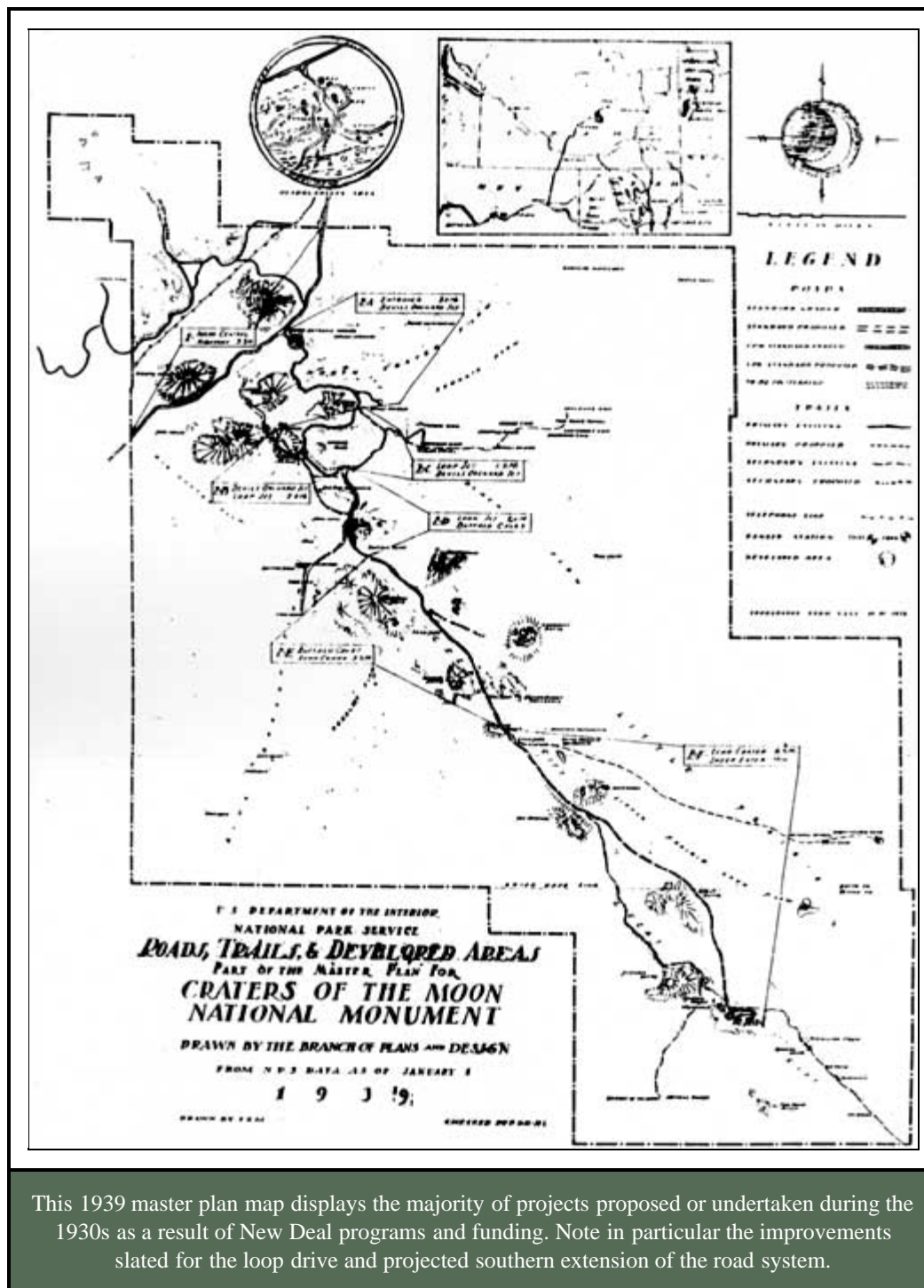
The engineer proposed four major construction projects to address these concerns. First and foremost was the need to acquire a permanent and adequate water supply; second was to provide the requisite "sanitary" facilities for camping; third was to assure proper administrative control through development of a single entrance, funneling visitors through a central area, complete with a checking station and residence for a custodian; and fourth was to improve roads and trails through widening and grading, and thereby improve visitor access and increase safety. [4]

While appropriation bills in the late 1920s went unapproved for construction purposes, Burrell's report established the main tenet of the monument's future development pattern--centralization, that all development should be confined to a central area. In 1931 the most important development, the water system, was completed, ensuring that tourists could visit the volcanic region in some modicum of comfort and that managers could live on-site without any great degree of hardship. More importantly, the water system influenced the concentration of administrative developments in the monument's northwestern corner, in the same zone they exist today, for here it was more convenient, economical, and practical to cluster administrative facilities and visitor services in one location than to spread them throughout the monument.

THE NEW DEAL

The New Deal emergency work relief programs in the 1930s granted the monument its first

significant funding to carry out important development programs in the form of road and trail construction. These improvements allowed visitors to tour the volcanic terrain with greater ease. The additions of a comfort station, warehouse, and custodian's residence further contributed to the basic comforts and administrative operations of the monument. Although development was confined to the monument's northern reaches, the Park Service also addressed the idea of southern extension along the Great Rift during the 1930s. A somewhat controversial topic, alive since the late 1920s, expansion into the southern section of the monument was never fully acted upon, but was an option considered for several decades.



This 1939 master plan map displays the majority of projects proposed or undertaken during the 1930s as a result of New Deal programs and funding. Note in particular the improvements slated for the loop drive and projected southern extension of the road system.

THE WAR YEARS AND AFTER

One of the main reasons the Park Service did not depart from the confined development

pattern was that it worked well in presenting and protecting the monument's volcanic formations. Regional Director O. A. Tomlinson favored self-contained development for this reason in the early 1940s, influenced as well by the World War II conditions of low visitation, funding, and staffing. Subsequent planning strategies reflected this opinion.

Yet this focus only met the smallest amount of administrative needs. By the 1950s managers had consistently complained of the decrepid conditions of the headquarters' buildings and the absence of other essential structures and facilities. Superintendent Aubrey F. Houston, for example, proclaimed that the monument's "installations are substandard and obsolete," highlighting the consistent neglect of administrative facilities in the development program. Visitation also skyrocketed during this period catching the monument unprepared; physical improvements, Houston noted, were needed in all areas at once, since none of any consequence had occurred for decades. [5]

MISSION 66

These shortcomings were finally addressed with the Mission 66 program, which formally established Craters of the Moon's physical plant--in one comprehensive approach. Indeed the greatest single development achievement, the program was estimated to cost around \$1 million dollars, and Craters of the Moon was one of the first park units in Region Four to receive the benefits of the rehabilitation program. Most of the construction occurred between 1956 and 1961, but the major work was accomplished between 1956 and 1958. The program affirmed both the compact development design, by concentrating improvements in the northern portion of the monument, and the area's day-use visitation pattern, by removing the concession services. A new administrative site was constructed just below the highway, complete with a multipurpose visitor center, containing museum and administrative offices, as well as separate employee housing and maintenance buildings. The monument's roads, trails, and campground were also redeveloped and improved. Other improvements and new construction consisted of a new comfort station, utilities, and water and sewage systems. [6]

POST-MISSION 66 ERA

Mission 66 planners believed that the developments implemented in the late 1950s and early 1960s were the most needed for the short and long term. Rising visitation, however, forced managers to address new development programs in the ensuing years. Monument officials anticipated nearly half a million visitors by the mid-1960s, double the number of the previous decade. Even though the Mission 66 program had apparently upgraded the monument's facilities to accommodate this number of visitors, Superintendent Roger Contor recognized that more growth was inevitable and development options to relieve congestion were requisite. Thus in his 1966 master plan, he proposed expanding the road system to the south, and relocating the administrative offices and campground to the northern unit. [7]

These plans were never acted upon, in part because Contor's successor, Superintendent Paul Fritz, objected to any new developments within the monument in order to maintain the proper balance of preservation and use. Yet Fritz entertained more far-reaching development plans in his 1973 draft master plan. Although the bulk of the document was given over to his proposal to enlarge the monument southward along the Great Rift, it also recognized that the monument's administrative and visitor service facilities would eventually reach the saturation point, and ideally new facilities would have to exist beyond the monument's boundaries. [8]

Fritz's plans were rejected by the regional director, but the superintendent's scheme indicated that changes of some kind would have to be made. Mission 66 developments eventually needed to be reassessed. Monument managers almost since the completion of construction in the late 1950s and early 1960s expended a great deal of time and funding maintaining the

physical plant in the extreme climate. Roger Contor had noted in 1965, for instance, that the entire "package development is getting older..." requiring extensive maintenance and in some instances reconstruction. [9] Park Service engineers failed to understand the monument's harsh environmental conditions of extreme heat and cold; poorly insulated buildings and bad road surface marked two of the flaws. In the 1970s and 1980s, Superintendents Robert Hentges and Robert Scott initiated extensive maintenance programs for monument facilities. Moreover, as the area's staff grew, office and building space were expanded until by the late 1980s it was apparent that no more remodeling was possible.

By this time, the monument's personnel had increased beyond the capacity of the headquarters complex. Visitation, similarly, has increased and visitation patterns have changed, extending the traditional season. These trends gave rise to the 1991 draft general management plan, initiated by Superintendent Robert Scott. It reported basically that the Mission 66 headquarters design had outlived its usefulness. The headquarters complex with combined visitor center, maintenance buildings, park housing, and campground--all located in a centralized area--caused traffic congestion and parking problems; it also caused monument operations and visitor services to conflict. The close proximity of the campground to staff housing afforded little privacy to employees; likewise for the visitors, the location of employee housing diminished the quality of their camping experience. Furthermore, the monument's campground and road system were not compatible with the growing number of recreational vehicles driven by tourists. To correct these problems, some of which were Mission 66 flaws, the plan proposed a new design--one that separated existing administrative facilities from a new visitor center and monument entrance. Thus, the plan would improve the quality of the visitors' experience by reducing congestion and visual intrusions and by providing better facilities and roads. It would also improve the quality of the work environment for monument staff, expanding office space, reducing visitor interruptions, and adding privacy to employee residences. [10] The general management plan, in the context of previous design themes, stated essentially that the idea of the compact design was effective as long as staffing and visitation remained low enough to maintain a centralized development. These conditions were out of balance.

THE PHYSICAL PLANT

ROADS

To an isolated area like Craters of the Moon National Monument, roads played a particularly important function in routing tourists to the area and circulating them through it. The highway traversing the monument's northern corner formed part of the historical travel route skirting the foothills of the Pioneer Mountains. During the early settlement period of the 1910s and 1920s, the citizens of Arco and Hailey developed the trail into a rough road to allow sightseers to reach the monument. In 1922 these same individuals created the double entrance system (see map), known as the Arco and Hailey entrances, enabling drivers to enter the monument from the east or west, respectively, along Highway 22. [11]

Concurrently, this group established the loop drive. Members from local communities--"Sunday Rock Pickers"--constructed a road beginning near Martin and extended it south into the monument hugging the cinder cone edges, through the old eastern entrance. From there it led south of the old headquarters site (near the campground), over the North Crater Flow to Registration Waterhole, and around Paisley Cone to Devil's Orchard. There it branched, one section heading toward the Caves Area and the other to the Big Craters. [12]

Inheriting this primitive road system in 1924, the Park Service has changed little in its design, for it successfully led visitors to the monument's most scenic sites. It was this

guideline that governed road developments in subsequent decades along with programs for modernization and maintenance. Although the Park Service planned a five-year program for road improvements, among other things, budgeting some \$50,000, the monument's first custodians were allotted only a few hundred dollars for road work. [13] Even with this "limited means," in 1926 Custodian Samuel Paisley reported that he improved the entrance into the monument and construct "fairly good roads...to the extinct craters." It also seems that Paisley might have finished the loop drive route, for he stated that he laid out a loop trip of five miles, apparently completing the route from the Big Craters around the southern side of Inferno Cone to the Devil's Orchard spur road. [14]

In the summer of 1927, Assistant Civil Engineer Bert Burrell's impression of the monument's road system was that the present conditions were adequate, provided that a long-range program was planned. He recommended, however, changing the circulation system in order to centralize the entrance to aid the one-man staff in visitor contacts and campground control, and at the same time aid the concessionaire's business located on the proposed entrance road. When the sudden water shortage occurred shortly after Burrell's inspection, tourists began congregating at Crater Inn for water. Complying with the engineer's suggestions, Custodian Robert Moore constructed the new entrance west of Sunset Ridge, abandoning the former double entrance, by the fall of that year. [15]

The general activity during the late 1920s and early 1930s was road maintenance, although a new administrative, two-track road was laid in the northern unit as part of the water system construction in 1931. In some cases, road improvements were necessary to protect monument resources. In 1932 Custodian Burton LaCombe lined the loop drive with rock barriers to keep motorists from driving onto the delicate cinders. [16]

LaCombe's work anticipated the New Deal work projects entered into over the next several years. The major road work, recommended by Custodian Albert Bicknell, was covered under a Public Works Administration project for widening and improving four sections of the monument's road system, beginning on May 8, 1934. The first road section worked on was the segment of Highway 22 crossing the monument. Originally built by volunteers, the road was nothing more than a trail. Widening the road and removing its blind curves, Custodian Bicknell noted, allowed two cars to safely pass, decreasing dangerous situations as travel increased. [17]

Next, the work crew eliminated the two entrance system. Although Moore had abandoned this entrance system in 1927, motorists still entered the monument from two different directions across the flat, sagebrush-covered terrain near the highway. Both east and west entrances were short roads leading into the monument from the highway, approximately a quarter of a mile apart. In the sagebrush the roads were nearly invisible from the highway, and visitors often passed the monument without seeing them. The roads were also narrow and dangerous. To correct these problems, workers closed the western, or Hailey Entrance, a third-of-a-mile road paralleling the highway, and constructed a "Y" at the eastern, or Arco Entrance, [18] since it was both a shorter and safer route from the highway--now visible with sagebrush cropped and a cinder surface applied. The final two narrow sections of the monument loop drive were likewise widened, straightened, graded and cinder-surfaced for better driving conditions. These included the two-mile stretch from the headquarters to Devil's Orchard junction, and the spur road leading from the loop drive to the Big Craters parking area. Additional road work entailed construction of embankments and rock barriers to keep cars on the road. [19]





Auto travel through the monument's rough lava flows underscored the importance of a good road system, ca. 1920s. (*CRMO Museum Collection*)

SOUTHERN EXTENSION

Along with improving the existing road system, the Park Service contemplated extending the system south from Inferno Cone to Broken Top and down along the Great Rift to Echo Crater, although some road plans name the more distant Sheep Trail Butte as the final destination. The subject was broached in the 1920s when the communities of Rupert, Kimama, and Minidoka in southcentral Idaho lobbied for construction of a highway through the vast lava country to the north, seeing this as a way to strengthen communication and commerce with the communities of the upper Snake River Plain. In some cases, the proposed routes would have intersected with the monument's road system from the south, forming a southern entrance, and opening up a new region of the monument to visitation. [20]

The Park Service expressed other reasons for extending the road system within the monument. Primarily these centered on exposing visitors to as much spectacular scenery as possible without being repetitious and incurring excessive administrative costs. Not all of the monument's features were seen from the loop drive, and viewing the Great Rift, with its relatively gentle terrain, was an attractive prospect.

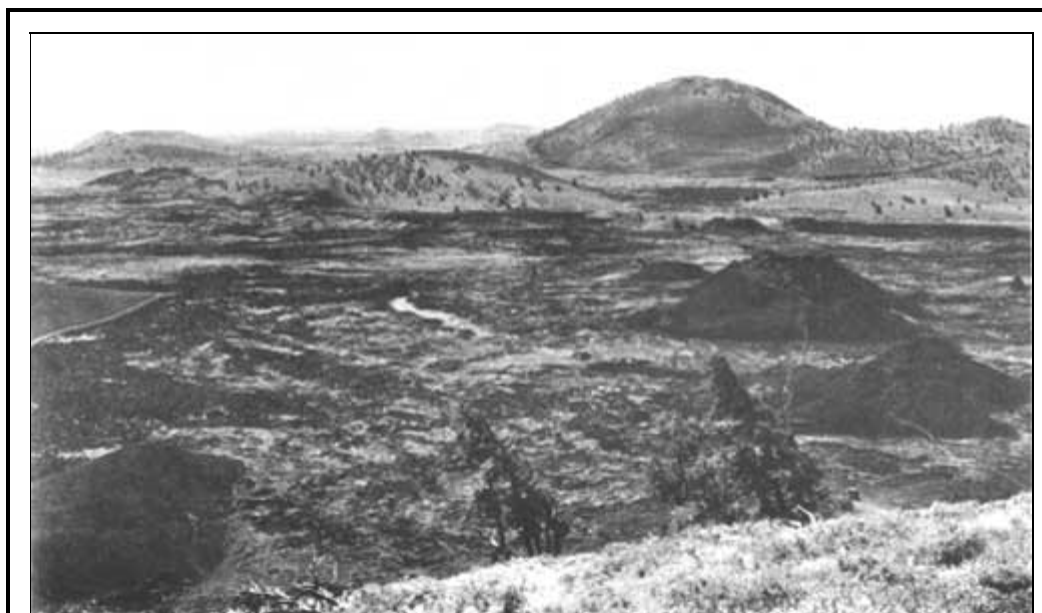
Southern extension formed part of the general road development program for the monument. In 1926 the National Park Service commissioned the Bureau of Public Roads to study the monument's road system, in order to "determine the progressive road units for [a] construction program within the Monument, which would reach points of main interest and ultimately form a well correlated system." The report recommended a road system extending from the Idaho Central Highway in the northern section of the monument to the southeastern section ending at "Sheep Trail Mountain." [21]

These plans lay on the back burner, limited by appropriations, while monument managers concentrated their efforts on improving the main loop drive. Nevertheless, they continued to propose a southern extension. In the late 1920s, Custodian Moore contended that a southern road would open up an interesting and scenic part of the monument not already available to tourists. The custodian stated that this was a natural addition; an "old wagon road" already ran across the lava from the existing loop drive to Broken Top, and from there along the moderate topography of the Great Rift. The costs were economical. The only construction

necessary would be to Broken Top; from there, the wagon road was well enough established for automobiles to proceed, unimpeded, to Echo Crater and beyond. [22]

Administrative realities, again, forestalled plans. Although Custodian Burton LaCombe located a route over easier terrain for what had come to be called the "Echo Crater Road," Assistant Landscape Architect Kenneth C. McCarter recommended in 1933 that the road project be eliminated. "With insufficient ranger assistance the Custodian would be unable to patrol or control the area which would be opened to the public." Instead funds during the New Deal era were diverted to construct trails adjacent to the present road system. This was considered a logical progression of development prior to extending the loop drive, and a more efficient means of management. [23]

In 1935 Custodian Albert Bicknell requested another Bureau of Public Roads survey of the proposed Echo Crater Road. On August 12, Assistant Highway Engineer J.S. Scofield, Bicknell, and Landscape Architect Frank Mattson conducted the inspection and concurred with the original survey--that an approximately four-mile road should begin from the south side of Inferno Cone and run to Little Prairie Waterhole. From there the road would follow the Owl Cavern Trail (built in 1934 from Inferno Cone south to Broken Top), swing west, and then southeast wrapping around the base of Broken Top to Buffalo Caves. Then it would advance to the northeast of Big Cinder Butte along or near the old wagon road to Trench Mortar Flat, leaving the road to pass over a saddle east of Coyote Butte and drop down to an area just east of Echo Crater. And finally it would end in a loop road constructed between this point and Little Prairie Waterhole. [24]



Looking south toward Big Cinder Butte, a portion of the existing loop drive and trail system in the foreground, and the proposed region for southern expansion in the distance. (CRMO Museum Collection)

The Broken Top Spur

Associate Director A.E. Demaray approved the Echo Crater Road in the first part of 1936, and asked the Bureau of Public Roads to continue with plans for road construction following the above route. Generally, the road was viewed as a valuable addition to the visitors' experience. Some controversy surfaced, however, regarding the road's location at Broken Top. From a geologic standpoint the road section was deemed worthy because it accessed the Great Rift. Yet there were questions of aesthetics. While the road would enhance the visitors'

experience by penetrating a new and interesting part of the monument, at the same time it would intrude on the scene, marring the monument's pristine condition. Hence, the monument faced the issue of preservation and use head on.

The Bureau of Public Roads' survey proposed that its low-line route was the best choice; it traversed the lava flows at the base and some distance from the western edge of the cinder cone, leaving the slope intact. The other alternative was the high-line road which skirted the west slope of the cinder cone, cutting a road bed into the feature itself. Having weighed the options, Associate Director Demaray granted his approval for the low-line route because it "will obviate the necessity of side hill bench construction down the south slope of Broken Top Cone." [25] In effect, this option scarred the landscape less and saved on construction costs.

Two subsequent NPS surveys challenged Demaray's choice. It was generally agreed that both alternatives had advantages and disadvantages. The high line route offered a panoramic view of the lava fields below Broken Top but scarred the slope with a side cut, while the lower route inflicted less damage on the resource but offered no view. Thinking the view more valuable, Region Four District Landscape Architect Harry Langley supported the high-line route. In his extensive report released in August 1936, Region Four Geologist J. Volney Lewis voice a similar opinion. To support his position, Volney established what he called the "basis of choice." This method weighed the values of the resources and visitor experience in both proposals. The geologist recognized that road construction would injure the landscape no matter where it was located. However, the geologic features in the lava flow below Broken Top were more valuable than its "featureless slope" and therefore worth the sacrifice. The geologists recommended the higher route for its view and its protection of more significant surface features. [26]

Although available records offer few details about the final decision, the Park Service selected the low-line route. The date when the road section to Broken Top was constructed is not known. [27] By at least 1940, a "minor cinder road" existed across the lava fields to the cone, where a parking lot was also established. At this point, the Park Service turned its attention to further extension of the road to Echo Crater and points south along the Great Rift. Sketchy at best, details about the condition of the southern road system suggest that some improvements took place and that the Park Service was still interested in expanding southward. [28]

Some of the driving force behind this trend was Custodian Guy McCarty, who seems to have been eager to open new areas up to visitors and make their trips to the sites as convenient as possible. He reported in July 1940 that he had improved the old wagon road along the Rift so that "it is now possible to drive to Trench Mortar Flat and the Tree Molds," as if doing so would cause formal construction. [29] McCarty also wanted to build a road across the existing trail to Great Owl Cavern. As it stood now, the extreme roughness of the trail prevented many visitors from seeing the cavern. Any "ladies wishing to make the trip have to pass over lava and cinders which are extremely hard on their shoes [which] means that most ladies, and lots of men," McCarty stated, "refuse to make the hike." Assistant Regional Director B.F. Manbey concurred with McCarty during a May 1940 inspection, and he proposed that a minor road could be built without any significant damage to the resource; construction required only widening the trail, and the work was justified given the significance of the cavern. [30]

In the early 1940s Regional Director O.A. Tomlinson addressed both proposals. On the one hand, he stated that construction of a "Great Rift Road" south of Trench Mortar Flat was of questionable merit. It would duplicate features found in the northern area of the monument already accessible to automobiles. A road as far south as Sheep Trail Butte would only renew

pressure for construction of approach roads from southern communities and for the Park Service to open a southern entrance. All of this would only "add to the expenses of administration without affording much additional interest or value to users of the Monument." [31] For these reasons, the regional director discontinued plans for the Great Rift road extension on August 21, 1944. [32]

On the other hand, Tomlinson greeted the Great Owl Cavern road proposal with a more positive response, attracted to the lower costs and ease of construction. It also gave life to a new proposal--extending a road section from Great Owl Cavern one way around the "base of Big Cinder Butte to connect with the Great Rift road in Trench Mortar Flat." This would "open up splendid views of the Blue Dragon Flow." [33] As with past proposals, Tomlinson was interested in opening up scenic areas of the monument that contained unique volcanic features. But he was only interested in doing so if the projects were economically and administratively feasible. Furthermore, they needed to meet the monument's purpose and add diversity to the visitors' experience, rather than duplicate examples of volcanic formations associated with the Great Rift. Although the Great Owl Cavern road and Big Cinder Butte extension were favored by Tomlinson, World War II placed the new proposals on hold.

THE MONUMENT HIGHWAY

Not all attention was focused on the southern end of the monument during the 1930s and 1940s. A significant improvement occurred with the realignment and resurfacing of four miles of the Idaho Central Highway passing through the northwest corner of the monument. In 1938, two public interest groups, the Eastern Idaho Association of Civic Clubs and Southern Idaho Inc., spearheaded the better roads movement by promoting tourist development in eastern and southern Idaho. Their campaign won support from the Park Service, at the prodding of Custodian McCarty. But improvement could only happen if the state received federal highway funding, and that could only happen if the state owned the road. Not considering the road its own in the first place, the National Park Service ceded the approximately ninety-four-acre strip of land to the state of Idaho in a July 18, 1941 proclamation. And in late August 1942, Federal Aid project 128-E (1) was completed. [34] Construction straightened the highway across the monument, eliminating the former connection to the Arco route. The road, having been relocated, headed more easterly than northerly, reduced the mileage to Arco, and entered the monument slightly south of its former location. [35]

By the 1950s, the Park Service regained its development momentum. In his 1950 master plan, Superintendent Aubrey Houston addressed some familiar road issues. In the northern section, he recommended construction of a new entrance road that ascended Sunset Ridge. There motorists could look out across the monument before descending to the loop drive. Most attention, however, was aimed at the southern district. Houston recommended that the spur road to Broken Top be reconstructed, and renewed the call for construction of a primary road to Great Owl Cavern and a secondary road to Echo Crater. [36] The superintendent's plans underscored the Park Service's continued interest in southern expansion. In the summer of 1955, the monument fulfilled some of this goal when it straightened, widened, and filled the one-mile spur road to Broken Top (also known as the Great Owl Cavern parking area). According to Superintendent Everett Bright, the road work was a success because it increased the number of visitors to the Great Owl Cavern. [37]

Yet further construction either toward Echo Crater or Great Owl Cavern was not undertaken. Even though the 1949 Coyote Butte fire triggered the bulldozing of a dirt road to the Echo Crater, the Mission 66 prospectus reflected past policy decisions, stating that this route would only open up an area with features seen elsewhere in the monument. Likewise, extending the road to Great Owl Cavern was left out of the construction program, although the prospectus

proposed doing this in the near future. Planning after Mission 66 strove to retain the primitive quality of the southern region. Superintendent Contor, who conducted the monument's wilderness study in the mid-1960s, recommended extending the loop drive around Big Cinder Butte as one final outlet for future increases in visitation. However, Contor's successor, Paul Fritz, revised the wilderness boundaries to include the butte and exclude the road. And the wilderness designation of the southern region of the monument in 1970 terminated any more planning for roads beyond Broken Top. [38]

MISSION 66 CONSTRUCTION

The road system at Craters was as old as the monument itself. As late as the mid-1950s, it remained unsurfaced; wind eroded the cinder surface causing high annual maintenance costs, and road hazards annoyed the motoring public. Paving and reconstruction during the Mission 66 program solved many of these problems.

Beginning in the summer of 1956, work commenced on the new headquarters roads, curbs, gutters, sidewalks, and parking areas. The only significant design change was the relocation of the entrance road slightly to the west of the new headquarters site, since it would have divided the new complex. The following summer similar work continued, when the campground road and the seven mile loop drive were graded and paved, and sections of the loop drive were revised. Nine adjacent parking areas were also created at scenic views and volcanic features. By 1958 the majority of construction was complete, yet almost as soon as the pavement was laid a new set of maintenance problems arose. [39]

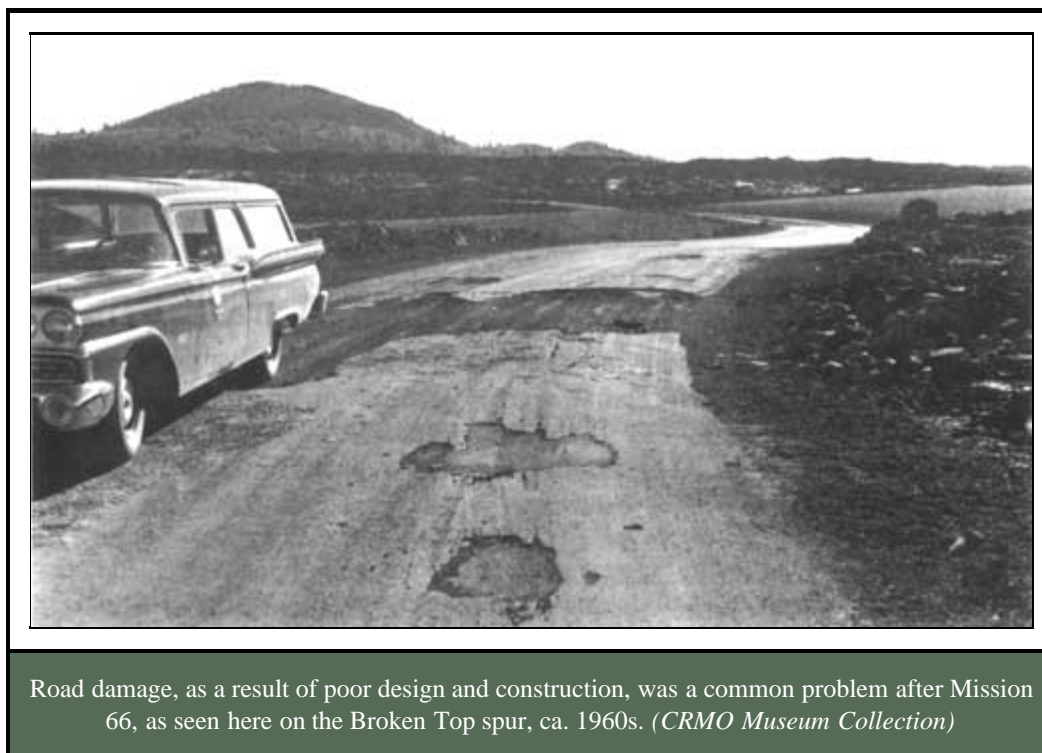
ROAD REPAIRS--THE LINGERING EFFECTS OF MISSION 66

Superintendent Floyd Henderson and Park Service engineers noticed several defects in the road construction, namely in drainage and surfacing. In both cases, funding reductions and a misunderstanding of the monument's environmental conditions compromised design. Thinking the monument a dry place, regional office engineers omitted pipe culverts from the headquarters road system, and heavy winter snows and seasonal rains flooded the area. They also did not take into account snowmelt rising from the cinders. To protect the site from erosion, the regional office initiated emergency construction to correct the problem in September 1958. [40]

Likewise, the loop drive suffered from shoulder and surface washouts and required better drainage. A persistent issue was the poor quality of the road surface itself, which cracked. The reasons for this and how to repair it have been the subject of much debate. Funding cutbacks during construction reduced the quality of the road, and in May 1959, the Park Service allocated additional funds to reseal some sections and to install drainage devices. [41]

In spite of these "corrective" measures, lateral cracks and shoulder erosion formed chronic maintenance issues for the next several decades. Experimental solutions typified the approach to the road predicament. In 1961, for instance, Henderson reported that an asphalt sealant mixture had been applied but failed. By 1965 highway engineers were declaring that the entire road system needed to be reconstructed, and the best method to remedy the current problems was to lay a new asphalt treated base. Records do not indicate whether this material was used but in the late 1960s Superintendent Paul Fritz attempted to rehabilitate the road base where needed and repaved the entire road system. This included, for the first time, the Broken Top Road--which was also revised and extended to its present terminus. [42] Nevertheless, the problem reappeared. Sealing the asphalt and filling the surface breaks provided only temporary relief, since the filler settled into the porous cinder base. This prompted Superintendent Robert Hentges to exclaim in 1974 that until some other method was found "the crack syndrome will continue to plague the monument." [43]

That solution was offered by a 1991 road system study, which offered both short- and long-term solutions. For the short term, fabric material stretched across the cracks and covered with surfacing material would work adequately. But to create a long-term solution, reconstruction was necessary. [44] This work could be accomplished during the road reconstruction called for in the new general management plan. The document maintained that the road's original design suited the monument well; its curvilinear shape conformed to the landscape and connected the most interesting sites. Yet, reflecting changing patterns of use, it was determined to be too narrow for bicycles and recreational vehicles, nor did it allow enough turnouts for people to stop along the road. Current plans call for reconstruction to proceed in the near future. [45]



Road damage, as a result of poor design and construction, was a common problem after Mission 66, as seen here on the Broken Top spur, ca. 1960s. (CRMO Museum Collection)

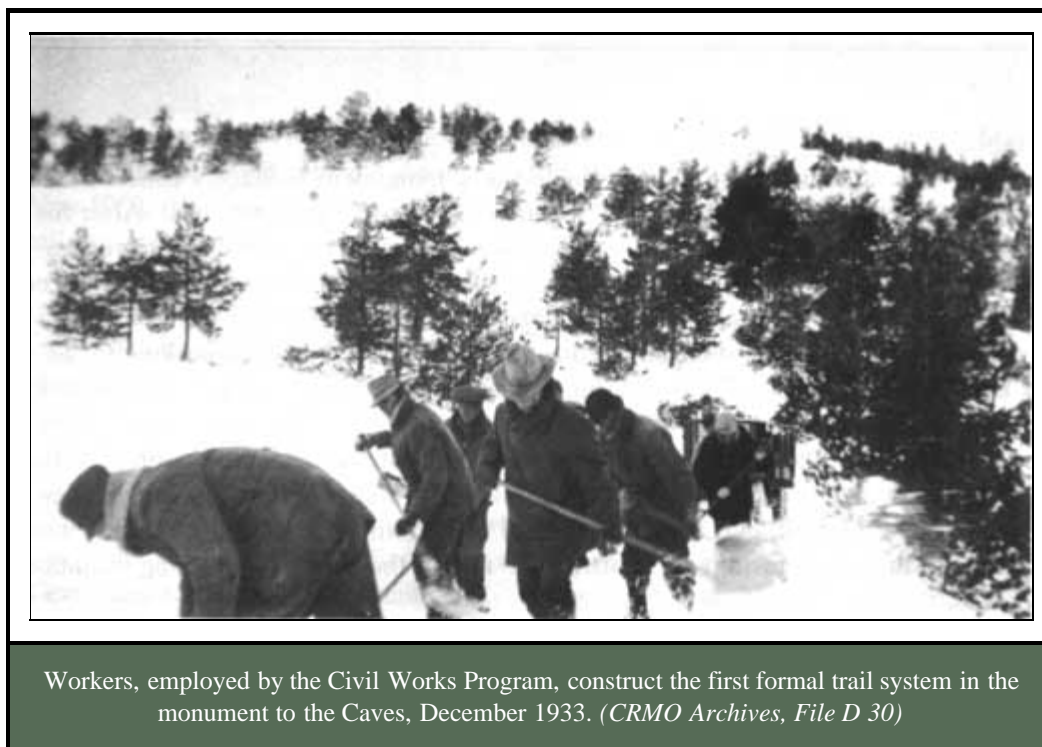
TRAILS

Compared to road work, trails received little attention. The Park Service catered to the motoring public, and the loop drive was the primary means of getting visitors to the monument's key features. Trails became an important addition to the road system. Along the drive, informal footpaths led to various sites by the time the monument opened in 1924. Early on, the agency decided that a formal trail system was important to enable visitors to experience the landscape more intensively, more safely, and more enjoyably.

In planning, building, and maintaining trails, monument managers concentrated on increasing the ease of travel to the most popular and diverse volcanic sites. After his appointment in 1925, Custodian Paisley established this pattern when he constructed paths to the caves and waterholes. In this manner, Custodian Moore further advanced trail development in the summer of 1928, clearing rocks from the Big Craters and Spatter Cones trails. He also constructed a trail from the Caves Area parking lot to Dew Drop Cave and Indian Tunnel, using cinders to fill cracks, and removing rocks in order "to make a good practicable trail for persons unused to difficult ground." With this intent, Moore built a new trail from Snow Cone to Great Owl Cavern, skirting the slopes of the spatter cone chain to Crystal Pit, Big Sink Waterhole, and ending near the cavern. All of this, Moore stated, eliminated "a number of rambling and confusing trails," making hiking across the rough terrain more attractive-- and in the process increasing visitation to these sites. [46]

These developments, however, were "informal" at best, reported Yellowstone National Park Superintendent Roger Toll in 1931. In Toll's view the monument still did not possess enough trails, and in "the absence of trails," he observed, "visitors cannot find the points of interest and are likely to get lost in the maze of lava flows." Construction was simple and economic, he noted; it mostly involved hauling cinders to lay a trail surface, and a budget of \$5,000 a year would meet this need. [47]

Although the monument never received this level of funding, two years later the allocations from the emergency work relief programs enabled the Park Service to comply with Toll's suggestions. Planning for trail development, Custodian Albert Bicknell decided that the Caves Area required the most improvement--voicing the reasons of earlier custodians--since only a few tourists ventured across this formidable landscape, in some cases unable to find the caverns in the sea of pahoehoe. Earlier improvements in this area had been attempted with limited success. Prior to Bicknell's arrival, for instance, Custodian LaCombe had hard-surfaced a short section of the trail to Dew Drop Cave and marked the route to the caves with dots of red paint. In December 1933, a Civil Works Administration project developed the trail system in the Caves Area more completely. A new surfaced trail connected Indian Tunnel with Dew Drop, Boy Scout, Beauty and Surprise Caves, while a rough trail extended to Natural Bridge and Last Chance Cave. With completion of the project, Bicknell called the new trails "a great asset." His spirits were especially lifted when he noticed that older visitors were walking comfortably to the caves. "This is very encouraging," he noted, "when we can get the children and the older people out to these points of interest." [48]



Workers, employed by the Civil Works Program, construct the first formal trail system in the monument to the Caves, December 1933. (*CRMO Archives, File D 30*)

Bicknell's words shed light on the Park Service's development mission--the importance of providing suitable access to the monument's prominent features. Another example of this was Custodian McCarty's attempts to have the trail to Great Owl Cavern developed into a road. [49] Constructed in 1934 with Public Works Administration funds, the trail provided access to the cavern for those visitors willing to venture across the rugged terrain, but for many the path was still too rough, depriving them of seeing one of the monument's more interesting sites. [50] Although the road was never built, the trend toward upgrading the trail system continued.



Completed trail through sharp lava to the Caves, ca. 1934. (*CRMO Museum Collection*)

By the 1950s, Craters of the Moon sported nine trails. In the northern section of the monument, the trail system reached the Cave Area, Big Crater and Spatter Cones, Great Owl Cavern, the Tree Molds, and North Crater Trails. In the southern end, three undeveloped trails generally paralleled the Great Rift on either side. Their starting point was located at the end of the Broken Top Road and they separated into two main routes at the Watchman. The Old Indian Trail extended south to Vermillion Chasm; the Natural Bridge Trail branched southwest of Fissure Butte; and the Split Butte Trail ran as far south as Sheep Trail Butte. There were also two proposed trails, one from Indian Tunnel to Last Chance Cave, and the other from Echo Crater to Amphitheater Cave. [51]

In subsequent years hard-surfacing trails near the loop drive for better maintenance and hiking formed the next major management emphasis. In 1953 Superintendent Bright began laying the first premix on the Cave Area trails. In addition to surfacing existing trails, Bright also constructed a new hard-surfaced trail to the Devil's Sewer site and four new hard-surfaced trails at the Big Craters-Spatter Cones area. By Mission 66, most of the trail development work was complete, and the monument shifted toward interpretive development. [52]

One of the more important management decisions regarding the further development of trails occurred at this time as well. With the passage of the 1964 Wilderness Act and 1965 wilderness study, monument managers considered the southern region of the Craters of the Moon as "wilderness." In his 1966 master plan, Superintendent Roger Contor confirmed this view when he stated that no trails would be constructed into the southern end in order to maintain the area's wilderness character. Furthermore, due to the presence of numerous game trails and the area's rolling terrain, Contor determined that no formal trails were necessary, and he ended trail maintenance. In this way, the fire road to Echo Crater, which was also the central route used by wilderness hikers, was left to revert to its natural state. The creation of the Craters of the Moon Wilderness in 1970 and subsequent wilderness management plans finalized this policy. [53]

In the 1980s, the monument reversed the development trend and turned more to trails and their role in resource management issues. The 1982 resource management plan, drafted during Superintendent Robert Hentges' tenure, emphasized that no new trails were needed. The monument contained about twelve miles of trails, half of which were paved.

Furthermore, the plan discriminated between the type of management for paved and unpaved trails. For example, the surfaced trails existed at volcanic features; therefore, they required maintenance to assist with visitor safety and resource protection. From a resource management perspective, the larger problem was the erosion of fragile volcanic features caused by off-trail use and poorly designed trails. The monument launched corrective trail maintenance and redesign programs in response to resource management issues. Not an entirely new approach, the best example of this policy in action was the Spatter Cones rehabilitation project in the 1980s. [54]

The unpaved trails located in more remote and less visited areas of the monument were hardly maintained. The management trend, again influenced by issues of resource and visitor protection, has been to deemphasize the use of many of these trails. When the monument's wilderness area was established, for example, managers removed the ladder leading into Great Owl Cavern, since it was a modern "intrusion." The intent was also to maintain the site's primitive state. Because the cavern lacked safe access, except through technical means, managers closed the trail in order to keep the casual visitor out. Similarly, trails to Crystal Fissure and Big Sink, and those caves to the east of the developed cave site were not maintained, even though they appeared on certain maps and had some tread and cairns. In a sense, many of these trails were managed as those in the wilderness, left to return to natural conditions. [55]

Expanding this policy in 1987, Superintendent Robert Scott introduced a cyclic maintenance program for trail management. Yet not all unpaved trails in remote regions could be left unmaintained. The Tree Molds Trail fell into a gray area. Considered wilderness, it was not maintained, yet it was a popular, short, and unpaved trail that by the early 1990s had worn and widened considerably. In response, Superintendent Scott reversed earlier policy and placed the trail under cyclic maintenance. [56]

In response to visitor use, in 1991 Craters of the Moon also altered its earlier policy of no trail additions. Superintendent Scott permitted the construction of a short access trail leading from the campground south over a ridge to the North Crater Flow Trail, following the general direction of a common-use trail. This was necessary to prevent further resource impacts and increase visitor safety, since the other alternative was for campers to walk the narrow loop drive. Alternatives for the revision of the trail up Inferno Cone involve similar issues, as does the planned revision of the Devil's Orchard Trail. [57]

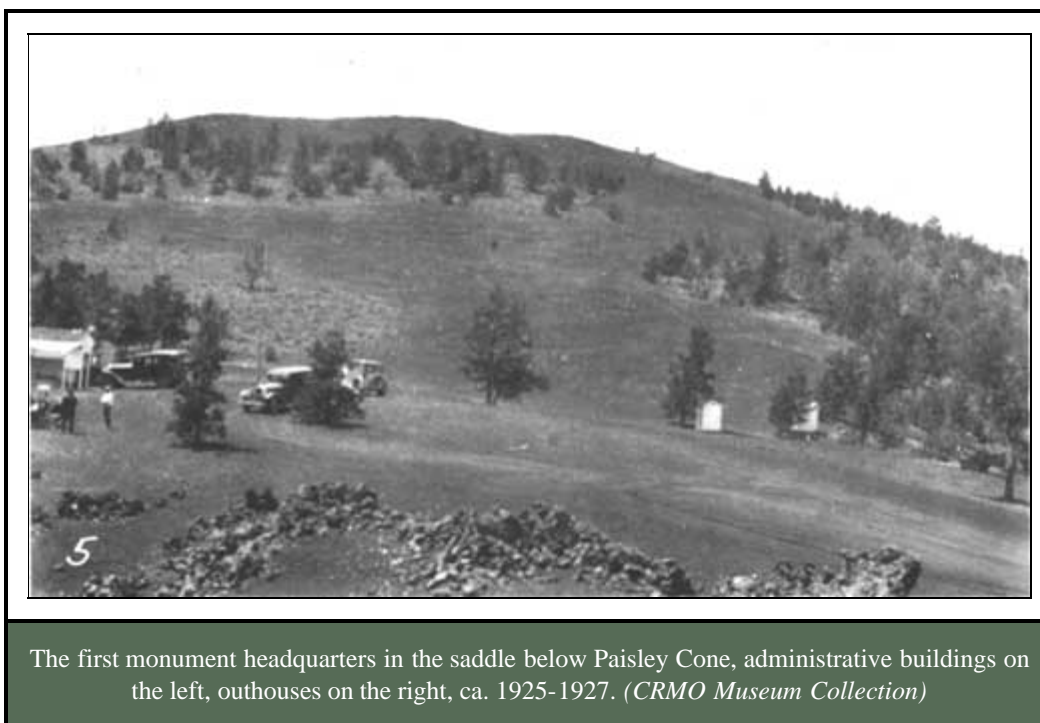
BUILDINGS AND VISITOR FACILITIES

Like other developments, the history of structures and visitor facilities reflects the monument's environmental conditions and administrative evolution. Because of limited land space and a commitment to inflict the least impact on monument resources, the Park Service confined administrative buildings and visitor facilities to one location, the headquarters area. In addition, headquarters development evinces best perhaps the long history of neglect prior to the Mission 66 program. It suggests that the monument has indeed had two lives, for few structures remain of the period before Mission 66 construction, yet that does not diminish the significance of that early era.

THE EARLY YEARS

All told there have been three headquarters sites. The first lasted from 1925 to 1927, and was situated at Cinderhurst Camp in the saddle between North Crater and Paisley Cone. Custodian Samuel Paisley chose this place because it was near the loop drive and Registration Waterhole. With few sources of water in the monument as convenient and

plentiful, this location was vital for early visitors who "roughed it" in the desert environment. The area's buildings were modest at best. Paisley, lacking a construction budget, erected at his own expense a tiny wood-plank cabin that functioned as office and residence, registration booth, and interpretive center. To aid in interpretation, he constructed a small museum display case filled with lava specimens. Later, as funding allowed, he built two pit toilets and a small registration booth. [58]



As suggested by the first headquarters "complex," water was central to the headquarters design and the monument's survival. Recognizing this, Paisley urged the Park Service to develop a water system from the springs of Little Cottonwood Creek to the headquarters area. When planning the headquarters development in 1927, Civil Engineer Bert Burrell agreed with Paisley and recommended construction of a new site designed to take advantage of a new water system in a central location. The site envisioned for this was in the vicinity of the present campground. Here, a centralized and small compound would not only streamline administrative duties, but also provide the conveniences to which visitors were accustomed: running water, a modern campground, comfort stations, and a concessionaire's services.

In late July 1927 the monument waterhole levels dropped drastically and upon Burrell's advice, the new custodian, Robert Moore, relocated the headquarters to its second location, near the present-day campground entrance. It was sited on the west side of the recently constructed entrance road, directly across from the newly constructed Crater Inn, its three cabins, and gas station. The Park Service had insisted on this "dry site" for the concession to avoid depleting the finite water supply in return for a hook-up to the system when it was finished. Forced to haul water from Martin, the concession owner supplied water to both monument managers and visitors for four years. [59]





Site of the new monument headquarters and campground, on the right, concession, on the left; note the three white structures in the distance (center) are the original headquarters, 1927.
(CRMO Museum Collection)

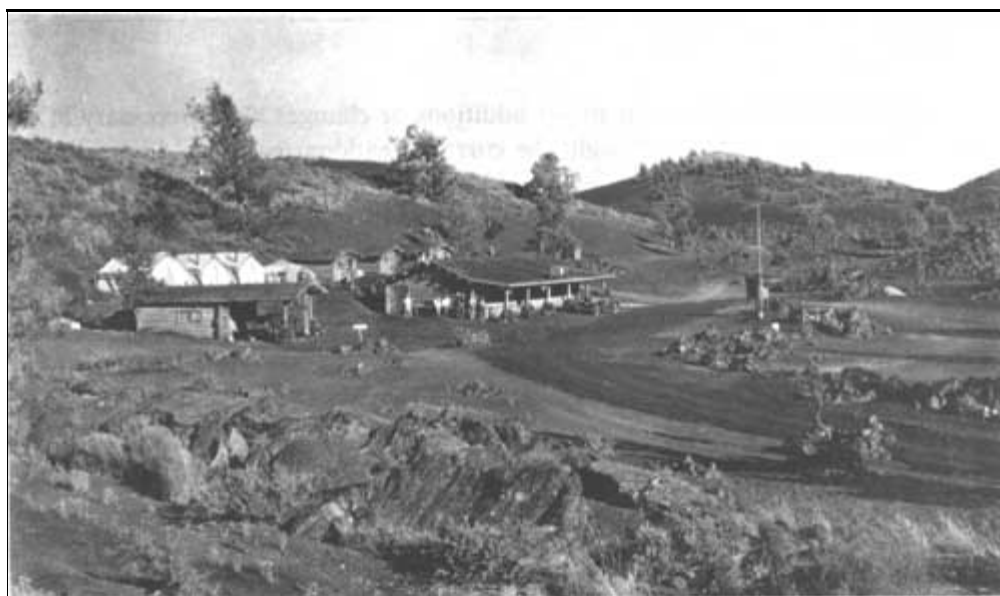
It was here as well that the monument designated its new campground. The former administrative site lacked the space for extensive auto camping, and the new area, the same as today's, offered room for 75-to-150 car camps. [60] Burrell chose this place over the northeast base of Grassy Cone as recommended previously by geologist Harold Stearns. Stearns included this section in his boundary expansion study because it was near water, the highway, and trees for shade--all ideal for camping. Burrell thought otherwise; it was too close to the highway, too far from the monument's main features and headquarters to administer properly, and too small an area for development. More importantly, it would have been too expensive to pipe water to the proposed campground as well as the headquarters area. [61]

By summer's end, Craters of the Moon's headquarters area consisted of its main components--custodian's cabin, outhouses, concession, and campground--all of which, with few additions, remained in place for the next thirty years. The main administrative theme of this era was improving and adding to these few facilities. Judging from the condition of its buildings, for example, one could say that Craters of the Moon existed in a destitute state until the mid-1950s. Small and remote, the monument indeed seemed to be a "second-class" site in terms of Park Service attention. Custodian Moore complained of the primitive working conditions in October 1929, wondering why the agency had not taken better care of what was to be "one of the most Scenic Wonders of the U.S." In this period of low appropriations and economic depression, the custodian had to make do with Paisley's one room, tar-papered shack, which served as living quarters and office. Small and cramped, "this shack is a great conductor of heat and cold...and the dust blows in when the wind blows, and some of it blows out too." [62]

Unfortunately for Moore, no improvements took effect until his departure. Coinciding with the completion of the water system and the era of trained managers, new quarters were not built until 1931. Trying to attract qualified ranger and friend Burton LaCombe to take the custodian job at the monument, Director Horace Albright agreed to fund construction of a new residence. Albright's consent came at the bidding of Yellowstone National Park Assistant Superintendent Joe Joffe, who related that the "most disgusting feature of the monument is the Government layout." More important was the fact that LaCombe's wife expressed profound disappointment in the monument's living quarters, adding impetus for a new

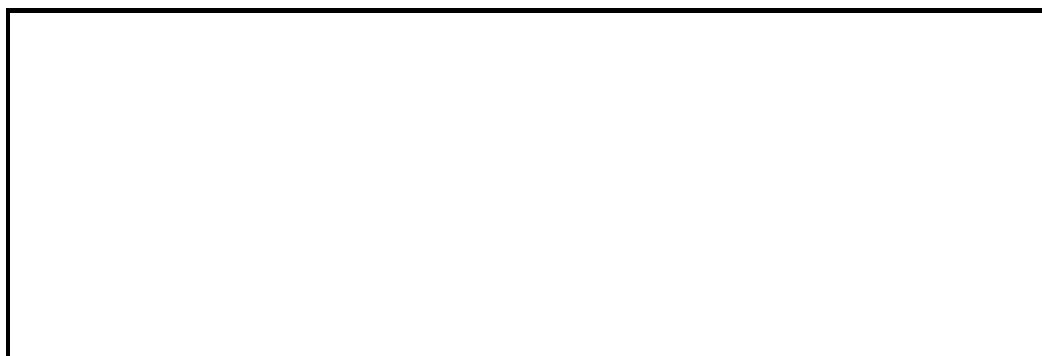
structure. This latter reason underscored a new era in management at Craters of the Moon, one in which families would accompany staff to the isolated area, and thus heighten the need for adequate quarters and tolerable living conditions. A single-story, four-room log cottage was completed in early November 1931 near the campground entrance. LaCombe and his wife moved in after living the summer in a tent on the monument grounds. [63]

At this time, the Park Service also increased the monument's structures to assist in its administration. The log equipment shed (the log warehouse) was erected on November 13, 1932. [64] Moreover, a major step toward adding to the "comfort of the public," and tied directly to the presence of a water system, was the monument's first comfort station. Constructed ten years after the monument's establishment, the log comfort station, located in the campground, was completed on September 24, 1934, and paid for by Public Works Administration funds. [65]



New entrance, ca. 1935, showing Crater Inn complex and monument registration booth (and office not in photo). (*CRMO Museum Collection*)

The comfort station was one of several buildings contemplated in the master plans of the early 1930s, but funding limitations deferred a number of proposed structures, including a new administration building, residence, and checking kiosk to a later date. As of 1938, those needs were still unmet. Region Four Landscape Architect Earnest A. Davidson believed that these projects could be achieved through Civilian Conservation Corps assistance but both skilled labor and materials would be difficult to find. The winding down of the New Deal programs and the coming of World War II contributed to further setbacks, leaving the monument's facilities "hardly what could be adequate for present usage," Davidson said. [66]





Monument headquarters complex before Mission 66, showing the "central design" and limited space for expansion as well as eclectic collection of buildings, ca. 1955. (*CRMO Museum Collection*)

By the early 1940s, the monument added to the headquarters area one temporary frame cabin for a ranger's quarters. The most notable additions, at this time, were four more log cabins built by the concession operator. [67] For the first time in monument design, Custodian McCarty argued against the use of log building materials, "as there is hardly a tree in the whole area, particularly in the vicinity of these cabins," making the log construction "entirely inappropriate." Instead McCarty favored "the use of lava rock masonry, of which there is a great quantity available" at the monument, which would also be less expensive than logs hauled from more than two hundred miles away. Assistant Regional Director B.F. Manbey agreeing with the custodian suggested that future construction at the monument be modeled after lava structures at Lava Beds National Monument; they seemed appropriate and to "blend in with the natural surroundings." [68]

The Park Service incorporated these and other suggestions into a long-range planning process for the headquarters in the 1940s, which culminated in the Mission 66 program. By far the most penetrating analysis of the administrative developments was Regional Director Tomlinson's 1943 report that provided the essential "why" to future design. Writing during the war years, a time of low appropriations and low visitation, the regional director did not believe any major additions or changes were necessary at the time. In the future, however, he thought the current headquarters should be relocated about half a mile northwest to a site higher in elevation and at the junction of the monument highway and entrance road. His reasoning reflected that of Burrell's in 1927; given the monument's small staff, this "drive-through," central design was necessary to check visitors, collect entrance fees, issue auto permits, control traffic and provide information in a more efficient manner. The highway site was also appealing because it could expand the monument's interpretive program; the slightly higher elevation offered a near-panoramic view of the lava flows, a good vista with which to introduce visitors to the monument. Other practical matters such as snow removal played a role in his decision, since the highway department plowed this section of road at no cost to the agency. [69]

The preliminary master plan of 1943 embodied Tomlinson's suggestions, calling for a new headquarters complex, with one building for offices and museum, and two five-room residences, near the highway just to the west of the current entrance road. The custodian's

residence would then become staff quarters, and only one additional dorm and storage facility would be required. The plan, echoing McCarty's and Manbey's suggestions, also stipulated a change in building materials, ones which would be more sympathetic to the monument's environment as well as more practical. For all future buildings, lava, rather than logs, was to be used for its natural effect and its insulating qualities. [70]

The plans, however, lay dormant during the postwar years. Regional Architect Sanford "Red" Hill's statement in 1946--that Craters of the Moon was isolated and appeared to be neglected by the Park Service--held true for the following decade. Beginning in January 1950 Superintendent Aubrey Houston attempted to steer the monument toward improvements. He enunciated that the combined highway improvements, postwar travel increases, and a regional population boom were pressing the area beyond its administrative capacity. Stating that most of the monument's facilities were "substandard and obsolete," limiting his ability to hire more rangers to his staff, Houston advocated enacting Tomlinson's plan. His 1950 master plan renewed the regional director's proposal, noting that a concessioner wing be added to the structure. In this way, Houston believed, the Park Service could get rid of Crater Inn's unsightly buildings and "improve the appearance of the Government area as well." [71]

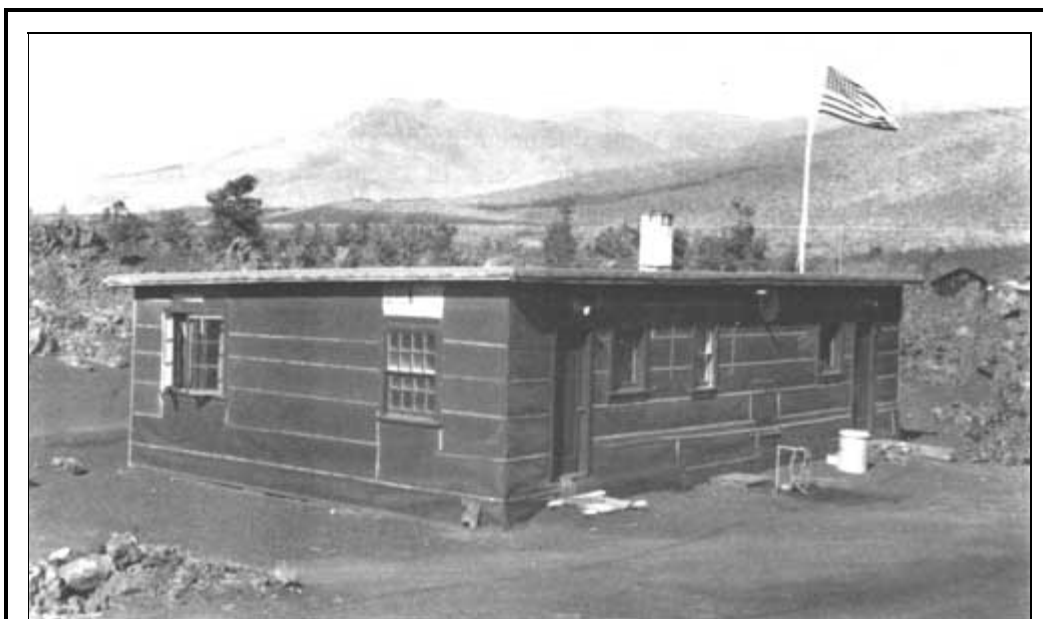


The monument office in winter, giving a sense of the working conditions experienced by monument personnel prior to Mission 66, ca. 1950. (CRMO Museum Collection)

Agency planners agreed that the headquarters should be located at the junction of the monument highway and entrance, yet the location of the residential and utility area posed problems. The small land space might crowd the buildings. There were also considerations of snow drifting and development costs. The Park Service considered two alternative sites for the residential and utility areas. The first site was on the hill north and above the highway, and the second was near the former eastern entrance, above the highway as well, near today's group campground. Houston recommended the original location because it was the most practical compared to these two sites. Although limited in space, it was more cost effective, requiring less construction for utilities and roads; the alternative sites were also too far from the proposed administration area to manage the monument well. In order to make room for the new developments, the master plan recommended moving the entrance road to the west, dividing the headquarters complex, with the residential and utility area to the east and the administration building to the west. [72]

Even though a new headquarters area had been planned, lack of appropriations stymied construction, and Houston spent the next several years fighting for funding to achieve even a modicum of improvement. Attesting to this struggle, the superintendent reported in the spring of 1951 that with little or no preventative maintenance for ten years, the hard winter of 1950-1951 led to the disintegration of some buildings and the dilapidation of others. At this point, it was cheaper to build new ones than to repair the old ones. More importantly, inadequate housing was continuing to hurt the monument's administration. Recently, "three prospective Rangers declined appointment to the vacancy here because the only house available has no water and sewer system." [73]

Faced with severe reductions in Park Service budgets for construction and rehabilitation in the early 1950s, the superintendent managed to secure maintenance funds to improve the condition of monument buildings. Houston, seeking to satisfy one of his principal concerns, acquired several temporary buildings (shacks and frame tents) and remodeled them for employee housing, shop buildings, and a new office. For a time, Houston considered housing staff in the Crater Inn guest cabins. Despite these slight improvements, permanent housing was still insufficient; these structures were only good for the summer season, and the extreme winter conditions made it imperative to build year-round structures for a year-round duty station. Although construction projects met some needs, most proposals for additional residences, a kiosk, campground redesign, and new headquarters were put off until "later years." [74]



The permanent ranger's quarters, a temporary structure that served as the monument's best housing until the arrival of Mission 66. (*CRMO Museum Collection*)

MISSION 66

Those years arrived with Mission 66. As detailed in the 1956 prospectus, the headquarters in the mid-1950s consisted of the original structures with the addition of the temporary buildings serving as administrative office, housing, sign shop, and storage. In order to finally expand staff and meet the demands of climbing visitation (100,000 in 1955, having doubled in five years), the document proposed implementing the headquarters designs planned for over a decade. [75] In a sense, then, new facilities constructed during the Mission 66 era had the greatest impact on monument management, for they were intimately related to both visitor services and park personnel.



Mission 66 ushered in a new age in monument development, promising better working and living conditions for monument personnel, and better facilities for visitors, ca. 1956. (*CRMO Museum Collection*)

The main phases of construction occurred between 1957 and 1958, and established the monument's headquarters in its third location. Different from roads and trail programs, though, building construction created an entirely new look to the monument landscape. For example, the Park Service removed all but two of the former headquarters structures--the mixture of wood and log buildings--by July 23, 1958. Crater Inn met the same fate. Although Mission 66 plans originally provided for a concessioner in the new visitor center complex, the Service decided that Craters of the Moon should be a day-use site because of its short-staying visitor, thereby ending the need for a concession. Crater Inn's ramshackle condition and long struggle to stay in business also influenced the agency's decision. Most managers thought of the lodge as an eyesore and were happy to see its swift departure. The last of Crater Inn's buildings, sold at public auction, left the monument in November 1958. [76] With the former building sites restored to natural condition, the log comfort station in the

campground and the log warehouse in the boneyard, having been deemed useful, survived as the only reminders of the monument's early era.



As part of the Mission 66 program, Crater Inn, its guest cabins and gas station, were removed, ending the era of concessions at the monument, 1957. (*CRMO Museum Collection*)

At the same time that old structures were coming down, new ones were going up. On the new site near the highway, construction crews broke ground for the new headquarters complex in March 1957. Finally the structures essential to the demands of present and future administrations were becoming reality. The utility and maintenance building was finished in December 1957; the visitor center--housing lobby, museum, five offices, workroom, as well as staff and public restrooms--was completed on March 3, 1958. Five residences were ready the following August; these were three three-bedroom houses and garages, one duplex, and one four-unit apartment. [77]

During this time as well, workers also supplied the headquarters area with a fence, a drinking fountain, entrance kiosk, secondary water and sewage systems, and an irrigation system. The area was also landscaped, the volcanic environment altered to look like a city park with lawns, trees, and shrubs. The Park Service planted non-native vegetation, such as quaking aspen and Douglas fir, as well as native limber pines and plants to create this atmosphere. In doing so, the agency also attempted to add privacy to an otherwise open residential area--adjacent to the monument highway, entrance, visitor center, and campground. Unfortunately, most of the conifers died, and the deciduous trees fared only slightly better in the harsh environment. Although some shrubbery and trees screened the housing area from the public for privacy, the issue was never fully resolved. [78]

Having done away with the amenities of a concession, the monument upgraded its small forty-eight unit campground and picnic area by grading and paving the road and clearing and leveling camping spaces. Thirty picnic tables, twenty-five fireplaces, and a new comfort station were also added and fully operational by September 20, 1959. [79]

Surveying the new headquarters in 1958, Superintendent Everett Bright's comment about moving into the visitor center registered the significance of the new developments. "This is quite a change from the 10' x 14' one room tent covered frame shack which served as office and headquarters for the past twenty-five years." [80] The spacious new administration facility, compared to the rather spontaneous development of the past headquarters area, was more cohesive, modernistic, and well-designed.

Reciting the rationale of past proposals, agency officials believed that the new "layout" was a success because it offered a "much better relationship to the natural features" than in the past. The "gem stone" masonry blocks used in the construction of the new monument buildings, although not lava rock, blended well with the lava terrain, whereas the former wood structures had tended to stand out in the sparsely vegetated, volcanic landscape. The headquarters, situated on a gentle slope, bounded on the northwest by the highway and on the south by the campground, afforded outstanding views of the lava formations. And most of all, Service officials concluded that the site was a success because the headquarters conformed with the compact design theme. Their opinion was influenced by two things--the belief that the monument would only be "administered by a relatively small staff," and the fact that land space among the volcanic flows was limited. "Consequently," according to the Mission 66 master plan, "a compact development integrating operations, interpretation and Management produces better control, greater conveniences and a better overall operating efficiency. Furthermore a closely knit development of this sort located in a somewhat desolate area makes possible to group facilities closer together to gain architectural unity in the development." [81]



New visitor center, ca. 1962. (Photo courtesy of Glenn Hinsdale)

MAINTENANCE AND DESIGN ADJUSTMENTS--POST MISSION 66

BUILDING MAINTENANCE

Dedication ceremonies were held on June 1, 1958, and for more than thirty years, Craters of the Moon's headquarters remained mostly unchanged. As with other aspects of development, though, the main issue was maintaining the developments granted by the program. The monument's extreme climate of hot summers, cold winters, and prevailing winds exacted a heavy toll on the condition of the new structures. Poorly designed for these environmental conditions, the structures were not insulated; the mason-block walls and single-pane windows retained little heat, draining valuable energy supplies and making employee living conditions, especially in the winter months, uncomfortable. Less than ten years after their construction, Superintendent Roger Contor stated that the "relatively new facilities" required higher levels of maintenance funding than previously allotted. [82]

By the mid-1970s the buildings were showing even more signs of wear, and Superintendent Robert Hentges initiated corrective measures such as painting and reroofing. But it was the advent of the energy crisis that produced the most profound effect on the rehabilitation of the monument's structures. In 1978 Hentges reported that Craters of the Moon had reached its limit in reducing energy consumption without "making some major alterations to buildings or taking steps to insulate the structures." During the early 1980s, the monument sealed the porous brick walls of the area's residences and visitor center as well as added aluminum siding to prevent water and wind seepage. These as well as other energy-saving measures, such as adding solar panels to monument buildings and enclosing the visitor center entrance with glass walls, cut the monument's energy consumption in half. [83]

Yet living and working conditions were not necessarily improved by these renovations. The issue came to a head in 1982 when rental charges increased for government quarters some 300 percent. Many employees believed that the new rates were unfair given the poor conditions of the monument's homes, especially since higher rents and the high costs of utilities made living at the monument unattractive and unaffordable. Although rent was lowered to "comparable" rates shortly after the increase, Superintendent Hentges stated that many of his staff expected that "Washington will eventually make its interpretation of what are comparable rents and force higher and higher rents on...[the monument's inadequate] quarters." A number of his staff already had chosen to live in Arco rather than the monument for these reasons, and if rates continued to increase, Hentges predicted, "the Service will someday have no one living on site to protect facilities and park visitors after work hours." To make their case, monument employees unionized, joining the American Federation of Government Employees to "represent them as an exclusive bargaining agent...." [84]

Hence, bringing the monument residences and other structures up to standard continued to occupy a great deal of maintenance work throughout the 1980s. A 1986 study by the Park Service's Office of Maintenance and Communications Engineering concluded that the problem with the monument's buildings, despite past renovations, was that they "were...originally designed for a more temperate climate than the harsh mountainous climate" at Craters of the Moon. The most common examples were inadequate insulation, frozen water pipes, large single-pane windows, oil heating furnaces that did not work (these were supplemented by wood stoves even when they did work), and low sloped roofs susceptible to snow piling. The best solution was new buildings "designed for this location." In lieu of that, the report recommended upgrading the existing electrical system and switching from oil furnace heat to electric heat, and adding insulation. [85] Using the cyclic maintenance program, Superintendent Robert Scott accomplished most of the report's suggestions, bringing all park housing up to standard by 1990. [86]

In some cases, such as with the log comfort station in the campground, Scott preferred a new structure; however, he opted for rehabilitation in 1986 since there were no funds to build a new one. [87]





Contemporary view of the headquarters complex, showing the close proximity of the campground and monument administrative buildings and housing. *(Photo courtesy of David Clark)*

OUTGROWING THE HEADQUARTERS DESIGN

Problems with the headquarters design also surfaced after Mission 66. In the monument's 1966 master plan, Superintendent Roger Contor noted that it was only a matter of time before Craters of the Moon outgrew its "compact design." One significant example was the location of the campground; it interrupted the view from the visitor center, and its proximity to the monument's residential area invaded the privacy of monument personnel in their off-duty hours. In addition, the campground was in a sensitive lava flow, and continued use would only impact the outlying features. To offset this situation, the plan called for eliminating the campground, closing the west end and designating the east end as a picnic area with some room for off-season camping. Although tentative options were to eliminate camping in the monument altogether, [88] the plan proposed to relocate the campground north of the highway in the "unconfined" Little Cottonwood meadow, to be accessible by a new road on the southwest side of Sunset Cone. There, the monument could offer a minimum of 150 campsites, around twice as many as what was currently offered. Moreover, the new site would not compromise the monument's values, for it existed well north of the principal geological features in an area acquired primarily for watershed protection. The surrounding Pioneer Mountains offered pleasant hiking, and the plan suggested constructing an interpretive trail to the top of Sunset Cone to overlook the North Crater AA Flow. Another interpretive trail could be constructed from the visitor center through the former campground to the North Crater Flow Trail. [89]

The "only other foreseeable development of the Little Cottonwood meadow," Contor noted, was "the ultimate expansion of Service residences and support facilities." The point was that "the present headquarters location cannot reasonably be expanded to any degree and ultimately might best be devoted to day time services only." [90] The Park Service never implemented these recommendations, considered expensive and somewhat impractical since it would create more traffic across the highway. (In later years, research determined the northern unit to be a sensitive grassland ecosystem and crucial mule deer habitat.) The situation worsened. In 1967, it was common for eighty-five camper units to press into the fifty available spaces. In order to maintain "privacy and [a] true camping experience" for the visitor, Superintendent Paul Fritz created ten overflow camping sites in the picnic area,

opened a parking area to trailer units, and added more water hydrants and pit toilets. Furthermore, his staff converted a former maintenance area into the primitive group campground in the northern unit below the eastern slope of Sunset Cone. Capable of holding fifty people and well removed from the existing campground, Fritz believed the new site would "ease the strain" of having large groups such as Boy Scouts "within the campground proper." The superintendent also unsuccessfully attempted to have visitor facilities established outside the monument's borders in the late 1960s, and again in his draft 1973 master plan along with a proposal to relocate the monument's administrative offices to Arco. [91]

The problem with the campground stemmed from the monument's use as a rest area by travelers in remote southcentral Idaho. Following Mission 66 planning and developments, Craters of the Moon was to be managed primarily as a day-use site, yet visitors, unaware of this distinction, continued to fill the campground nightly. Confronted with this "winless" situation in the mid-1970s, Superintendent Hentges stated that it was good to offer visitors the experience of overnight camping in a volcanic environment, yet the "present location [of the campground] is a slap in the face to National Park Service imagination and needs to be relocated." [92]

Identifying the problem with the headquarters design was one thing; solving it was another. The 1991 general management plan, similar to past proposals, suggested separating the headquarters facilities from the visitor facilities. The plan's intent was to improve the visitor's experience by relieving the traffic congestion and visual clutter inherent to the compact design. By relocating the visitor center and entrance road to the eastern side of Sunset Ridge, the Park Service would accomplish these goals. In this respect, the plan offered a new approach. The majority of visitors would bypass the headquarters area, reaching the campground by a spur road. The plan also provided for campground redevelopments in order to expand the number of tent sites, to expand and improve sites for recreational vehicles, and to provide some services for winter camping. Moreover, these arrangements, along with a planting buffer to screen the residential housing from the campground, would reduce most of the conflicts between employee privacy and visitor services. [93]

The general management plan's proposal for a new entrance and visitor center reflects the reality the Park Service must face with Craters of the Moon. "Confined" development has become just that; the monument has outgrown its facilities. Relocation of the visitor center, entrance road, and other visitor services would allow monument personnel to expand administrative offices in the present building, solving the persistent problems of space, as remodeling for an expanding staff has reached its limit. The plan also provided for employee housing to continue rehabilitation to improve energy efficiency and livability, leaving the option of new housing open. Finally, the maintenance building would be remodeled to reclaim some space given to administrative offices, to receive weatherization, and to enlarge storage capacity. Departing from the former headquarters layout thus represents one of the most significant changes in the monument's development history.

WATER AND POWER

The monument's physical plant would not be complete without the conveniences of water and power. The water system more than any other utility symbolizes the life blood of Craters of the Moon. As evident in previous discussion, acquiring a water supply was key to the monument's survival and development, influencing the location and centralized design concept of the headquarters area. The water system's construction was also interrelated with a variety of resource protection issues and management concerns. [94]

In the desert environment of Craters of the Moon, early travelers relied on surface water

found in scattered waterholes to quench their thirst and wash their camping dishes. Hence, the only source of drinking water was susceptible to contamination from human use, and from animals who shared the same pools in the dry climate. Sufficient supply also posed a problem with the increase of visitors, and at the same time restricted visitor services and administrative developments. After receiving the results of several surveys, the Park Service remedied this situation when it filed for water rights to the Little Cottonwood Creek drainage in July 1927. When water levels dropped in the monument that same month, the agency quickly requested withdrawal of the area, which was granted under a July 23, 1928 presidential proclamation. Following delays in funding and land acquisitions, the Park Service finished the pipeline survey in August 1930, and constructed the line in 1931. Beginning in late April, workers dug and laid the line by May 28, piping water to the headquarters, Crater Inn, and campground. The system was completed by June 17, 1931. Four developed springs supplied water to a five thousand-gallon steel tank on Sunset Cone.

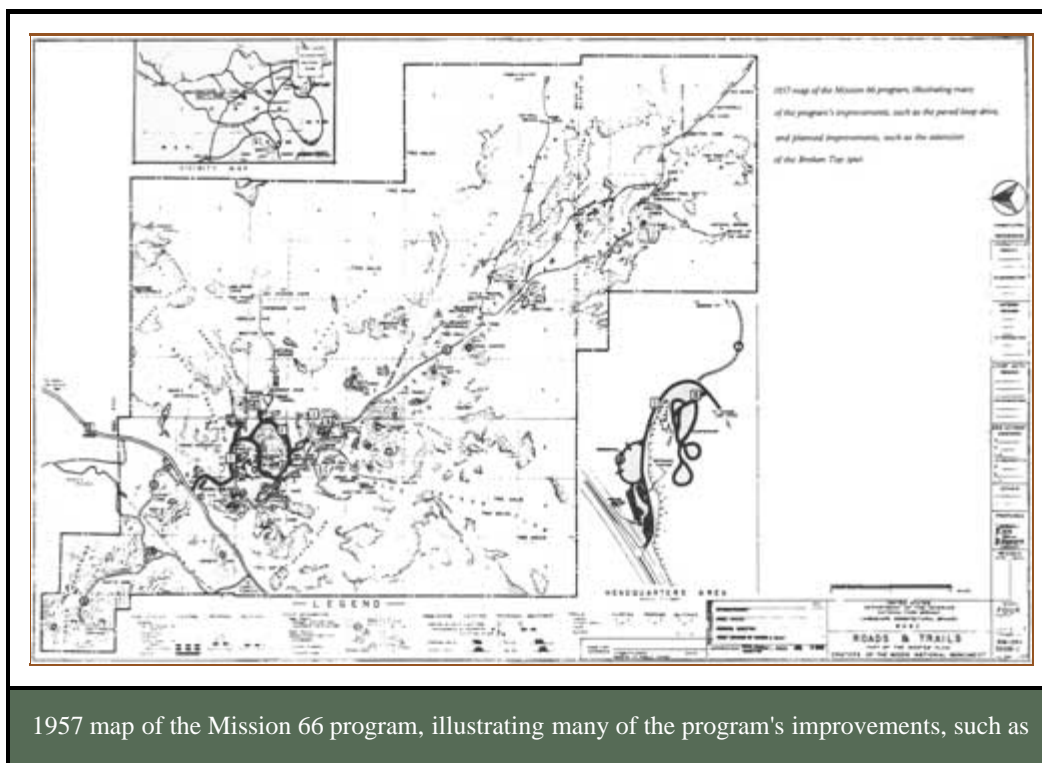
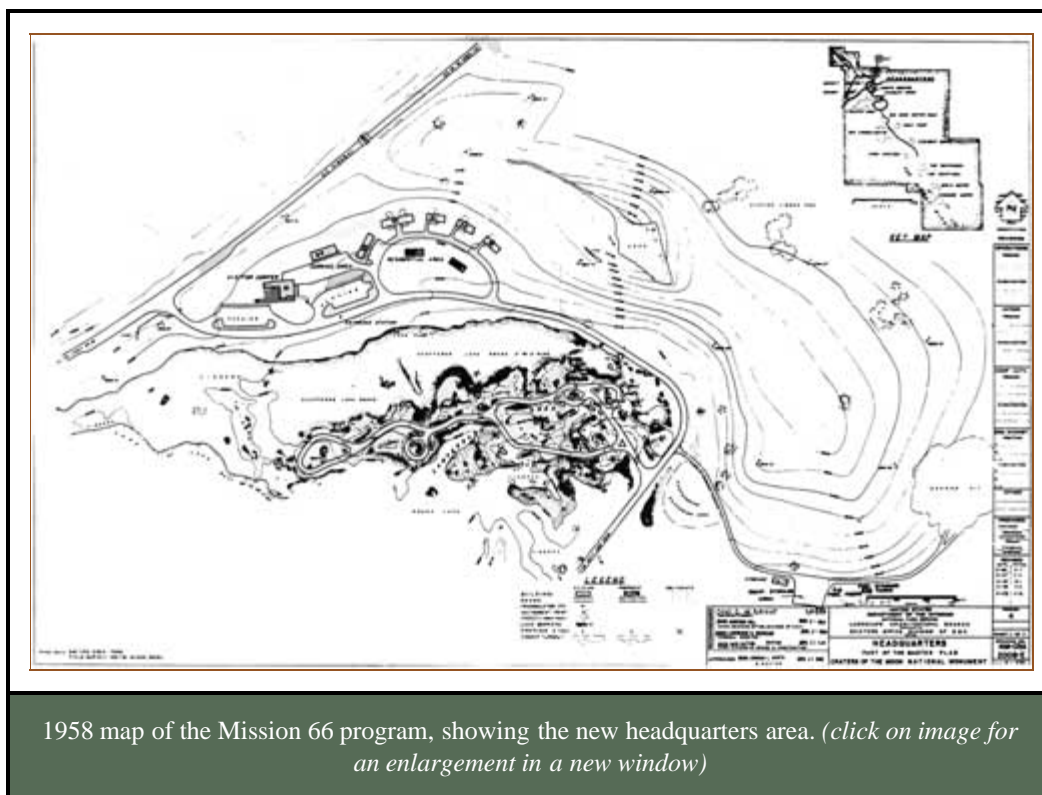
In subsequent years, the Park Service attempted to protect the springs from contamination from livestock trespassing in the northern unit. Although fencing projects failed, contamination was not a significant issue. In April 1948, though, the Park Service was forced to abandon Spring Number Four because of contamination from runoff, but was met current demands with the remaining springs. In addition, other maintenance problems involved breakage in the line due to faulty pipe and winter weather.

Increased visitation and personnel in the 1950s led to higher demands and redevelopment of the water system during the Mission 66 program. For instance, in order to supply the new headquarters area with water for domestic use and fire protection, workers replaced the two-inch water line with six-inch line, and installed a fifty-thousand-gallon concrete reservoir above the original container. Superintendent Floyd Henderson also found it necessary to reactivate Spring Number Four, after rehabilitation, to satisfy demands. Attesting to the need for more water, the Park Service installed a 100,000-gallon water reservoir and a chlorinator house on the southern slope of Sunset Cone on August 31, 1964. [95]

With some modifications, the water system of the 1960s remained intact. In the late 1970s and up until the present, the Park Service attempted to secure a subsurface water supply in the northern unit to replace the four springs, and thereby eliminate nagging issues over surface pollution and increased consumption. In addition, controversial practices, such as lawn irrigation, complicated the issue. From an aesthetic perspective, the green lawns clashed with the dark lava terrain; from a resource protection viewpoint, the monument's mule deer were attracted to the grass and water, and their migration to the headquarters area led them across the highway, and car accidents caused high deer mortality. And as for visitor services, lawn sprinkling used (or wasted) water that might otherwise have met increased demands. The monument's new general management plan calls for removing most of the lawns to conserve water and replacing them with native vegetation. [96]

Although not nearly as controversial as water, the topic of electricity suggests how remote, isolated, and primitive the monument's administrative conditions were. Craters of the Moon was without electricity until 1952. Prior to that, kerosene or gasoline lanterns or candles were used for light. In 1943, Regional Director Tomlinson and his staff briefly considered constructing a hydroelectric plant on Little Cottonwood Creek, but high costs and a low rate of flow caused the project to be dropped. The most logical solution was commercial power, yet prohibitive costs this alternative impossible. Until the region surrounding the monument acquired commercial electricity, Craters of the Moon operated with two gasoline generators, which frequently broke down and older methods were preferable. By 1950, Superintendent Houston had grown tired of the faulty generators. The Rural Electric Cooperative (REA) was advancing nearer to the monument, in large part because of the Atomic Energy Commission's development near Arco, and Houston joined the Lost River Electric Cooperative, Inc. (REA)

on August 25, 1950. In doing so, the superintendent negotiated a contract on May 20, 1952 to have power supplied to Craters of the Moon. To overcome high construction costs and rates because of the small number of customers, the Park Service allocated funds previously slated for construction of a diesel generating plant at the monument to build the line; the agency also gave the REA a two-mile right-of-way within the monument to distribute electricity to the area's headquarters. After summer-long construction, Craters of the Moon was energized on September 30, 1952, marking a significant stage in the monument's administration, and making the "life in general...particularly during the winter period...considerably more tolerable." [97]



the paved loop drive, and the planned improvements, such as the extension of the Broken Top spur. *(click on image for an enlargement in a new window)*

[<<< Previous](#)

[<<< Contents >>>](#)

[Next >>>](#)

adhi/chap9.htm
Last Updated: 27-Sep-1999

CRATERS OF THE MOON

Administrative History



Chapter 10: CONCESSIONS

CONCESSIONS: A SHORT HISTORY

In the tradition of Stephen T. Mather, the National Park Service promoted tourism for Craters of the Moon hoping to gain public support for both the agency and the new monument. The Park Service as well as many preservationists believed that large numbers of tourists would ensure the monument's protection by arousing an appreciation for its "scientific" and "scenic" wonders. Agency officials and monument supporters envisioned Craters of the Moon as a "wayside" to the popular destinations of Yellowstone National Park and Sun Valley. Seeing the monument as an inducement to travel through remote southcentral Idaho, local boosters foresaw substantial profits from monument travel, and encouraged the Park Service to develop the conveniences a traveling public expected. The Service, in turn, enhanced the visitor's experience by providing the "luxuries" of roads, trails, and campgrounds, running water, restrooms, and overnight accommodations. While not on the scale of the great hotels and services found in many national parks, the modest comforts offered at Craters of the Moon reflected the Mather practice of making the parks accessible and enjoyable for motorists.

GUIDE SERVICES

The earliest services at the monument were guided tours. Deterred by the remote recesses of the lava country, the casual explorer depended on entrepreneurs, mostly neighboring ranchers, miners, or Arcoites, to lead him to the geological spectacles. Men like Samuel Paisley and Robert Limbert conducted excursions before the area's creation, introducing Idaho and the nation to the weird and beautiful terrain. This personal service carried over into the early administration of the monument. Stephen Mather, for example, appointed Paisley as the monument's first custodian in May 1925 because of his intimate knowledge of the area, granting him permission to run an exclusive guide service to augment his meager salary. Mather agreed to these conditions as a means to other ends--to stop similar guide and commercial services operating outside of the Park Service's control, as well as to regulate approved tourist activities and protect the resources. Paisley's guide service, in Mather's eyes, was a temporary measure, an expedient solution to a bigger problem, that ended when the custodian retired after two seasons. [1] Guiding tourists to the monument's features, however, formed an important public service, one which subsequent custodians, better paid and trained, continued.

In a time of low visitation this type of service was possible for the lone custodian, and necessary due to limited development of roads and trails. Yet the Service could only afford the bare minimum, barely able to pay its custodians and improve access, and when local commercial clubs, political leaders, and the Union Pacific Railroad pressured the Park Service to develop tourist conveniences in the first years of management, the agency turned to private interests to meet the desired services.

In January 1927, the Park Service, apparently in return for his years of promoting the monument, awarded Robert Limbert a permit to run a packhorse concession at Craters of the Moon for one year. Limbert and several associates organized Craters of the Moon Tours, acquiring horses and planning to operate from a ranch near Martin. Although the concession appeared ready to open for business in June, there is no record of its operation. [2]

CRATER INN: HARD LUCK BUSINESS AND FORGOTTEN RUSTIC

At the same time the packtrain business appeared and faded from sight, another concession was conceived. In May 1927, the Park Service signed the first five-year permit for Crater Inn, allowing the operators Jo G. Martin and John R. Wright of Arco to sell "gasoline and oil, lunch goods, cold drinks, and the usual line of accommodations furnished to tourists and sight-seers." Crater Inn provided a full-service business for monument visitors who, especially in an era of poor road conditions throughout the state, may have been stranded otherwise, the monument being a long drive from the nearest village or town. Stephen Mather's approval of the concession came as early as October 1926, a short time after the monument's creation, indicative of his belief that comforts would attract more visitors and raise the monument's stature. [3]

To be visible, the concession operators located their buildings under Sunset Ridge, across from the present campground, and at the time, near the junction of the two monument entrance roads. They began construction in May 1927 and by October had completed five log structures--the central concession building, Crater Inn, a gas station, and three log cabins. Crater Inn stood west of the cabins, which formed a line to its east, beneath the slightly curved crater wall, facing out to the campground and headquarters. With walls of Douglas fir, chimney of lava stone leaking smoke, and mule deer antlers hanging from its eaves, Crater Inn composed a familiar country (rustic) image in a strange and unfamiliar scene. [4]

The site was dry, the Park Service having instructed Martin and Wright to establish here to protect the monument's limited water supply. In return, the concessioners were promised a connection to a permanent source in the near future. As it turned out, the concession site played an important role in the location of the water system; at the same time the buildings were under construction, the water levels dropped to near depletion, and the Park Service implemented plans to centralize the headquarters complex across from the operator site, where the new water system would serve both the monument's administration and concession. [5]

Without water in the monument and with the appearance of Crater Inn, visitors were drawn to the concession. At the request of the Park Service the owners supplied tourists water free of charge during the "dry years." Martin and Wright hauled the water from Martin, around five miles away, and stored it in a three-hundred-gallon tank. Ironically, the benevolent act of providing free water for four years constituted Crater Inn's greatest achievement, for as a business venture it failed. [6]

The owners expected that once the water system was installed they would be able to modify the inn and cabins with running water, toilets, and "bathing facilities, without which it is impossible to have a first rate establishment." Water and the improvements it would bring were important to the growth and stability of the concession, and essential to conveying the significance of the monument to the public. As soon as these improvements were in place, Martin declared, the "popularity of the place will catch up with its real merit as one of the most interesting scenic phenomena in the world. People will not come in large numbers or stay very long where they are uncomfortable or subjected to hardship. We hope to relieve that at Craters of the Moon and profit accordingly, but we are practically at a standstill until the water is brought in." [7] When the water system was finished in 1931, however, Martin

was proven wrong. The business operated in debt for several decades, unable to provide the monument with the "dignified accommodations" it deserved. [8]

Before it was closed in the mid-1950s, Crater Inn changed ownership four times; the new owners, though, were not able to turn the business around and make it a profitable venture. In a sense, the concession's operation paralleled the monument's administration. During the decades of low visitation, the business, at times, could not even pay its permit fee; the situation was aggravated by the poor conditions of regional highways, the depression and World War II. The condition of the primitive structures was poor and overall the facility was unsightly and uncomfortable. The Inn's emphasis on meals and lodging produced little revenue, yet was a powerful fixation in the minds of the concession's owners. Even though past operators, for instance, could not afford to modernize the facilities, in 1940 Crater Inn's new owner began adding four more cabins, one of which housed the concession's house maid. [9]

Closed several years during World War II, the concession reopened to the new conditions of the postwar travel boom, regional population growth, and improved highways--all things that forecast profit. For a brief time, this was the case, until the business was beset by another ironic twist of fate. Better roads brought more sightseers who, rather than stay in the monument to eat or sleep, drove on to tributary towns, like Arco, attracted to that city's motels, cafes, and services. Besides the "amenities" of Arco, tourists were likely unimpressed by the appearance of Crater Inn, what Superintendent Aubrey Houston called in 1950 an "eyesore, and substandard in every way." [10] In short, the short-term visitor treated the monument like a roadside attraction, the concession offering little incentive to linger in the monument.

The superintendent thought that, as it existed, the concession should be eliminated. Still, national park visitors expected services, and he recommended that the agency offer a concession service in the new headquarters design. Regional Director O.A. Tomlinson, however, revised the existing concession policy, noting that the new boom and travel patterns dictated a change in public services. Citing the recent growth of motels in Arco, Tomlinson stated that

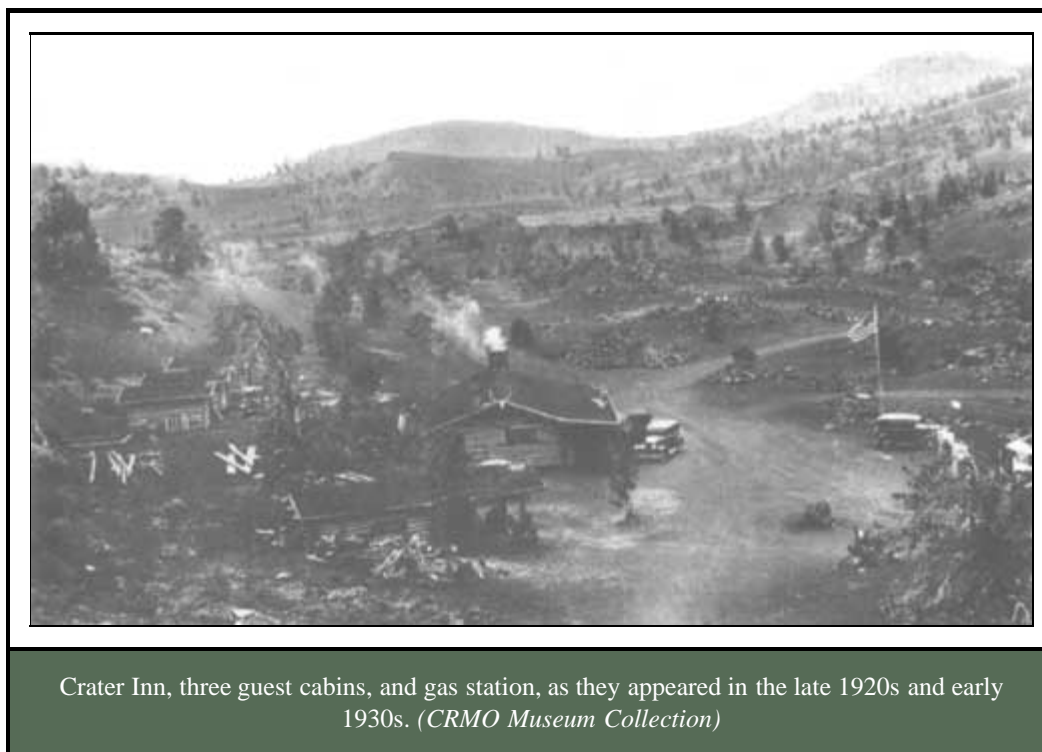
I have always felt that, due to the nearness of Arco to the monument, our monument visitors should find their accommodations in that town. For this reason I feel strongly that our development planning should be very modest as to public accommodations--perhaps confining them to meeting the day-time needs of our visitors. For this reason we should encourage the Chamber of Commerce and business men to provide the necessary overnight facilities for tourists who visit the monument. [11]

Tomlinson's decision to leave the provision of "personal comforts to the business interests of Arco" foreshadowed the demise of Crater Inn and established the Park Service's concession policy at Craters of the Moon.

In 1952, the concession's fourth owner attempted to stave off what appeared to be the inevitable by renovating the structures with electrical wiring (when electricity arrived that year) and by making other superficial repairs. The operator, realizing the changing times, stopped short of full modernization because it was not profitable in an age of "deluxe motels." He decided to emphasize the sales of souvenirs and refreshments instead of meals and lodging. The Park Service, as well, prepared for the eventual closure of overnight facilities, and enforced Special Condition 19 in the new operator's permit, which essentially stated that the agency could discontinue cabin rental with the completion of the new headquarters development. [12]

Although the monument's master plans of the early 1950s included a concessionaire wing in the headquarters complex, the facility was eventually omitted from the final Mission 66 master plan. [13] Until then the Service seemed indecisive. When the operator announced his decision not to renew his permit after 1956, the Park Service advertised for operators to run the new concession. The agency's stipulations, while not expressly stating that the Park Service was against a concession in the new development, made the venture an unattractive proposition, specifying that there would be no living quarters available and that the operator would have to incur all expenses (including, it seems, construction costs). [14] What was clear at the time, however, was that the Park Service had decided to officially end overnight accommodations, retain the campground, and operate the monument as a day use area. [15]

In the fall of 1958, Park Service authorities settled the issue by rejecting a concession proposal for a lunch counter, lounge, employee quarters, gas station, and souvenir shop. Although these services were strictly day use, they were available a short drive away in Arco. Moreover, it appears, the compact design theme and costs of construction made the concession facility expendable. [16] When the last buildings of Crater Inn were sold at public auction and removed from the monument in November 1958, the era of concessions ended at Craters of the Moon. [17]



BLIZZARD MOUNTAIN JUNCTION: TESTING THE POLICY

In 1967, less than ten years after the monument's full-service concession ended, the idea of establishing a new concession operation was reconsidered, only this time the site selected lay outside of Craters of the Moon, on its eastern boundary at the Blizzard Mountain Junction. The idea belonged to Superintendent Paul Fritz, who broached the subject during his efforts to revise the 1966 master plan. [18]

The superintendent cited several reasons for his interest in developing a new concession. First, in an age of industrial tourism, the monument's 200,000 annual visitors saturated the existing services and burdened the monument's personnel. Second, larger numbers of monument visitors were "striving for...liquid refreshments, food, gasoline, and auto services, overnight accommodations, trailer hook-ups, and camping and picnic supplies." Third,

reflecting his larger agenda of currying public support for the monument's expansion, Fritz advocated a multipurpose approach. The concession would serve well visitors to Craters of the Moon, the traveler along U.S. Highway 93A, and patrons of the Blizzard Mountain Ski Area. [19]

Finally, the proposed site was situated outside the monument boundaries. The superintendent opposed any new development inside the monument, which was constrained by the headquarters' restricted design and physical terrain. Thus the Blizzard Mountain Junction, two miles east of the headquarters and half a mile outside the area, was attractive because it was located on "generally flat terrain and not on fragile or high scenic geologic features." It was strategically situated near the monument, easily visible and accessible from the highway and secondary roads to the Pioneer Mountains and the Challis National Forest. In addition to the new concession development, Fritz planned to move the proposed group campground east, to the northern base of Sunset Cone, and construct a road from it to the Blizzard Mountain Road, north of the highway, thereby creating a self-contained camping and concession facility away from the headquarters area. [20]

In his negotiations with the Bureau of Land Management (under whose jurisdiction the Blizzard Mountain Junction fell), Superintendent Fritz found the agency amenable to his plan. In an August 22, 1967 memorandum, for example, the BLM offered an "equal" land exchange with the Park Service to allow the monument to obtain the proposed site, in effect transferring grazing for nongrazing lands, and modifying the boundaries for administrative efficiency. Hence, Idaho Falls District Manager Jesse Kirk suggested that the monument cede two parcels totaling 160 acres in the north end, believing they were better off under BLM management. A parcel of comparable size, contiguous with the monument and having little grazing value would be transferred from the BLM to the NPS. [21]

Over the next month the BLM tossed around several proposals for consummating the exchange. The first was formal legislation, with a special lease granted in the interim to enable the Park Service to begin planning and construction; the second means abandoned the first, however, and favored adding the lands by presidential proclamation, leaving the boundary adjustments intact. [22]

Even though Fritz had the support of the BLM, he could not convince his superiors in the regional office to alter the monument's concession policy. The 1965 master plan team concluded that no new facilities or boundary changes were necessary, and agency officials held firm to that decision. To no avail, Fritz argued that the proposed concession would be mutually beneficial, and in order to make it possible, the Park Service must enter into the land exchange, since the BLM apparently had no desire to operate a concession. [23]

Reiterating the Park Service's position, Acting Regional Director Raymond O. Mulvany told the superintendent that agency officials "do not share your enthusiasm for the development of a concession facility at Craters of the Moon." The costs were prohibitive, especially when "facilities are available within a 30 minute drive of the monument." And, the "prudence of adding lands to the monument" for the concession was questionable. Furthermore, Mulvany believed, the services of a concession should be left to the private sector to develop--outside of the monument--since, it was thought, nonmonument visitors would use the facility most. Thus, no matter the variations offered by Fritz, the agency held fast to the existing (1966) master plan and past policy, and considered the "matter closed until such time as a new master plan study is made at Craters of the Moon." [24]

In essence, the superintendent challenged the no-concession policy by attempting to remove the development from the headquarters area. But while that eliminated one problem, it failed to take into account that the Park Service would not manage a concession anywhere inside (or

outside) park boundaries as long as nearby gateway towns or private industry satisfied visitor needs.

Rebuffed by Park Service officials, Fritz interested and then assisted local businessmen in their pursuit of developing a concession. He alerted Idaho Senators Frank Church and Les Jordan to the situation in early 1968, and with their influence and pressure from private interests, the BLM offered to lease or sell the site at Blizzard Mountain Junction under the Small Tract Act or Public Land Sale Act of 1964. In either respect, however, the bureau believed that commercial development would place it "in the 'town' business," a responsibility belonging to local government. Moreover, Butte County was not zoned. And federal law stipulated that public lands could not be sold without local zoning regulations to "control the manner and type...of commercial facilities." Thus, the responsibility and future of the concession fell to the Butte County Commissioners--and ended with them. In May 1968, they decided that it was not feasible to zone the county at the time, thereby terminating the proposal. [25]

CRATERS OF THE MOON NATURAL HISTORY ASSOCIATION

Park service policy for a concession at Craters of the Moon was based on the failure of Crater Inn, limited physical space, the short-term visitor, and the availability of services in Arco and other towns. Therefore, the only services on site necessary were vending machine refreshments and snacks. In short, the "pop machine" satisfied the wants of the windshield tourists, and the Craters of the Moon Natural History Association, which managed the pop machine, filled the role of a concession.

Formed in May 1959, the purpose of the cooperating association extended beyond serving cold drinks. While it provided the basic visitor services in the absence of a concession, the natural history association's main purpose was to help the Park Service preserve and interpret the monument. Growing from a small organization into a sound business, independent of the regional cooperating association, the monument association has been able to make money for Craters through the sales of publications--books, maps, guides, and handouts--for which it supplies nearly all funds to produce. With the profits from these sales, the cooperating association has filled chronic NPS funding gaps for research, land acquisition and special programs, rehabilitation projects, and training in the monument. Many of the research projects supported resource management and interpretive programs. All told, the association enabled the monument to respond to changing needs as they arose, often independent and with out the restrictions of federal funding. [27]

[<<< Previous](#)

[<<< Contents >>>](#)

[Next >>>](#)

CRATERS OF THE MOON

Administrative History



Chapter 11: CONCLUSION

The management of Craters of the Moon has generally been free of controversy. This was the result of Craters of the Moon's geographic isolation and relatively small size, conditions that contributed to the perception of the monument as a wayside; its proximity to Yellowstone and Sun Valley made it an attractive sideshow to other destinations. In a sense Craters of the Moon never shook this image. Today modern highways bring more visitors who only remain a short time.

Just as the monument lay on the fringe of the Snake River Plain, it lay on the fringe of Park Service management. It occupied a place in the back of the agency mind. It lacked the kind of dramatic conflicts that demanded attention, adding self-sufficiency to its wayside image, especially during its early decades. The monument was a place where old superintendents went to retire and new ones went to train.

It was a weird and beautiful place that captured the imagination and won the devotion of many managers. As its management history suggests, Craters of the Moon existed on the outer reaches in geography only. Otherwise it was tied directly to or influenced by the Park Service mission as it evolved. In a sense this shortened the monument's distance from the agency's mainstream. Remoteness and size, moreover, formed significant management themes. Along with the monument's noncontroversial nature, they contributed to several management "firsts." Craters of the Moon was among the first in its region to be blessed with Mission 66, to have a resource management plan, and to be comprehensively researched and scientifically understood. It was the first area in the national park system to have a designated wilderness. Less positively, it generally ranked high among parks frequently overlooked for funding and staffing, and was occasionally the recipient of poor resource management decisions and development planning handed down from Park Service officials unfamiliar with the monument.

If this administrative history has attempted to do anything, it has been to understand the monument's management themes, to set its management within the context of agency history, and to document its management patterns and program development. Craters of the Moon's management is as deceptively simple as the lava formations it protects are deceptively fragile. Managers are all too aware that the monument is not a machine that runs itself. The resource management program attests to the growing complexity of park issues throughout the system and how many of these are present at Craters. Remoteness and size, perhaps, place it in a unique position. Forces threatening resources in larger parks are not as pronounced at the monument. They do exist but often on a more manageable scale for a park that is a manageable size. It has and will be the responsibility of monument managers to ensure that this situation prevails, and that agency officials do not interpret success and the absence of crisis as reasons for overlooking the monument's needs.

[<<< Previous](#)

[<<< Contents >>>](#)

[Next >>>](#)

adhi/chap11.htm
Last Updated: 27-Sep-1999

CRATERS OF THE MOON

Administrative History



NOTES

CHAPTER 1

1. Quoted in Custodian's Annual Report for Craters of the Moon National Monument, 1939.

CHAPTER 2

1. Presidential Proclamation #1694, 43 statute 1947, 68th Congress.
2. This and the following data have been taken directly or adapted from pertinent management documents, such as resource management plans and the general management plan.
3. See water discussion in resource management section.
4. See air quality discussion in resource management section.
5. See cultural resource management discussion for further details. The monument was scheduled to have a thorough archaeological study done in 1992.
6. See cultural resources section.

CHAPTER 3

1. Paul G. Sneed, "An Archaeological Reconnaissance of the Craters of the Moon National Monument," Tebiwa: Journal of the Idaho State University Museum 10 (1), 1967, 45-46. Additional archaeological research may alter these perceptions as the only study was a survey not a full investigation. See also, Deward E. Walker, Jr., American Indians of Idaho (Moscow: University of Idaho Press, 1971).
2. Information on Godin's first name varies. See Michael Ostrogorsky, "Historical Overview of the Craters of the Moon National Monument," unpublished paper, Craters of the Moon archives, 1983, 2-3. Merrill D. Beal, A History of Southeastern Idaho (Caldwell: Caxton Printers, 1942), 195. Also see Clarence A. Bottolfsen, "A Salute to Arco--The New Atomic City of the Great Northwest," circa 1949, Arco vertical file, Idaho State Historical Society. And Clarence A. Bottolfsen, "The First Settlers Came to Lost River?" in Little Bits of Lost River History (Arco: Arco Advertiser, 1926).
3. Washington Irving, The Adventures of Captain Bonneville, U.S.A. (New York: G.P. Putnam's Sons, 1898), vol. I, 198. This, of course, is Irving's interpretation of Bonneville's

impressions. Bonneville's true motives are still part of historical debate. See, William H. Goetzmann, Exploration and Empire: The Explorer and the Scientist in the Winning of the American West (New York: W.W. Norton and Company, 1966), 147-150.

4. Idaho State Historical Society, Ref. Ser., 51, 1972 (Rev. 1988). Ostrogorsky, 1-3.

5. Irving R. Merrill, "Tim Goodale and His Cutoff: A Major Trail Segment During and After the Fourth Emigration Wave," Overland Journal, 8 (1990), 11-12. Fred W. Dykes, Jeffrey's Cutoff: Idaho's Forgotten Oregon Trail Route (Pocatello: Pocatello Copy Cat, 1989), 2, 5-7. According to Dykes, 5, the purpose of the cutoff was to secure business for a ferry crossing at the mouth of the Blackfoot River where it joined the Snake River.

6. Irving R. Merrill, Bound for Idaho, 20-21; see also, 12, for figures. 70 percent of the 20,000 emigrants passing through Fort Hall used it in 1863. Also see Idaho Historical Society Ref. Series, #51.

7. Julius Merrill, Bound for Idaho, 101.

8. Ostrogorsky, 7. Merrill, Bound for Idaho, preface. And Merrill, "Tim Goodale and His Cutoff," 12-15. Merrill in this essay notes that the last known covered wagon seen on the trail was in 1910. Highway U.S. 20 was not built until around 1920, connecting Arco with Carey and Hailey. For the trail's function as a stage coach route see Larry Jones, "Staging to the South Boise Mines," Idaho Yesterdays, 29 (Summer 1985), 19-25; Dykes, 10.

9. Ostrogorsky, 8. Merle W. Wells, Gold Camps and Silver Cities: Nineteenth-Century Mining in Central and Southern Idaho 2d Ed. (Boise: Idaho State Bureau of Mines and Geology, 1983), 122-123. The post office lasted until April 30, 1940. It is unclear as to when either town died. Era apparently petered out soon after establishment, and Martin is referred to as an old town site, or the site of the Martin ranch, and continued to appear on monument maps. In addition, smaller mines were prospected in the vicinity, such as the Hub, and other areas in the Lost River region. As far as the monument is concerned, Era and Martin carried the most significance due to their proximity and influence on towns like Arco. See, Clarence A. Bottolfsen, Little Bits of Lost River History, (Arco Advertiser, 1926).

10. Ostrogorsky, 7-8. Olaf T. Hagen interview with Judge D.J. Martin, June 19, 1940, CCF-CRMO 1930-53, Box 267, file 101, NA-PSR. Also see Beal, 194-95.

11. Other acts include the Homestead Act of 1862, as well as the Desert Lands Act, the Timber and Culture Act of the 1870s, and the expanded Homestead Act of 1909. Acts concerned with irrigation in this dry environment seem to have created the most results.

12. Bottolfsen, "A Salute to Arco," 5. "Arco Shows a Rapid Growth," Arco Advertiser, October 8, 1920. This article contains census statistics from 1910 and 1920.

13. Hagen-Martin interview.

14. Stearns, "A Guide to the Craters of the Moon," 1928, 41.

15. Israel C. Russell, "Geology and Water Resources of the Snake River Plains of Idaho," U.S.G.S. Bulletin 199, Washington, D.C.: U.S.G.P.O., 1902.

16. For Paisley's general activities see the Arco Advertiser, October 3, 1924. Addison T. Smith to Horace Albright, September 23, 1924, RG 79, CCF, CRMO, file 0.35, part 1, NA.

17. "Complete Story of Lost Valley," Idaho Republican, January 24, 1927.

18. This account comes from an undated, uncited news clipping entitled "Ancient Craters," from CRMO museum collection, accession #910. The article's text mentions Paisley and does not refer to him as a custodian, nor does it mention Craters of the Moon by name, suggesting that this could have been an account from the late 1910s.

19. Alfred Runte and Anne F. Hyde are two authors who discuss this shifting perception of the environment. See bibliography.

20. Ostrogorsky, 12. Nicholas Casner, "'Two-Gun Limbert': The Man from the Sawtooths," Idaho Yesterdays (Spring 1988), 2-3. Casner's work is to date the most insightful and best study of Limbert.

21. Casner, 1. See also, Clarence A. Bottolfsen, "A Tribute to the Late Robert Limbert," file H 14, file 2, CRMO Archives.

22. This region was uncharted according to General Land Office maps in 1918-1919.

23. For general background on Limbert's exploration see Casner, 6. More extensive coverage is found in Limbert's own accounts in "A Trip to the Moon," The Idaho Statesman, April 10, 1921, and "Among the 'Craters of the Moon,'" National Geographic, 45 (March 1924), 303-328. Ostrogorsky, 16, dates this trip as occurring in 1923, an error, I believe. Monument records indicate that the first seasonal ranger, C. Frederick Shepard, completed a similar trip to Minidoka from the monument along the Great Rift; see "Custodian's Monthly Report," November 1935. See chapter on interpretation.

24. Bottolfsen "Tribute," 1.

25. Robert W. Limbert, "Our Next National Park," 2 and 7, box 1, file 18, Robert W. Limbert Papers, Boise State University.

26. Limbert, "Among the 'Craters of the Moon,'" 327. Last quoted phrase is taken from "Our Next National Park," 1.

27. "A Trip to the Moon," April 10, 1921, 10.

28. Ibid. Quote in "Our Next National Park," 9.

29. "A Trip to the Moon," 10.

30. Ibid.

31. "Would Create a National Park in South Idaho," Idaho Daily Statesman, April 1, 1921, and "On Idaho Volcanoes," Boise Capital News, April 16, 1921. "Party Coming to Explore Craters Arrive June 8th," Arco Advertiser, Special Edition, June 6, 1921; Quote in "Expedition Ready to Explore Moon Valley," Arco Advertiser, June 10, 1921; "'Moon Valley' Gets Many Specimens," Idaho Daily Statesman, n.d., 1921; "'Moon Valley' Trampers Back Friday Morning," Idaho Daily Statesman, June 25, 1921 (for filming); "Valley of the Moon, Idaho, Declared a Wonderland," Salt Lake Tribune, July 8, 1921.

32. "'Moon Valley' Trampers Back Friday Morning," Idaho Statesman, July 25, 1921.

33. Casner, 7. For a more personal account see, Gilbert Grosvenor to Edward F. Rhodenbaugh, March 8, 1924, Edward F. Rhodenbaugh Papers, Box 2, Folder 4, Boise State University. Grosvenor responds to Rhodenbaugh's urging of the Society's publication of Limbert's article, stating that the essay was held up because Limbert was neither geologist nor

trained writer; eventually, Harold Stearns was called upon to confirm Limbert's findings, Stearns adding the final paragraph to the article. In addition, Congressman A.T. Smith of Twin Falls called on and urged the article's publication as well. Also see Limbert to Grosvenor, August 28, 1922. Limbert published similar articles in the Literary Digest, Outdoor Life, and Sunset Magazine; see Casner.

34. Limbert also nudged President Calvin Coolidge's decision by sending him a photo-scrapbook complete with narration of the monument, yet while Limbert's scrapbook exists, it cannot be confirmed that it is the one Coolidge received. See Casner, 7.

35. The majority of groups appearing in state papers appeared to be connected with local chambers of commerce.

36. "A Trip to the Moon," Idaho Statesman, April 10, 1921.

37. "A Trip to the Valley of the Moon," Arco Advertiser, June 17, 1921, 4.

38. Minutes, Pilgrim Brotherhood of the First Congregational Church of Boise, May 16, 1921, First Congregation Church of Boise. Pilgrim Brotherhood Book of Minutes. February 1911 to August 1924. Pilgrim Brotherhood to Addison T. Smith, June 15, 1921, and Community Council of the Community of Boise to Warren G. Harding, June 24, 1921, RG 79, CCF, CRMO, file 0.35, part 1, NA. Both petitions included the president, although they were routed eventually back through the Department of Interior, and the National Park Service. Fisher's trip is mentioned in "A Trip to the Valley of the Moon," Arco Advertiser, June 17, 1921; apparently he was part of a park commission involved in drafting a report for the National Park Service.

39. Alfred Runte, National Parks: The American Experience (Lincoln: University of Nebraska Press, 1979), 48-64, expounds his concept of worthless lands.

40. Pilgrim Brotherhood to Harding.

41. See, for example, Limbert to Grosvenor, August 28, 1922. "Auto Brings Valley of the Moon Within Easy Reach of Tourists," Arco Advertiser, July 21, 1921. Harold Stearns to A.B. Cammerer, Acting Director, National Park Service, RG 79, CCF, CRMO, file 0.35, part 1, NA.

42. "Lost River Valley As a Scenic Interest," Arco Advertiser, December 17, 1924.

43. "Community 'icnic a Successful Event," Arco Advertiser, June 17, 1921. Note: This article mentions a road leading into the monument area up to the "craters."

44. The Arco Advertiser, July 21, 1921.

45. "Limbert to Talk about Craters," Arco Advertiser, March 17, 1922. The loop road construction seems to be dated at 1922; at this time enough evidence indicates that a road, loop or otherwise, was built by local residents interested in promoting the area; Limbert to Grosvenor, August 28, 1922 mentions this, as does Salt Lake Tribune, March 23, 1924. Zink, 35. For discussion of the "first" hotel at Craters, see "Hotel at Craters Soon," Arco Advertiser, May 19, 1922. It is not known what happened to these plans, Crater Inn was finished shortly after the monument's creation. See chapter on concessions.

46. Salt Lake Tribune, March 23, 1924.

47. Era Martin reportedly was selling lava bombs and other souvenirs to visitors, While most

of this activity is sketchy, the sense is that tourism begets souvenir hunting. See, "Congressman Plans to Get National Park for Southern Idaho," Arco Advertiser, February 25, 1924.

48. Boise Capital News, November 1, 1923. The group's name appears, for example, in articles on the dedication of the monument. Mostly it seems as though members were community or business leaders from southern Idaho towns, including Arco.

49. Thomas C. Stanford to James A. Pope, May 28, 1933, Thomas C. Stanford Papers, box 2, file 8, Boise State University. Stanford's reference to the Sawtooth issue appears here and elsewhere in his correspondence.

50. Robert Shankland, Steve Mather of the National Parks (New York: Alfred A. Knopf, 1954), 212.

51. Thomas C. Stanford to Addison T. Smith, July 5, 1930, box 2, file 5, Stanford Collection, Boise State University. Stanford believed that the monument would not impose any "military restrictions" on grazing. See grazing covered in monument evolution chapter and natural resources.

52. The details of Addison T. Smith's involvement are still open to investigation. His papers, housed at the Idaho State Historical Society, have been purged of any controversial material, and little exists, if anything, on Craters of the Moon. "Congressman Smith Lays Plans to Get National Monument," Boise Capital News, October 6, 1922 (This date should probably read 1923, because it does not correspond to other citations here about Smith's activities, and since this clipping comes from the Limbert collection, he could have mismarked the date.); "Congressman Plans to Get National Park for Southern Idaho," Arco Advertiser, February 25, 1924; Smith to Albright, September 23, 1924, RG 79, CCF, CRMO, File 0.35, part 1, NA. Smith notes he visited the monument for the first time exactly a year prior to this date.

53. See Grosvenor to Rhodenbaugh, March 8, 1924; Ibid.; Quoted in "Congressman Smith Lays Plans to Get National Monument."

54. Arno B. Cammerer to Frederick Fisher, June 27, 1921, RG 79, CCF, CRMO, File 0.35, part 1, NA.

55. Irving, The Adventures of Captain Bonneville, 199.

56. Harold T. Stearns, The Geographical Review, 14 (July 1924), 362-366; quote from 362. Also see Stearns, Memoirs of a Geologist: From Poverty Peak to Piggery Gulch (Honolulu: Hawaii Institute of Geophysics, 1983), 31 and 40. Note: Ostrogorsky, 9-10, discusses Stearns's 1921 investigation, saying that both Meinzer and Wright accompanied Stearns when none of the material places the three together, except in their approval of the monument as reported in "Experts Favor Park in Idaho," Salt Lake Tribune, March 23, 1924, where all three discuss the park proposal; however, it seems that these statements are lifted from a copy of Stearns' report to the NPS.

57. "Craters of the Moon National Monument," 366. Parts of this report are excerpted in Salt Lake Tribune, March 23, 1924.

58. Quoted in Salt Lake Tribune, March 23, 1924.

59. Salt Lake Tribune, March 23, 1924.

60. Stearns, "Craters of the Moon National Monument," 367, first quote. Stearns, A Guide to

Craters of the Moon, 1928, 35-39. Stearns used a variety of estimations, such as dating limber pine crusted in the lava, comparisons with Hawaii, soil studies, and Indian folklore. He was guarded on all his estimates. Radiocarbon dating would eventually clarify his investigation, placing the youngest flows at around 2,100 years of age.

61. William Spry to Ralph S. Kelley, December 28, 1923, RG 79, CCF, CRMO, file 0.35, part 1, NA.

62. E.C. Finney to Calvin Coolidge, May 1, 1924, RG 79, CCF, CRMO, file 0.35, part 1, NA.

63. Stearns to Cammerer, February 2, 1924. We know little of the Smithsonian's involvement, except that C.D. Walcott, Secretary of the Institution and George P. Merrill, head curator of geology, had commented on the name of the monument. The Smithsonian, perhaps was involved in an auxiliary capacity, filling in expertise where it was unavailable in the Park Service.

64. "Limbert to Talk about Craters," Arco Advertiser, March 17, 1922.

65. Stearns to Cammerer, February 7, 1924; Cammerer to Mather, February 7, 1924.

66. "Congressman Tells of Plans," Boise Capital News, Sunday edition, January 26, 1924.

67. Limbert to Smith, February 14, 1924, RG 79, CCF, CRMO, File 0.35, part 1, NA.

68. For a description of the travails of surveys, begun in 1910, of southern Idaho, see "'Valley of the Moon' Was Known as the 'Great American Desert' in Early Days but Name Changed by Senator Heyburn," Sunday Capital News, June 25, 1922.

69. Harold T. Stearns, "Proposed Boundary Changes For Craters of the Moon National Monument, Idaho," RG 79, Entry 7, CCF, CRMO, file 0.35, part 1, NA, 1.

70. Presidential Proclamation #1694, 43 statute 1947, 68th Congress, May 2, 1924.

71. June 8, 1906, 34 Stat. L. 225.

72. "1500 People Attend Opening," Arco Advertiser, June 20, 1924. Quote from "Craters Proclaimed National Monument," Arco Advertiser, May 9, 1924.

CHAPTER 4

1. Harold T. Stearns, "Proposed Boundary Changes for the Craters of the Moon National Monument, Idaho," RG 79, Entry 7, CCF, CRMO, file 0.35, part 1, NA, 1-2. Ostrogorsky, 11, gives some of this account. It is not entirely clear what happened to the GLO survey, or if the 1925 survey was in fact part of the one requested by Mather in 1923. The Salt Lake Tribune, March 23, 1924, for example, reported that a survey would be conducted but it would delay the monument's establishment. While this did not happen it seems to indicate that the monument was hastily proposed and drawn due to lack of information and perhaps other reasons yet unknown. In addition, it appears that no lands were excluded.

2. Stearns, "Proposed Boundary Changes," 3-7, 5 for quote.

3. Bert H. Burrell to the Director, National Park Service, July 21, 1927, RG 79, CCF, CRMO, file 0.35, part 3, NA, 4. For further discussion, see chapter on administrative

overview.

4. Presidential Proclamation #1843, 45 statute 2959, 70th Congress, July 23, 1928.

5. Presidential Proclamation #1916, 46 statute 3029, July 9, 1930.

6. For further discussion see chapter on administrative overview. Other delays seem to have come from matters of construction costs in the summer of 1930. Kittredge to Director, November 1, 1930, RG 79, CCF, CRMO, file 0.35, part 6, NA, states that all bids came in too high.

7. Horace Albright to Representative Burton French, n.d., RG 79, CCF, CRMO, file 0.35, part 5, NA. See also Albright to Senator John Thomas, February 12, 1931, Ibid., part 8.

8. "Right-of-Way Deed," file L, CRMO Archives. The official acceptance by the assistant secretary of interior was December 27, 1930. For information on Arthur lands, see Memorandum for the Director, January 21, 1932 (?), RG 79, CCF, CRMO, file 0.35, part 10.

9. Executive Order 5482, November 14, 1930. See Kilpatrick Brothers Company to National Park Service, December 4, 1930, RG 79, CCF, CRMO, file 0.35, part 6, NA. These lands were in T. 1 and 2, N., R. 23 E.

10. H.R. 15877, February 21, 1931, 71st Congress, 3d Session (46 Stat. 1206). In 1928 and 1929, he presented bills that were omnibus in character, calling for building roads and other improvements within Craters of the Moon, including provisions for constructing an adequate water supply. Both bills failed, perhaps, because they requested that the federal government appropriate \$35,000 dollars to complete monument improvements. H.R. 13624, May 8, 1928, 70th Congress, 1st Session and H.R. 5055, November 11, 1929, 71st Congress, 1st Session.

11. Memorandum for the Secretary from Horace M. Albright, January 12, 1931, reprinted in H.R. Report No. 2286, 71st Congress, 3d Session, 2.

12. Albright to Thomas, February 12, 1931; Albright was referring to roads, trails, and campgrounds, all of which were tied up with exchanging lands and building the system. Note also that in early plans to develop campgrounds, the Service wanted to extend water to Devil's Orchard, but were stymied, apparently, by a school section not acquired until 1952.

13. John Thomas to Thomas C. Stanford, January 31, 1931, Thomas C. Stanford Papers, Boise State University. S. 5717, January 14, 1931, 71st Congress, 3rd Session.

14. Thomas C. Stanford to Addison T. Smith, July 5, 1930, Stanford Papers, box 2, file 5. For more discussion, see resource management chapter.

15. Thomas C. Stanford to Addison T. Smith, July 5, 1930, box 2, file 5, Stanford Papers. F. Ross Peterson, Idaho: A Bicentennial History (New York: W.W. Norton and Company, 1976), 141-142. Stanford to John Thomas, January 27, 1931, box 2, file 6, Stanford Papers.

16. Albright to Thomas, February 12, 1931, RG 79, CCF, CRMO, file 0.35, part 8, NA.

17. Stanford to Thomas, February 15, 1931, Stanford Papers, box 2, file 6.

18. The Kilpatrick Brothers were anxious to have the legislation enacted, and pressured Thomas to "convince your protesting constituent of the wisdom, propriety, and reasonableness of the proposed exchange." F.W. Mondell to John Thomas, February 12, 1931, RG 79, CCF, CRMO, file 0.35, part 8, NA. Thomas to Stanford, February 20, 1931,

Stanford Papers, box 2, file 6, BSU. This did not put an end to Stanford's protests however. For several years he attempted to reinstate grazing in the northern unit.

19. Whether or not the water line actually crossed the Arthur land is not entirely clear at this time. Conrad Wirth believed it had in January 1932, and urged an immediate resolution. See, Memorandum for the Director, January 21, 1932 (unfiled). Robert Zink, "Short History, Craters of the Moon National Monument," "Water Development," 7, says that the Service's intention was never to build on Arthur lands, nor did this ever occur.

20. For the agency's agreement to this exchange, see General Land Office Report, W.H. Burnett to Commissioner, May 21, 1932, RG 79, CCF, CRMO, part 0.35, part 10, NA. See also, General Land Office Field Division to Commissioner General Land Office, August 10, 1932, RG 79, 76 A1162, 131597, box 4, file L-1429, National Archives-Pacific Northwest Region. It was agreed that most of the lower reaches of Little Cottonwood Canyon were not suitable for year-round grazing due to scarcity of water. This and the fact that the company had undergone some financial hardships at the hands of the Park Service were reasons for the exchange. Burnett to Commissioner, 5.

21. "Warranty Deed," file L-54, CRMO Archives. The official date of acceptance comes for the monument's 1946 base map.

22. Zink, "Water Development," for more extensive treatment of the title history. Zink had access to files that are either unavailable at this time, or no longer exist. Recent investigations into the monument's water rights delineate the title history. See file L-54, CRMO Archives.

23. For further discussion of boundary adjustments and related issues, see sections on grazing, wildlife, water, and mining.

24. Carl Clausen to the Director, National Park Service, May 23, 1934, in Memorandum, Associate Director A.E Demaray to Custodian, Craters of the Moon National Monument, June 23, 1934, file L 1429, CRMO Archives.

25. H. R. 7930, 74th Congress, 49 Statute 1484. House of Representatives Report No. 1399, 73 Congress, 2d Session, April 30, 1934; Harold L. Ickes to Rene L. DeRouen, May 2, 1935, Senate Report No. 2140, 74th Congress, 2d Session, May 29, 1936.

26. "Boundary Status Report," January 4, 1963, file L-1417, CRMO Archives.

27. Memorandum, Superintendent Roger Contor to Regional Director, Region Four, February 10, 1965, file L 1417, CRMO Archives.

28. Ibid., 2.

29. Jesse L. Kirk to Superintendent Roger Contor, October 18, 1965, file L 1417, CRMO Archives.

30. "Boundary Adjustment Proposal," file L 1425, "Boundary Adjustments for Craters of the Moon National Monument," Lands Division, Central Classified Files, Pacific Northwest Regional Office.

31. Memorandum, Harlan F. Hobbs, Chief, Division of Lands, Pacific Northwest Regional Office to Chief, Water Resources Division, National Park Service, February 11, 1988, file L 1425, Ibid. Information on the status of the bill comes from personal interviews with monument and regional office staff.

32. An investigation by Custodian Burton C. Lacombe in the summer of 1931 revealed that the expansion of the monument draped the northern boundaries around ten claims, nine in Section 22 belonging to Era L. Martin (approximately 160 acres), and one in Section 21 belonging to Josia Howard and others (approximately 20 acres), and a number of abandoned mining locations. Note: the northern unit also had other well known mines near it such as the Hub, and the Horn Silver Mine. Burton C. LaCombe to Director, National Park Service, August 3, 1931, RG 79, CCF, CRMO, Acc. 761102, FRC.# 131597, box 4, file L 1429, NA-PNR. Memorandum, Guy E. McCarty to Regional Director, Region Four, December 9, 1938, RG 79, CCF, CRMO, 1930-1953, file 609.01, NA-PSR.

33. This claim, because it was filed in the month following the monument's enlargement, should have been considered invalid after another NPS inspection in 1934. However, question as to the validity of the claim transpired over the next ten years. On January 29, 1945, Region Four Director O.A. Tomlinson decided that after a decade of indecision it was wise to consider the claim valid until it could be bought out at a later date. Tomlinson followed the advice of Custodian McCarty, who believed that the mine claim locators had proven their claim, and that the Park Service should recognize the claim and purchase it later. The purchase (or abandonment) eventually took place; the exact date is not known. The best source is Carl Lausen to Director, National Park Service, (Report on mining claims in northern unit), May 23, 1934, file L 1429, CRMO Archives. See also, McCarty to Regional Director, December 9, 1938; McCarty to Regional Director, January 23, 1945; Memorandum for the Director, January 29, 1945, and Memorandum, Acting Regional Director, Bernard F. Manbey to the Director, October 19, 1950, CCF, CRMO, 1930-53, file 609-01, NA-PSR.

34. Carl Lausen refers to the owner as Mattie D. Martin, while other reports say Era. See report of 1934 cited above.

35. Acting Director, A.E. Demaray to Custodian, Craters of the Moon National Monument, February 16, 1934, RG 79, CCF, CRMO, Acc. 76A11062, FRC.# 131597, box 4, file L 1429, NA-PNR; McCarty to Regional Director, December 9, 1938.

36. In October 1950, Superintendent Aubrey Houston tried to interest the new owner, Mrs. Roy Francisco (formerly Mrs. Mable Berry), in selling some or all of the claims, but apparently he did not succeed with her or his superiors. Memorandum, Aubrey F. Houston to Regional Director, Region Four, October 3, 1950, file 609-01, NA-PSR.

37. Memorandum, B.F. Manbey to Superintendent, Craters of the Moon, September 29, 1959, file 609-01, NA-PSR.

38. Memorandum, Acting Regional Director, Region Four, Herbert Maier to the Director, November 3, 1959, file 609-01, NA-PSR.

39. Memorandum, Assistant Regional Director, Region Four to Superintendent, Craters of the Moon National Monument, November 20, 1959.

40. Memorandum, Assistant Regional Director, Region Four to the Director, November 22, 1960; Joe T. Fallini, BLM State Director, Idaho State Office to Floyd A. Henderson, October 3, 1961; Memorandum, James M. Siler to Superintendent Craters of the Moon, October 14, 1963, file 609-01, NA-PSR. Memorandum, Daniel E. Davis to Regional Chief, Division of Lands and Water Rights, March 16, 1964. Memorandum, William V. Appling to Regional Director, Western Region, March 22, 1965, CCF, file Y 2619, CRMO. Memorandum, Roger J. Contor to Jack M. Murphy, June 16, 1965; Dennis L. Carter, Executive Secretary, CRMONHA to Paul Fritz, November 27, 1967, CCF, file L 1425, CRMO. "Summary Annual Narrative Report of Superintendent Craters of the Moon National Monument," July 1, 1965-June 1, 1966, and July 1, 1966-June 30, 1967, RG 79, CCF, CRMO, Acc. 76A1102, FRC.#

131595, box 2, file A 2621, NA-PSR.

41. Eastern Idaho Association of Civic Clubs, "Resolution," August 1, 1938, RG 79, CCF, CRMO, file 630, NA-PSR. This club drafted its document at Craters of the Moon.

42. Memorandum, Guy E. McCarty to Regional Director, March 29, 1940; Acting Director A.E. Demaray to Senator John Thomas, May 16, 1940, RG 79, CCF, CRMO, file 630, NA-PSR.

43. Presidential Proclamation #2499, July 18, 1941, 55 statute 1660. "Easement, Craters of the Moon National Monument to State of Idaho," nd, RG 79, CCF, CRMO, file 630, NA-PSR. One issue was the realignment of the road and the new road's entrance into the monument. See development chapter. There were other considerations presented but ignored. One suggestion was to transfer all of Section 36, a school section, in T. 2., N., R. 24, E., to the government and resolve other land issues in the process, but this failed. See, Memorandum, B.F. Manbey, Acting Regional Director, to Director, April 11, 1940, CCF, CRMO, file 630, NA-PSR.

44. The issue arose again when the Park Service tried to exchange Section 36 during planning for the 1941 proclamation.

45. The Land Board worried that it was setting a bad precedent by accepting the Craters of the Moon appraisal which was on average less than the Atomic Energy Commission's average of \$6 per acre--for land of a considerably larger size. (It is interesting that one of the appraisers was C.A. Bottolfsen, long time park supporter.) As for the Service, it wished to have excluded 2.41 acres of Section 36 ceded for the highway right of way in 1941. Basically, the Park Service could not buy land it had ceded in 1941, and did not want to own some two and a half acres of highway. In the end, negotiations proceeded amicably -- the state selling the land less the small acreage, and the Park Service paying the original price as a political gesture.

46. Documents relevant to the school lands purchase can be found in RG 79, CCF, CRMO, 1930-1953, file 610, NA-PSR. See in particular Memorandum, Guy E. McCarty to the Regional Director, February 13, 1948; Memorandum, Assistant Director Hillory Tolson to Regional Director, Region Four, April 6, 1950; Memorandum, Aubrey F. Houston to Regional Director, Region Four, May 21, 1950; Note for Regional Director from B. F. Manbey April 1951 (states he does not think lands are a threat but should follow course set in motion by AEC); United States of America vs. 793.19 Acres of Land, more or less, in Butte County, Idaho. State of Idaho, February 13, 1952, Preliminary Order of Condemnation.

47. Memorandum, Superintendent, Craters of the Moon National Monument, to Regional Director, Region Four, October 20, 1958, "Report on Proposed Addition to Craters of the Moon," file N, folder 3, CRMO Archives, 4-5. This report, by Superintendent Floyd Henderson and Park Service Biologist Adolph Murie, quotes the Fosberg-Tisdale report, entitled "Proposed Addition to Craters of the Moon National Monument."

48. Ibid., 5-6.

49. Ibid., 3. Min Hironaka, of the Boise Research Center for the United States Forest Service, for example, stated that there was evidence of Indian trails, rodents, big game animals, and cheatgrass near and in the kipuka. Even so these were minor concerns given the fact that all representative grasslands might disappear entirely. Attesting to the site's research significance, researchers in addition to Fosberg and Tisdale had established plots in the kipuka.

50. This comes from Boundary Status Report, March 8, 1960, which states that this information is contained in "First Field Investigation Report...September 3, 1958..." by Murie and James Cole, published February 1959.

51. "Report on Proposed Addition," (summary section), 1-3.

52. "Boundary Status Report, Craters of the Moon National Monument," March 8, 1960, CRMO Archives.

53. Ibid. See also, Memorandum, Director, National Park Service to Assistant Secretary, Public Land Management, November 25, 1959.

54. Ibid.

55. Memorandum, Acting Director, National Park Service to Regional Director, Region Four, August 8, 1960. Superintendent Floyd Henderson garnered support from Idaho commercial organizations, the state's Department of Commerce and Development, the governor, among others. See file L 1429, CRMO Archives.

56. Memorandum, Associate Director, E.T. Scoyen to Regional Director Region Four, March 1, 1961; Scoyen to Assistant Secretary, Public Land Management, May 11, 1961, CCF, file L 1417, CRMO.

57. Frank Church to John A. Carver, Jr., August 1, 1961, Frank Church Collection, box 32, file 17, Boise State University. See also additional memoranda from Church staff affixed to this material.

58. The agency stated that while it had not planned to, it could make the "inaccessible" grassland accessible to tourists, complete with interpretive displays, "as the need arises." The Park Service also recognized that the lava barrier was in fact penetrable with some work. See, for example, John A. Carver, Jr. to Senator Church, September 7, 1961, Church Collection, box 32, file 17, BSU. Secretary of the Interior Horace Udall to David E. Bell, October 2, 1962, file L 1417, CRMO Archives.

59. 87th Congress, 1st Session.

60. Apparently the stipulation that all withdrawals of over five thousand acres be reviewed by House and Senate land committees was still adhered to but really a formality considering the previous hearings for the bill. See Acting Director Jackson E. Price to Wayne N. Aspinall, July 18, 1962, and Price to Clinton P. Anderson, July 18, 1962, CCF, file L 1417, CRMO. Stewart L. Udall to Bell, October 2, 1962, CCF, file L 1417, CRMO.

61. Roger Contor, "The Proposed Tutimbaba Wilderness of Craters of the Moon National Monument," The Living Wilderness 30 (Winter 1966), 3.

62. General information on the establishment of the monument's wilderness is contained in a report entitled, "Wilderness Recommendations for Craters of the Moon National Monument," Idaho, National Park Service, United States Department of Interior, August 1967. Memorandum, Superintendent, Craters of the Moon to Monument Staff, July 22, 1965, RG 79, CCF, CRMO, Acc. 76 A1102, FRC# 131597, box 4, file, L 48, NA-PNR. Memorandum, Superintendent Roger Contor to Regional Director, Western Region, August 30, 1966, RG 79, CCF, CRMO, Acc. 74 A207, FRC# 13184, box 7, file L 48, NA-PSR. Unless otherwise noted, material from Contor's activities are from a personal interview. Contor's brother maintained lifelong connections with the Indians of the Fort Hall Reservation, and provided Contor with contacts within the tribe, and helped fulfill his desire to emphasize the Native

American culture in the area.

63. "The Proposed Tutimbaba Wilderness," 3, 8.

64. "Wilderness Recommendations," 19.

65. "Wilderness Recommendations," 32-33.

66. *Ibid.*, 18-20, quote on 18.

67. "Wilderness Recommendations," 20-21.

68. *Ibid.* 1966 MP.

69. Personal correspondence, September 26, 1991.

70. Leslie L. Glasgow, Assistant Secretary of the Interior, to Henry M. Jackson, April 14, 1970, Frank Church Papers, series 2.3, box 1, file 14, Boise State University.

71. "Congressional Record--Senate," April 1, 1969. Church's emphasis on the space program was not mere patriotic rhetoric. Senator Len B. Jordan, member of the Senate Committee on Aeronautical and Space Sciences, wanted to use the monument's lunar-like terrain for simulated lunar landings. This was more important than wilderness if the one precluded the other. Len B. Jordan to George B. Hartzog, Jr., May 10, 1968, RG 79, CCF, CRMO, Acc. 76 A1102, FRC# 131597, box 4, file L 48, NA-PSR.

72. H.R. 16821 and 16822, 91st Congress, 2d Session. Apparently, proposals went as high as 5,000 acres. For estimates on the size of the addition, see Frank Church to Bruce Bowler, May 28, 1970, Frank Church Papers, Series 2.3, box 2, file 1, Boise State University.

73. Fritz also opposed the road because it was not well designed and thought out from a landscape architect perspective. Moreover, Fritz thought that the proposed buffer around the monument was a mistake as well.

74. Memorandum, Theodor R. Swem to Regional Director, Western Region. December 23, 1966, file D 18, CRMO Archives. Memorandum, Superintendent Paul Fritz to Regional Director, Western Region, February 20, 1967, RG 79, CCF, CRMO, Acc. 74 A207, FRC# 131184, box 7, file L 48, NA-PSR.

75. Interview with Paul Fritz, August 30, 1990. According to Fritz, McClure's interest was political, who used the wilderness bill to get a Senate seat, and Fritz gives McClure the most credit for the bill's passage. Since McClure was not from the Second District, but from the first, he needed Hansen's assistance.

76. Fred J. Russell to Wayne N. Aspinall, June 25, 1970, House Report 91-1441, 91st Congress, 2d Session, 22-23.

77. H.R. 19007, August 13, 1970, 91st Congress, 2d Session, 5.

78. *Ibid.*, 9.

79. Public Law 91-504, 84 Statute 1104.

80. The name reflected the monument's, it seems, in an effort to be recognizable to the public. Fritz contends that the former name merely fell through the cracks.

81. Ronald A. Foresta, America's National Parks and Their Keepers (Washington, D.C.: Resources for the Future, Inc., 1984), 33-35.

82. Most of these ideas stem from my reading of Hal Rothman, "Second-Class Sites: National Monuments and the Growth of the National Park System," Environmental Review, 10 (Spring 1986), 44-56. The point here is that at least in the beginning monuments were not the primary focus of the young Park Service attempting to preserve nationally significant sites of spectacular scenery. A young agency put its funding elsewhere and monuments were left largely on their own. But monuments were significant because they preserved and protected various natural and cultural features; most often though they were small and mono-focused in nature. The public it appears seemed to be drawn more to sections of land that reminded them of their natural heritage.

83. Ibid.

84. "Craters Survey Shows Many Attractions," Arco Advertiser, October 29, 1926.

85. "6000 People Visit Craters During Season of 1927," Arco Advertiser, December 16, 1927.

86. Fritz was the first to make a formal effort. In 1940, for instance, Custodian Guy McCarty proposed that the Park Service acquire the Shoshone Ice Caves. See Assistant Regional Director B.F. Manbey, "Comments and Notes...Special Inspectional Trip to Craters of the Moon National Monument," June 12, 1940, RG 79, CCF, CRMO, file 101, NA-PSR.

87. Pat Ford, "Now Idaho Wants National Parks," High Country News, October 10, 1988, 18, for Bullard quote. Other quote is from personal interview with Fritz, August 30, 1990. Unless otherwise stated, the story of the monument's expansion that follows is taken from both of these sources.

88. See Plan, Craters of the Moon, Preliminary Draft, September 12, 1973, CRMO Archives.

89. Service Center Planning Directive: Craters of the Moon National Monument, March 15, 1973; Draft: Assessment of the Environmental Impact of the Proposed Master Plan and Proposed Additions to Craters of the Moon National Monument, October 30, 1973, in Craters of the Moon file, Maintenance Division, PNRO.

90. "Now Idaho Wants National Parks," 18.

91. Shoshone Chamber of Commerce to Secretary of the Interior Donald Hodel, March 3, 1987, CRMO, CCF, L 58.

92. Cecil D. Andrus to William Penn Mott, April 1, 1988, CCF, file L 58, CRMO.

93. William Mott to Cecil Andrus, May 23, 1989, CRMO, CCF, L 58.

94. Reconnaissance Survey: Expansion of Craters of the Moon, NPS, March 1989, 6.

95. Ibid., iii.

96. H.R. 3782, 101st Congress, 1st Session.

97. Management Alternatives: Expansion of Craters of the Moon National Monument, NPS, August 1990, 10. H.R. 3782.

98. Management Alternatives, 2-4.

99. Ibid.

100. "Craters of the Moon Deserves Park Status," Idaho Daily Statesman, November 22, 1989; "A Special Place," Post-Register, December 8, 1989; "Management Alternatives," 17.

101. "No Backers for Craters Plan at Hearing," Idaho State Journal, May 24, 1990.

102. "Stallings Backs Off on Craters of the Moon Plan," Idaho Statesman, August 1, 1990.

103. "Craters Park Idea should be Put on Hold for a While," The Times-News, August 22, 1990.

104. "Congressmen Tour and Fly Over Craters of the Moon Wednesday," Arco Advertiser, August 22, 1991.

105. "Chairman Noncommittal on Park Status for Craters," Post-Register, August 15, 1991. Information on the future of the bill is sketchy at this time. This is a general assessment from regional office staff.

CHAPTER 5

1. Barry Mackintosh, Shaping the System (Washington, D.C.: National Park Service, 1991), 16-23, discusses administration and quantity of monuments at the time of NPS creation. See also John Ise, Our National Park Policy: A Critical History (Baltimore: Johns Hopkins Press, 1961), 154-160, 191. Little work has been done on national monuments and their roles in building the system. An excellent study for monuments, primarily cultural monuments of the southwest, is Hal Rothman's Preserving Different Pasts: The American National Monuments (Urbana: University of Illinois Press, 1989). It seems that Rothman's conclusion that Mather and Albright were averse to monuments as a rule is still open to debate.

2. Rothman, Preserving Different Pasts, 91, 113, 116.

3. This is Hal Rothman's term.

4. Mackintosh, 42, and Rothman, 166, and Ise, 352.

5. Mackintosh, 44-45.

6. Ronald A. Foresta, National Parks and Their Keepers (Washington, D.C.: Resources for the Future, 1984), 52-55.

7. Rothman, in Preserving Different Pasts, points out the importance of the New Deal to monument management as a benchmark for acceptance within the park system, but Mission 66 supplied the administrative infrastructure necessary to carry out the missions of individual monuments.

8. The Atomic Energy Commission established the National Reactor Testing Station in the desert some seven miles east of Arco in 1949 (around 25 from CRMO). The testing station set off a construction boom, provided jobs to nearby communities, and increased the region's base population by about 10,000 in the subsequent decade. For general information on the National Reactor Testing Station, later Idaho National Engineering Laboratory, see Carlos A. Schwantes, In Mountain Shadows: A History of Idaho (Lincoln: University of Nebraska Press, 1991), 218-219.

9. From what the records we have indicate, no Park Service employee visited the monument prior to establishment. See discussion on the creation of the monument.
10. An actual copy of this report is missing at this time. Reference is made in Horace M. Albright to the Director, July 24, 1927, RG 79, CCF, CRMO, file 0.35, part 3, NA.
11. For accounts of Albright's trip, see "Here to Inspect Craters of the Moon," and "Government Officials Inspect Craters," Arco Advertiser, September 19, 1924, and September 26, 1924. For Albright's feelings on the monument see, Albright to Smith, October 2, 1924, RG 79, CCF, CRMO, file 0.35, part 1, NA. His reservations about the site are drawn from a phone conversation with Marian Schenck, Horace Albright's daughter.
12. Albright to Mather, November 4, 1924, RG 79, CCF, CRMO, file 0.35, part 1, NA.
13. This is actually fiscal years, beginning in July. See Acting Assistant Director A. E. Demaray to Samuel A. Paisley, April 18, 1925, RG 79, CCF, CRMO, file 0.35, part 2, NA.
14. Demaray to Paisley, April 18, 1925, and Arno B. Cammerer to Paisley, May 13, 1926, RG 79, CCF, CRMO, file 035, part 2, NA, for first budget.
15. Arco Advertiser, September 26, 1924. Albright to the Director, July 24, 1927. Estimates vary, see Bert H. Burrell to Director, National Park Service, July 21, RG 79, CCF, CRMO, file 035, part 3, NA.
16. Addison T. Smith to Horace M. Albright, September 23, 1924; Albright to Mather, November 4, 1924, RG 79, CCF, CRMO, file 035, part 1, NA.
17. Paisley to Mather, April 27, 1925, Bottolfsen to Smith, April 27, 1925, Mather to Paisley, May 6, 1925, RG 79, CCF, CRMO, file 0.35, Part 2, NA. Apparently there was some question as to the feasibility of allowing Paisley run an exclusive service, since some homesteaders had been operating similar services for some years. See Arno B. Cammerer to Horace M. Albright, June 23, 1925, *ibid*.
18. "Paisley Resigns as Craters Custodian," Arco Advertiser July 1, 1927. The paper reported that Paisley was allowed to choose his successor based on his "labor of love." For details on the guide business, see discussion in section on concessions.
19. Demaray to Paisley, April 18, 1925.
20. Custodian's Annual Report, 1926, 5.
21. Demaray to Paisley, April 18, 1925.
22. Custodian's Annual Report, 1925 and 1926, 3; 2 and 4.
23. Mather to Paisley, October 28, 1926. Custodian's Monthly Report, June 1, 1927, 1, and October 1, 1927, 2.
24. Custodian's Annual Report, 1926. Quotes from Paisley to NPS, October 1, 1926. Other known waterholes showed signs of depletion, while those with a good supply, such as the Big Sink hole, were beyond easy access.
25. "Proposed Boundary Changes," 5-8. Note also that Stearns predicted that the main campground of the monument should be relocated to the northeast area of Grassy Cone.

26. Burrell was accompanied by Assistant Landscape Engineer Davidson who submitted a separate report, which has not been located, but is said to contain reactions to the monument's layout and assess the situation from a visitor's perspective. See Burrell's report.

27. Burrell to Mather, July 21, 1927.

28. See Burrell's report, entire.

29. It is not entirely clear as to what exactly caused the water to disappear, nor is it entirely understood what creates the water holes. This account is the most commonly given.

30. Moore to Albright, July 19, 1927, RG 79, CCF, CRMO, file 0.35, part 3, NA.

31. Albright's reaction is recorded in Bert H. Burrell to Robert Moore, July 22, 1927, RG 79, CCF, CRMO, file 0.35, part 3, NA.

32. Horace M. Albright to the Director, July 24, 1927, RG 79, Entry 7, CCF, CRMO, file 035, part 3, NA.

33. Custodian's Monthly Report, October 1, 1927, 1-2.

34. Burrell to Moore, July 22, 1927, Burrell to Mather, July 23, 1927, RG 79, CCF, CRMO, file 0.35, part 3, NA.

35. Executive Order 1843, 45 Stat. 2959. See also Acting Secretary of the Interior John H. Edwards to the President of the United States, July 21, 1928, and reply, July 26, 1928, RG 79, CCF, CRMO, file 0.35, part 4, NA.

36. Burrell to Martin, July 22, 1927.

37. See section on land issues.

38. For an outline of events see, Robert Zink, "Short History: Craters of the Moon National Monument," "Water Development" chapter, 1-13. For other information see legislative history, and Custodian's Monthly Report, June 1931.

39. See section on land issues.

40. Quote in Burrell's 1927 report, 2.

41. Ibid.

42. Albright to Mather, July 24, 1927. Albright refers to the "1929 estimates," which I take to mean the 1928-29 fiscal year, or season.

43. For biographical information, see Zink.

44. Robert Moore to Horace M. Albright, March 12, 1931; Albright to Burton C. Lacombe, March 14, 1931; Moore to Albright, March 18 and 26, 1931; John Thomas to Albright March 30, 1931; A.E. Demaray to Moore, March 31, 1931, RG 79, CCF, CRMO, file 0.35, part 8, NA.

45. Albright to Guy D. Edwards, March 5, 1931, RG 79, CCF, CRMO, file 0.35, part 8, NA. Ironically, Albright ideally did "not want to have to put old timers on the ranger force into these kinds of positions, simply because the parks want to get rid of them. Placing Lacombe at Craters was a favor to him. Lacombe retired after two years at Craters, but successive

custodians and superintendents advanced in the Service after passing through tenures at the monument.

46. See the section on grazing.

47. Note a good quote was in October 5, 1929 when Moore wrote to NPS Director stating this is not an "no longer an experiment" yet it took improvements such as the water system to secure anything.

48. Information from the Park Service during the New Deal comes from Harlan Unrau and G. Frank Williss, Administrative History: Expansion of the National Park Service in the 1930s (Washington, D.C.: National Park Service, 1983).

49. Further investigation might uncover more reports; the comfort station is only mentioned in the monthly custodian's report, while roads and trails projects have their own reports.

50. Bicknell assumed management of the monument for the retiring Lacombe on November 1, 1933 and transferred to Casa Grande National Monument on December 20, 1936. He had worked at Casa Grande National Monument in the off season and upon leaving Craters embarked on a long career there.

51. This quote is not Bicknell's but is related in the recommendations by Kenneth C. McCarter to Thomas C. Vint, in a memo entitled, Preliminary F.Y. 1935 Construction Items, submitted by Custodian, Craters of the Moon, February 16, 1933, CCF, CRMO, 1930-53, file 600, National Archives-Pacific Sierra Region, 1.

52. Ibid.

53. See section on developments.

54. Custodian's Monthly Report, July 1935, 2, and July 1936, 2.

55. Report, July 1935, 2.

56. Shepherd led campfire programs, and help put together a museum prospectus. See interpretation chapter.

57. See section on lands.

58. Memorandum, Davidson to Astrup, October 3, 1938, CCF, CRMO, file 600, NA-PSR.

59. See section on developments and lands.

60. Memorandum, July 21, 1943, CCF, CRMO, file 204, NA-PSR, 1.

61. Ibid.

62. Persons to the Director October 16, 1944, RG 79, CCF, CRMO, file 306-06, NA-PSR, 1.

63. Sanford Hill, Report of Field Trip to Craters of the Moon, CCF, CRMO, file A-54, 2.

64. Tomlinson was remanded by Acting Director Hillory Tolson for Person's assessment, for example. See, Memorandum, Tolson to Regional Director, December 12, 1944.

65. It appears that there were no provisions for seasonal during the war period, but this needs more investigation. All custodians were able to hire contract labor for their specific projects.

66. R. B. Moore to the Director, November 14, 1930; Horace M. Albright to Moore, November?, 1930, RG 79, CCF, CRMO, file 0.35, part 7, NA.

67. Samuel Paisley left for California in the winter, and Albert Bicknell worked in Casa Grande National Monument, to which he later transferred.

68. Memorandum, Tomlinson to McCarty, March 2, 1948, RG 79, CCF, CRMO, file 306-06, NA-PSR. This comes mostly from penciled notes in the above file.

69. The only documentation for this is found in the signing of the monthly reports. See Custodian's Monthly Report, November 11, 1948. In addition, the change was one merely in name rather than rank. As one superintendent, and former custodian recalled, visitors mistook custodians for janitors rather than managers.

70. Memorandum, Tomlinson to McCarty, December 28, 1944, and Memorandum, Tolson to Tomlinson, September 28, 1949, RG 79, CCF, CRMO, file 306-06, and file 304, NA-PSR, entire. Also see Memorandum, Tomlinson to Tolson, September 20, 1950, and reply, Tomlinson to Tolson, September 26, 1950, as well as scribbled note by Sanford Hill to Merriam, November 13, 1950, in which Hill states that this transfer might still be viable and more cost effective; Memorandum, Regional Director, Region Four to Files, October 7, 1952, tile 201, *ibid.* Memorandum, Marlow Glenn to Regional Director, Region Four, January 12, 1950, file 306-06, *ibid.* It is unclear as to how long Mount Rainier continued in this capacity; likely it discontinued this after Mission 66.

71. See section on developments.

72. Memorandum, Houston to Regional Director, Region Four, January 27, 1950, RG 79, CCF, CRMO, file 306-06, NA-PSR, 1.

73. *Ibid.*

74. *Ibid.*, 3.

75. Tomlinson to Houston, February 9, 1950, RG 79, CCF, CRMO, file 600, NA-PSR. It should be noted that camping was not ruled out, but other concessionaire development was. It is likely that since the concession business had been struggling that the Service favored its discontinuance. See concession chapter.

76. Superintendent's Monthly Report, July 11, 1952; Zink went on to become the supervisory ranger and first naturalist at the monument.

77. See section on lands.

78. Robert C. Zink to Aubrey F. Houston, August 25, 1956, file H, CRMO Archives.

79. Craters of the Moon: Mission 66 Master Plan, forward.

80. See section on developments and concession.

81. Mission 66 Edition Master Plan, "Guidelines," 6.

82. *Ibid.*

83. For example, until the early 1970s the best information on the area's geologic features was found in the work of Harold T. Stearns from the late 1920s.

84. See section on lands and resource management.

85. See discussion in lands and legislative history section.

86. See section on resource management.

87. See section on interpretation.

88. Master Plan for Preservation and Use, Craters of the Moon National Monument, 1966. See also section on developments. Contor was arguing that the confined area of the headquarters would eventually, if not already, outgrow its usefulness.

89. See resource management chapter for discussion of these plans, and other studies.

90. According to Fritz, he had the full approval of Director George Hartzog, who was all for publicizing national parks and had created the state coordinator position. At the regional office level though, Regional Director John Rutter objected to the superintendent's cavalier attitude and transient behavior. Fritz, an avowed environmentalist, sometimes created a conflict of interest, being a board member, for example, of some environmental groups opposing the Park Service; or, in a more serious vein, his travel outside the region and state was being subsidized by the monument, which Rutter did not approve of. Moreover, Superintendent Robert Hentges believed and was told by the regional director in 1974 that the monument was in bad shape because of Fritz's absences. Personal interview with Fritz. See also discussion in resource management section.

91. See section on lands and legislative history.

92. See section on the recent park movement and developments.

93. See resource management chapter for more discussion of what follows.

94. For further discussion of these topics, see related chapters. Of note, though, is that Hentges found the pay scale at the monument to be out of control. The administrative officer was a GS-11, the same level as the superintendent, and the maintenance foreman was paid a similar wage, a result, perhaps, of Fritz's neglect.

95. Personal interview with Robert J. Hentges. Hentges, for the record, still maintains his innocence in regard to his suspension, the proof for which was insufficient in his mind, but enough to give the government no recourse.

96. See resource management chapter.

97. See lands section.

98. See section on developments and maintenance.

CHAPTER 6

1. Roland H. Wauer and William R. Supernaugh, "Wildlife Management in the National Parks: An Historical Perspective," National Parks (July/August 1983), 14.

2. Ronald A. Foresta, America's National Parks and Their Keepers (Washington, D.C.: Resources for the Future, Inc., 1984), 96.

3. Foresta, 97.

4. "State of the Parks--1980: A Report to the Congress." Also see the follow up report, "State of the Parks: A Report to Congress on the Service-wide Strategy for Prevention for Prevention and Mitigation of Natural and Cultural Resources Management Problems, 1981."

5. The most recent plan was approved in 1992.

6. Most of this material is taken directly from the monument's general management plan.

7. See discussion above on the monument's administrative evolution.

8. See discussion in overview of the monument's administrative development.

9. The management guidelines that the 1966 plan followed were the monument's enabling legislation, the 1916 Organic Act, Secretary of Interior Lane's 1918 directive, the Leopold Report of 1963, the 1965 Long Range Wildlife and Range Management Plan, and the 1966 Master Plan.

10. The most recent resource management plan was approved in the final stages of this document; the plan is important because it follows a new format, comprehensive and cross-referenced with past plans. An adequate inventorying of geologic resources was accomplished, and groundwork was laid in biological resources through deer population studies, bird and mammal species lists, vegetation mapping and the recording of published research documents. See the 1990 Statement for Management, 21, for this and future trends information listed below.

11. The collection of volcanic rocks and other features at the monument is by far the most serious problem, being as old or older than the site itself. Although more random, vandalism takes place where visitors intentionally harm resources, such as breaking off stalactites from caves, chopping out bright red pumice from craters walls, and filling in fissure vents and cones with rock fragments and refuse.

12. For quote see "Congressman Plans to Get National Park for Southern Idaho," Arco Advertiser, February 25, 1924. Note this article reprints an earlier story by the Boise Capital News, hence the 1923 time period. Also refer to earlier sections on creation of monument.

13. "Craters Receive Good Publicity," Arco Advertiser, January 30, 1925.

14. Horace M. Albright to Stephen T. Mather, November 4, 1924, RG 79, CCF, CRMO, file 0.35, part 1, NA.

15. Custodian's Monthly Report, October 1, 1926. Paisley originally created the display for a district fair in Blackfoot.

16. Custodian's Monthly Report, June 8, 1952, 4.

17. Interview with Daniel Davis, August 30, 1990. For figures on attendance, see Superintendent's Monthly Report, June 6, 1963, 2. Interview Robert "Cy" Hentges, September 17, 1990.

18. Vardis Fisher, ed., Idaho: A Guide in Word and Picture (New York: Oxford University Press), 1937, chapter 4.

19. Evidently the treasure hunters kept the location a secret until pressed to reveal it for sake

of the permit. Once they had, regional landscape architects determined that such activity would impair monument resources. For the series of memoranda on this subject, see: Newton B. Drury to Regional Director, Region Four, January 19, 1950; Aubrey F. Houston to Regional Director, Region Four, February 2, 1950; Lawrence C. Merriam to the Director, March 2, 1951; Alfred C. Kuehl to Regional Director, Region Four, April 11, 1951; Lawrence C. Merriam to J.M. England, April 20, 1951, RG 79, Central Classified Files, Craters of the Moon, 1930-1953, file 901, National Archives-Pacific Sierra Region.

20. Custodian's Monthly Report, September 30, 1932, 3.

21. Custodian's Monthly Report, May 2, 1961.

22. Superintendent's Monthly Report, August 6, 1963, 4; see also report for August 4, 1964, 3, for a similar action by a driver crossing Paisley Cone. Resource Management Plan, 1966, 33. Of greater significance, it seems, was that raking, while considered the best form of rehabilitating the fragile cinders, never returned the sites to their original conditions, and it was costly in terms of labor especially if not carried out by the perpetrators themselves.

23. The next reported incident was twenty years later. See Superintendent's Annual Report for 1982, 5.

24. Superintendent's Monthly Report, November 8, 1952. There is no indication as to the extent or amount of cinders removed from the monument (or for that matter the location). Even though cinder hauling does not appear as an issue in the monument's records after this, the potential always seems to exist. The 1976 Statement for Management notes that lava landscaping for new housing in the area poses a risk.

25. Superintendent's Monthly Report, September 3, 1953, 2.

26. Superintendent's Monthly Report, September 5, 1961, 4.

27. Superintendent's Monthly Report, November 6, 1961, 3.

28. The site is no longer called out in monument maps, but is in the North Crater Flow.

29. Aubrey Houston, loose sheet entitled "Special Problems," n.d., CCF, CRMO, Box 267, file 101-01, NA-PSR.

30. For early information on Devil's Sewer consult Robert Zink's section on trails and natural history. A 1943 monument map edition shows both the Devil's Sewer and the Lava Snake referred to by Houston. Later Devil's Sewer disappears from monument maps. For description of the site, see Edgar P. Menning, Interpretive Prospectus for Craters of the Moon National Monument, 1964, 16. Superintendent's Monthly Report, September 7, 1962, 3.

31. There is some indication that the trail design was flawed, bringing pedestrians too close to the feature and inviting its destruction.

32. Resource Management Plan for Craters of the Moon National Monument, 1966, 9.

33. RMP, 1966, 10, 32.

34. Ibid., 50-51. Note: it seems that this was the first time guidelines were set for scientific research; it is unclear what the guidelines said, or if they were just judgement calls based on the staff's discretion. Also it is unclear as to what state laws could have been established; the monument is a proprietary jurisdiction, I think. There are some county ordinances that apply

specifically to the monument. Contor may have been concerned with being able to try cases in local as opposed to regional or district courts.

35. "Superintendent's Monthly Report," April 4, 1966, 3. The ordinance was effective April 1966.

36. Resource Management Plan, 1966, 30.

37. RMP, 1966, 50, and personal interview with Roger Contor, September 6, 1990. Contor's plan was never fully realized, and only the North Crater Flow Trail follows the loop design.

38. Ibid., 50.

39. Essentially, Contor was advocating removal of camping altogether since most visitors used the monument as a rest area or cheap camping spot. There were also questions of aesthetics and design; the campground lay too close to the administrative and park housing structures and highway. RMP, 1966, 50, and CRMO Master Plan, 1966, 5. For an in depth explanation of Contor's plan, see Memorandum, Superintendent Roger Contor to Regional Director, Western Region, January 17, 1966, RG 79, CCF, CRMO, Acc. 71A1326, FRC# 416899, box 1, file D 18, NA-PSR. See development section for more discussion on this topic. Note this recommendation also harkens back to Stearns' 1927 plan.

40. The Master Plan for Preservation and Use: Craters of the Moon National Monument, 1966, 6 and 10. The road would have circumnavigated the butte, allowing visitors to see all the representative features of the monument by completing the road tour of the area with the tree molds near Trench Mortar Flat.

41. For discussion of these issues see development and lands chapters respectively.

42. Superintendent's Annual Report for 1980, 8.

43. Resource Management Plan for Craters of the Moon, 1987, 47.

44. The loop drive has been the focus of visitation throughout monument history.

45. Interview with Robert Scott, March 22, 1991. Draft RMP, 1991, 54-55.

46. Telephone interview with David Clark. See also Memorandum, Superintendent Jonathan B. Jarvis to Regional Director, Pacific Northwest Region, February 24, 1992, Central Classified Files, file N 16, CRMO.

47. As with many vents, the insulating qualities of the lava wells cause ice and snow to remain even in the hot summer months.

48. See, for example, The Arco Advertiser, May 21, 1937.

49. Custodian's Monthly Report, August 1, 1932, 1. Lacombe reported cleaning out two cones of lava rocks thrown by visitors. Six boy scouts helped him. See July 1932 report.

50. Monument records for the spatter cones' management are sparse, due to the purging of records in the past, yet more research might yield better information. One source of information is the monument's photo collection which gives some indication of the density of visitors and their relatively unrestrained activities. See discussion under developments for more information on trails.

51. CRMO Photo Collection, D 30, Negative No. 1171. Note also that the 1964 Interpretive

Prospectus, 29, discusses the site, stating that railings should be installed, trails to back cones obliterated, the trail up the second cone paved, and descriptive and explanatory signs about the geology and sensitivity of the site created and installed.

52. Superintendent's Monthly Report, October 5, 1965, 2.

53. Resource Management Plan for Craters of the Moon National Monument, 31. Note: the trails around the cones and partially up Big Craters were paved or hard packed in 1954. See Superintendent's Monthly Report, August and September 1954.

54. Memorandum, Superintendent Paul Fritz to Chief, DCSSC, October 31, 1966, RG 79, CCF, CRMO, Acc. 70A1355, FRC# 34935, box 3, file D 2215, NA-PSR. This file includes photos of Fritz's plans. Other information comes from personal interviews with Fritz.

55. Superintendent's Annual Report, 1974, 2, 8-9, quoted, 8.

56. Quoted in 1982 Resource Management Plan, 21. Funding for the project and delays exemplify Hentges' decision to await special funding rather than using available cyclic maintenance money. This approach extended to other matters as well, representing the superintendent's procedure of saving money to return to the regional pool at the end of the fiscal year. Interview with Robert Hentges.

57. RMP, 1982, 5.

58. RMP, 1982, 21. The monument also enlisted the aid of the Hawaii Volcanoes National Park, inquiring as to their experience and suggestions on rehabilitation projects of spatter cones. See Memorandum, February 17, 1982, Craters of the Moon National Monument, Central Classified Files, file N 16.

59. Apparently restrictions were placed on access as early as 1981. See Superintendent's Annual Report, 1981, 2.

60. Details of the rehabilitation projects are somewhat sketchy but the overall accomplishments are well documented. Consult the RMP for 1982 and 1987, 5-6, 20-22 and 43-45 respectively. Also consult Memorandum, June 13, 1983, CRMO, CCF, Yellows, file L 7617.

61. Memorandum, Superintendent, Craters of the Moon National Monument, Robert E. Scott, to Regional Director, Pacific Northwest Region, August 27, 1985, file A 2623, CRMO, CCF, Yellows.

62. Superintendent's Annual Report for 1987, 3. See also Resource Management Plan, 1987, 4.

63. RMP, 1987 and 1991 (draft), 45 and 54 respectively.

64. RMP, 1987, 67.

65. Master Plan, 1966, 7.

66. Resource Management Plan, 1983, 49. Hentges interview, September 1990.

67. Scott did not believe this approach would yield any information beyond the obvious impacts that already existed.

68. Resource Management Plan, 1987, 67-69.

69. Telephone interview with Shelly Sparhawk, Craters of the Moon Resource Management Specialist.

70. Resource Management Plan, 1991, 54-55.

71. Memorandum, Superintendent Roger Contor to Superintendent, Badlands National Monument, February 28, 1966, RG 79, CCF, CRMO, Acc. 79A1355, FRC# 34941, box 9, file N 30, NA-PSR.

72. Telephone interview with Robert Scott.

73. RMP, 1987, 85. As discussed below, this perception has changed with federal regulations that underscore the significance of caves.

74. RMP, 1982, 35. Investigation of the caves would also determine which caverns will be actively managed for visitor use, and which ones will be used for research, or simply documented and left alone.

75. Great Owl had the chain ladder, outfitted in 1929, then the wooden stairs. Indian Tunnel had wooden stairs, then metal stairs. Moreover, ladder access predated monument establishment. See discussion of area's creation.

76. Superintendent's Monthly Report, June 7, 1961, 3. A hygrothermograph was placed in the tunnel for at this time for research purposes, for example, and removed the following year.

77. Superintendent's Report for 1974, 3 and 1983, 4. Information on recent impacts come from conversations with monument staff. Twice during 1974 monument staff had to repair the gate as a result of vandalism. For similar reasons, the tunnel received further impact and rehabilitation in the 1980s and most recently within the last few years.

78. The monument did this even though the act's guidelines exempt the Park Service caves from being nominated for significance, since Craters of the Moon's enabling legislation, for instance, mentions the caves as an important feature of the monument's mission--making them significant without any analysis.

79. RMP, 1991 (draft), 75. Telephone interview with Shelly Sparhawk.

80. Memorandum, entitled, Grazing in Craters of the Moon National Monument, February 16, 1931, RG 79, Central Classified Files, Craters of the Moon National Monument, file 0.35, part 5, National Archives. The sections were 25, 26, 27, and 34, T. 2 N., R. 24 E.

81. Ibid.

82. R. B. Moore to Arno B. Cammerer, November 2, 1929, CCF, CRMO, file 0.35, part 5, NA.

83. Memorandum, Grazing in Craters of the Moon National Monument.

84. Ibid.

85. John Thomas to Thomas C. Stanford, January 31, 1931; Thomas to Stanford, February 20, 1931, Thomas C. Stanford Papers, box 2, file 6, Boise State University. Also see discussion in section on legislation and land issues.

86. There is an abundance of correspondence which relates to this issue in Thomas C. Stanford's papers. However, for a specific reference, see F. W. Mondell to John Thomas, February 12, 1931, CCF, CRMO, file 0.35, part 8, NA. Horace Albright to John Thomas, February 12, 1931, *ibid*.

87. Moore to Albright, February 17, 1931, RG 79, CCF, CRMO, file 0.35, part 8, NA. Arno B. Cammerer to Addison T. Smith, June 10, 1931, Thomas C. Stanford Papers, box 2, file 6, Boise State University.

88. Burton C. Lacombe to the Director, July 6, 1931, RG 79, CCF, CRMO, file 0.35, part 8, NA. This letter summarizes activities up to this point.

89. Burton C. Lacombe to Director, National Park Service, July 6, 1931, RG 79, CCF, CRMO, file 035, part 8, NA. Lacombe pointed out that deer were valuable scenically to visitors and that also sheep trampled vegetation in addition to grazing, ruining sage hen habitat as well.

90. Albright to Thomas, June 12, 1931, Roger W. Toll to Albright, October 15, 1931; Albright to Lacombe, August 12, 1931, RG 79, CCF, CRMO, file 0.35, part 8, NA.

91. Thomas to Albright, June 16, 1931, Stanford Papers, box 2, file 6.

92. Albright to Lacombe, August 12, 1931; Lacombe to Albright, August 28, 1931; Toll to Albright, October 15, 1931; Albright to Lacombe, November 25, 1931, RG 79, CCF, CRMO, file 0.35, part 8, NA. Jo G. Martin to Horace M. Albright, December 31, 1931, RG 79, CCF, CRMO, file 0.35, part 9, NA. By no means did objection to the policy disappear; only the Service had established itself and found a majority backing for its policies. See discussion in sections on legislative history and lands.

93. Superintendent's Monthly Report, September 5, 1952.

94. Superintendent's Monthly Report, October 2, 1963, 3.

95. Interview with Daniel E. Davis, October 30, 1990.

96. Henderson to Barker, June 3, 1960.

97. Roger J. Contor to Bill Mabbutt, May 4, 1965, RG 79, CCF, CRMO, Acc. 76 A1062, FRC# 131598, box 5, file L 30, NA-PNR.

98. Superintendent's Monthly Report, August 2, 1965, 3, and September 8, 1965, 3.

99. Superintendent's Monthly Report, September 8, 1965, 3; October 5, 1965, 3; November 5, 1965, 2. Interview with Roger Contor, September 6, 1990. Having come from a sheep herder family, Contor felt advantaged in dealing with the rancher. Sheep could be controlled, and the repeated violations warranted legal action. Contor monitored Barker's activities by either walking or riding on horseback the northern boundary, and warned Barker not only by ticket but verbally.

100. Superintendent's Monthly Report, January 4, 1966, 4.

101. Interview with Paul Fritz, October 30, 1990.

102. This occurred probable because it was more convenient to truck sheep and cattle around the monument rather than through. It is also possible that Hentges ended this activity.

103. Robert J. Hentges to Superintendent, Craters of the Moon National Monument, April 9, 1990, CCF, file L 3019, CRMO.

104. Superintendent's Annual Report for 1974, 7-8.

105. Memorandum, Robert J. Hentges to Regional Director, Pacific Northwest Region, June 23, 1975, CCF, file L 3019, CRMO.

106. The water supply fencing is covered under a later heading, but Hentges was pointing out the fact that this fencing met the same fate from snow as he predicted for the proposed fencing project mentioned above.

107. Ibid., 4.

108. Hentges did not recall the exact date.

109. Hentges to Superintendent, CRMO, April 9, 1990.

110. Ibid.

111. Memorandum, Regional Director, Pacific Northwest Region to Files, February 2, 1976, CCF, L 3019, CRMO. See also Robert J. Hentges to Regional Director, Pacific Northwest Region, November 13, 1975, CCF, file L 58, CRMO for water quality discussion.

112. Regional Director to Files, 4.

113. Ibid., 4. Dickenson referred to the only archaeological reconnaissance conducted at the monument in 1966. See cultural resources discussion.

114. Ibid., 3.

115. Superintendent's Annual Report, 1974, 8; 1976, 6; 1977, 7.

116. Superintendent's Annual Report for 1978, 10. It should be noted that other documents, such as the 1987 RMP, indicate that the project was undertaken in 1976, while source materials prove otherwise.

117. Hentges believed that the Barkers should carry their weight and build on the state lands to the monument boundary, and refuse to supply materials if this did not happen. Evidently, he capitulated. See, for instance, Memorandum, Robert J. Hentges to Files, June 21, 1976, and for his inquiries to the possibility of state permission, Hentges to Bob Sherwood, Idaho Fish and Game Department, January 11, 1977, CCF, file L 3019, CRMO.

118. Superintendent's Annual Report, 1978, 10.

119. Memorandum, Robert J. Hentges to Richard G. Prasil, Resource Management Division, Pacific Northwest Region, March 24, 1976, RG 79 CCF, CRMO, Acc. 84 0006, FRy. 37277, box 1, file L 3019, NA-PNR. Memorandum, Acting Superintendent, Craters of the Moon to Richard G. Prasil, Resource Management Division, Pacific Northwest Region, August 8, 1977, RG 79, Acc. 84 0006, FRy. 37277, box 1, file L 3019, NA-PNR.

120. Ibid.

121. In his 1979 annual report, Hentges states it was about 160 acres, but most other documents cite 148. See Superintendent's Annual Report, 1979, 7.

122. Ibid. Some BLM land was also fenced inside the monument.

123. Henderson to Prasil, August 8, 1977.

124. The 1987 RMP, 48-51, summarizes this situation well.

125. Robert E. Scott to O'dell A. Frandsen, June 6, 1985, CCF, file 3019, CRMO.

126. Scott to Frandsen, June 6, 1985.

127. Robert E. Scott to Curtis L. Barker, October 1, 1985, CCF, file L 3019, CRMO.

128. Robert E. Scott to Curtis L. Barker, October 1, 1985, CCF, file L 3019, CRMO.

129. Robert E. Scott to O'dell Frandsen, July 8, 1986, CCF, file L 3019, CRMO.

130. O'dell Frandsen to Robert E. Scott, July 22, 1986, CCF, file L 3019, CRMO. Note that the 1987 RMP, 51, cites a BLM document Notice of Area Manager's Decision, item 2, par. 5.

131. Robert E. Scott to Regional Director, Pacific Northwest Region, July 29, 1986, CCF, file L 3019, CRMO, 1-4.

132. Superintendent's Annual Report, 1986, 3. Scott cites several reasons for seeking a change: hunting problems, grazing, and mining.

133. "Boundary Adjustment Proposal," file L 1425, "Boundary Adjustments for Craters of the Moon, Lands Division, Pacific Northwest Regional Office.

134. Memorandum, Harlan F. Hobbs, Chief, Division of Lands, Pacific Northwest Regional Office to Chief, Water Resources Division, National Park Service, February 11, 1988, file L 1425, *ibid.* For more discussion on this issue, see section on legislative history.

135. Superintendent's Annual Report, 1988, 3. Also see, Craters of the Moon National Monument: Boundary Fencing Project: North End Unit, Environmental Assessment, June 1988, Technical Service Center, Denver Service Center.

136. Robert E. Scott to Curtis L. Barker, March 12, 1990, CCF, file L 3019, CRMO.

137. Kim R. Linquist, Assistant U.S. District Attorney to Bruce Edmonston, Chief Ranger, Craters of the Moon National Monument, January 30, 1991, CCF, file L 3016, CRMO.

138. Roger Contor to David Louter, September 26, 1991.

139. A brief list of non-native plants and plant pests can be found in the most recent resource management plan. Among these are tent caterpillars, for which DDT was applied. See Superintendent's Monthly Report, May 1961.

140. Edward L. Joy, Preliminary Observations on the White Pine Rust Control Problem in Craters of the Moon National Monument, Idaho, September 30, 1940, RG 79, CCF, CRMO, file 883, NA-PSR. Joy worked for the Department of Agriculture's Bureau of Entomology and Plant Quarantine, Division of Plant Disease Control, located in Spokane, Washington.

141. John C. Gynn to Aubrey F. Houston, April 5, 1951, RG 79, CCF, CRMO, file 883, NA-PSR; Daniel E. Davis to Assistant Regional Director, Operations, Western Region, March 23, 1964, file Y 22. CRMO Archives. Gynn worked for the same division as Joy noted above.

142. Memorandum, Superintendent Floyd A. Henderson to Regional Director, Region Four, June 15, 1961, file Y 22, CRMO Archives.

143. Ibid. Report of Dwarfmistletoe Control Cost Study--A Supplement to the Report of Dwarfmistletoe Control Survey, November 3, 1961, file Y 22, CRMO Archives.

144. Ibid.

145. For information on the entire program, see text below.

146. Interview with Daniel Davis, September 10, 1990.

147. Daniel E. Davis to Regional Director, Western Region, January 22, 1964, file Y 22, CRMO archives.

148. Davis to Regional Director, February 5, 1964.

149. Keith Neilson to Superintendent, Craters of the Moon National Monument.

150. Ibid.

151. Memorandum, Daniel Davis to Superintendent Robert Hentges, Craters of the Moon National Monument, December 17, 1976, file Y 22, CRMO Archives. Apparently Mahoney's "saw-log" forestry philosophy did not sit well with Davis and neither did his "obnoxious" personality. Mahoney avoided encountering Davis at the regional office and the monument. When he arrived at the monument in the summer of 1964 and he discovered that Davis was actually there, Mahoney left and returned several days later once Davis had left on other business.

152. Davis to Assistant Regional Director, March 23, 1964.

153. Memorandum, William V. Appling to Regional Director, Western Region, June 24, 1964, and June 25, 1965, Appling to Regional Director, CCF, file Y 2619, CRMO.

154. Memorandum, John G. Lewis, Acting Regional Director, Western Region to Superintendent, Craters of the Moon National Monument, October 14, 1965; Memorandum, John M. Mahoney, Regional Forester, Western Region to Superintendent, Craters of the Moon National Monument, file Y 22, CRMO Archives. Memorandum, Roger J. Contor to Regional Director, Western Region, January 17, 1966, RG 79, Acc. 71A1326, FRC# 416899, box 1, file D 18, NA-PSR.

155. Interview with Roger Contor, September 6, 1990. RMP, 1966, 52.

156. Memorandum, Paul Fritz to Regional Director, Western Region, December 12, 1967, CCF, file 2619, CRMO. "The advisability of using the most interesting and frequently used portion of the National Monument for an experimental control program has been strongly questioned by outside interests." Note that Fritz also comments that Mahoney recommended the program be deferred; apparently, he changed his mind.

157. See 1991 RMP. Also included in this program are trees on cinder slopes which have shallow root systems.

158. Memorandum, Jack B. Dodd to Regional Director, Region Four, September 30, 1940, CCF, CRMO, file 207, NA-PSR.

159. Memorandum to files, July 21, 1943, RG 79, CCF, CRMO, file 204, NA-PSR, 1.

160. Memorandum, O. A. Tomlinson to Custodian, Craters of the Moon, September 4, 1945, RG 79, CCF, CRMO, file 207, NA-PSR.

161. Superintendent's Monthly Report, November 6, 1959, 3. See appendix for a copy of agreement. The agreement has been updated annually since 1959.

162. RMP, 1966, 36-38. Quotes are from Memorandum, Superintendent Roger J. Contor to Regional Director, Western Region, January 17, 1966, RG 79, Acc. 71A1326, FRC# 416899, box 1, file D 18, NA PSR. Contor was most likely referring to the "Echo Crater" fire road built for the Coyote Butte fire. See section on developments.

163. Ibid.

164. Memorandum, Regional Director, Pacific Northwest Region to Files, March 1, 1976, CCF, file W 3815, CRMO. This summarizes most of the issue.

165. Superintendent's Annual Report for 1977, 8.

166. Memorandum, Regional Director, Pacific Northwest Region to Files, March 1, 1976, CCF, file L 76, CRMO.

167. Memorandum, Neil H. King to Associate Regional Director, Management and Operations, Pacific Northwest Region, February 24, 1982, CCF, file W 3815, CRMO.

168. Superintendent's Annual Report, 1980, 3.

169. Memorandum, Robert J. Hentges to Regional Director, Pacific Northwest Region, June 22, 1981, CCF, file Y 18, CRMO.

170. 1982 RMP, 24-25.

171. Superintendent's Annual Report, 1986, 3. The main emphasis was on grazing however.

172. Superintendent's Annual Report, 1987, 2.

173. 1991 RMP, draft, 62.

174. For more detailed coverage, see discussion in section on land additions.

175. Ibid.

176. This information comes from personal interviews with Daniel Davis and Roger Contor and monument staff. See also Superintendent's Monthly Report, August 2, 1965, 3.

177. Thomas R. Dunlap, "Wildlife, Science, and the National Parks, 1920-1940," Pacific Historical Review, 59 (May 1990), 187-202, provides a good introduction to changes in Park Service policy. It should also be noted that while the Park Service did not actively eliminate other species, livestock interests systematically killed grizzly bear known to exist in the monument, the last taken in 1923. Also elk, black bear, cougar, and bison were known to live in the region, but today many do not exist or are few in number due to loss of habitat or extermination.

178. The first three custodians reported only wildlife populations and observations in their monthly reports, giving the impression that active management was not practiced, or the threat did not exist to the extent it did as population increased in the region at mid-century.

179. There are essentially three types of illegal hunters: the ignorant hunter who is not aware he is on Park Service land; the potentially honest citizen who cannot resist the temptation to bring back a prize deer from within the monument, and the poacher who operates of business by guiding trophy hunters into the monument, or who wants to win a big buck contest. Either way, the latter pose the greatest threat, since they are hardest to catch and present the most serious threat to the breeding gene pool.

180. Memorandum, Custodian Craters of the Moon National Monument to the Director, October 16, 1945, RG 79, Central Classified Records, Craters of the Moon National Monument, 1934-1953, file 720-047, National Archives-Pacific Sierra Region.

181. Memorandum, Acting Director to Regional Director, Region Four, January 11, 1946; Memorandum, Regional Director to Custodian, Craters of the Moon National Monument, October 29, 1945, *ibid.* As Tomlinson stated: "While it is realized that wildlife is not abundant at the Monument, nevertheless this 47,451 acre area sustains forms of fauna which should be continuously observed and evaluated. Wildlife conditions are never static and there should be much interest and value to report at the end of the yearly period. In the future we should like to have a more comprehensive summary of the year's activity and observations."

182. Custodian's Monthly Report, November 9, 1945.

183. Custodian's Monthly Report, December 9, 1946.

184. *Ibid.*

185. McCarty substituted for around two weeks in September 1946 as Butte County Sheriff. See Custodian's Monthly Report, October 3, 1946.

186. Memorandum, Acting Director to Regional Director, Region Four, March 23, 1951, CCF, CRMO, file 801-03, NA-PSR.

187. Superintendent's Monthly Report, November 8, 1951.

188. Memorandum, Aubrey F. Houston to Regional Director, Region Four, February 19, 1952, CCF, CRMO, file 720-04, NA-PSR.

189. Superintendent's Monthly Report, October 6, 1959, 2.

190. Superintendent's Monthly Report, February 4, 1964, file A 2823, CRMO.

191. Long Range Wildlife and Range Management Plan for Craters of the Moon National Monument, 1965, file N 16, CCF, CRMO, 1-2.

192. *Ibid.*, 3.

193. Wildlife reports cited elsewhere, for example, make note of vegetation conditions in the northern region. Also see Jennifer A. Blakesley, [A Review of Scientific Research at Craters of the Moon National Monument](#), Bulletin 50, Forest, Wildlife and Range Experiment Station, (Moscow: University of Idaho, 1988), 19.

194. *Ibid.*

195. It is unclear as to when the first deer study was initiated; that is, who approached whom and when. Contor remembers starting the research of the herd, and Fritz recalls continuing the program. See respective interviews.

196. Memorandum, Merle E. Stitt, Acting Assistant Regional Director, Operations, Western Region to Superintendent Paul Fritz, September 30, 1968, RG 79, CRMO, Acc. 74A598, FRC# 19941, file N 22, box 7, NA-PNR.
197. Paul Fritz interview, August 8, 1990.
198. Superintendent's Annual Report, 1972, 2.
199. Superintendent's Annual Report for 1974, 2.
200. For the boundary marking program, see Superintendent's Annual Report for 1976, 6 and 11. The markers consisted of rock cairns, about four feet high, set about fifty yards apart, marked with yellow paint.
201. Hentges interview.
202. Hentges interview. Note that all the spikes may not have been removed.
203. This was Robert Ferris. For confirmation of this assessment, see interview with Robert Hentges.
204. Superintendent's Annual Report, 1978, 6-7.
205. As part of his study, he established transects to monitor vegetation conditions over a six-year period, using, however, Ritchie's transects.
206. Memorandum, Robert J. Hentges to Associate Regional Director, Recreation and Professional Services, Pacific Northwest Region, February 29, 1984, CCF, file N 22, CRMO, 2. Reducing the lawns was a more acceptable idea.
207. Beginning in 1992, the monument altered the type of vegetation monitoring; the original transects, put in place during Ritchie's study and modified by Griffith, were considered too difficult to read.
208. BLM is another agency concerned with the deer herd; an unsigned memorandum with this agency and Fish and Game exists, but there is at this writing no evidence that a formal written agreement was ever documented.
209. See appendix.
210. NPS Guidelines, 4.
211. Memorandum, Robert J. Hentges to Regional Director, Pacific Northwest Region, June 25, 1984, file A 44, CCF, CRMO.
212. Interview with Robert Hentges. See also Neil King to Don Wright, District Conservation Officer, Department of Fish and Game, December 17, 1983, Yellows, file W 34, CRMO Archives, and Memorandum, Hentges to Regional Director, June 25, 1984.
213. Superintendent's Annual Report, 1987, 3.
214. The most recent, 1992, resource management plan notes that radionuclide monitoring has been ongoing since the early 1980s, and that restrictions apply to visitor use during hunting season in the form of hiking and biking.

215. Memorandum, Herbert Maier, Acting Regional Director, Region Four to Superintendent Aubrey Houston, Craters of the Moon, August 24, 1951, CRMO, CCF, file 700-01, National Archives--Pacific Sierra Region. The memo referred to a NPS trend in restoration. The superintendent it referred to was Aubrey Houston.

216. For discussion of these objectives see the 1965 Long Range Wildlife and Range Management Plan, and the 1966 Resource Management Plan.

217. Memorandum, Floyd A. Henderson to Regional Director, Region Four, September 1, 1959, Central Classified Files, file N 16, CRMO.

218. Memorandum, Adolph Murie to Regional Chief of Interpretation, Region Four, October 5, 1959, CCF, file N 16, CRMO.

219. Memorandum, Lawrence C. Merriam to Superintendent, Craters of the Moon, October 19, 1959, CCF, file N 16, CRMO.

220. Long Range Wildlife and Range Management Plan for Craters of the Moon National Monument, 1965, folder 4, CRMO Archives, 2.

221. Ibid., 2.

222. This area was later called the Craters of the Moon Wilderness and was designated in 1970. Contor refers to the study area that the Park Service had approved upon his recommendation that year.

223. Memorandum, Roger J. Contor to Regional Director, Western Region, February 11, 1966, CCF, file N 16, CRMO. Quotation, Memorandum, John G. Lewis to Superintendent, Craters of the Moon, August 20, 1965, CCF, file N 16, CRMO.

224. Brent W. Ritchie, "Status of the Craters of the Moon National Monument Deer Herd," M.S. Thesis, University of Idaho, 1968. Memorandum, Paul Fritz to Regional Director, Western Region, April 11, 1969, RG 79, CRMO, Acc. 74 A598, FRy. 19941, file N 16, box 7, NA-PNR.

225. James K. Morgan to Craters of the Moon National Monument, April 3, 1969, RG 79, CRMO, Acc. 74 A598, FRC, 19941, file N 16, box 7, NA-PNR.

226. Memorandum, Brad Griffith to Superintendent, Craters of the Moon, July 25, 1983, CCF, file N 22, CRMO.

227. RMP, 1983, 74.

228. Superintendent's Annual Report, 1990, 2.

229. Horace M. Albright to the Director, July 15, 1927, RG 79 CCF, CRMO, file 0.35, part 3, NA. Albright was acting on the recommendation of Acting Chief Civil Engineer Bert H. Burrell. For documentation of eradication see, for example, Custodian's Monthly Reports of August 1, 1927, 3; September 1, 1927, 3; July 1, 1928; September 1, 1928, 2; September 1, 1933.

230. RMP, 1966, 45.

231. Ibid.

232. See discussion of this topic under section on geology.

233. The 1992 resource management plan calls out water studies as an important feature in resource protection.

234. Custodian's Monthly Report, December 1, 1938, 1, and January 3, 1939, 1. The program was initially planned in 1933 by Custodian Bicknell, but funding delays put it off until this time.

235. An inspection in the early 1950s revealed that the fence had been in a state of disrepair for some time. The exact date of collapse is not known.

236. Custodian's Monthly Report, May 11, 1948, 2.

237. See Zink, and May and December Monthly Reports.

238. Mission 66 Prospectus, vol. 3, 18. See section on lands and legislative history.

239. Memorandum, Hentges to Regional Director, November 18, 1975.

240. Superintendent's Annual Report, 1978, 10; 1980, 5; 1981, 5.

241. Superintendent's Annual Report for 1981, 5.

242. Superintendent's Annual Report for 1986, 7; 1990 Statement for Management, 8, and 1991 RMP.

243. Memorandum, Assistant Solicitor, Parks and Recreation Branch, Division of Conservation and Wildlife to Chief, Water Rights Branch, Water Resources Division, February 26, 1986; Memorandum, Chief, Water Resources Division to Regional Director, Pacific Northwest Region, March 3, 1986, CCF, file L 54, CRMO. Quote from February 26 memo.

244. Ibid.

245. Memorandum, Chief, Water Resources Branch to Shelly Sparhawk, Resource Management Specialist, Craters of the Moon National Monument, CCF, file L 54, CRMO.

246. Memorandum, Chief, Water Resources Division to Regional Director, Pacific Northwest Region, and Superintendent, Craters of the Moon National Monument, January 6, 1992, CCF, file L 54, CRMO.

247. Memorandum, Chief, Water Resources Branch to Sparhawk, June 25, 1991.

248. David Joseph, "Air...A Natural Resource," Trends, 27 (4), 1990, 22.

249. Craters of the Moon National Monument, Statement for Management, 1990, 22.

250. Superintendent's Monthly Report, December 1, 1956.

251. Superintendent's Monthly Report, February 1, 1957.

252. Quoted in Joseph, "Air... A Natural Resource," 23.

253. Memorandum, Acting Superintendent, Craters of the Moon National Monument to Regional Director, Pacific Northwest Region, December 1, 1983, CCF, file N 3615, Yellows, CRMO. See also 1987 RMP, 38.

254. 1982 RMP, 45-47. Also under a cooperative agreement with the BLM, the monument began operation of an AFFIRMS fire weather station.

255. Ibid., 37-38. This is the ridge above the boneyard.

256. Ibid.

257. For general information on INEL, see Carlos Schwantes, In Mountain Shadows: A History of Idaho (Lincoln: University of Nebraska Press, 1991), 218-219. Some of this material comes from an Craters of the Moon internal briefing paper on the air quality issue and the monument's relationship with INEL and the state of Idaho, dated October 1991, author's research files. Hereinafter cited as "Briefing Paper."

258. RMP, 1987, 37.

259. This included a wind speed recorder, automatic telephotometer readings, and an automatic 35 mm photo visibility monitoring station.

260. Memorandum, Ecologist, Research Branch, Air Quality Division, Denver to Chief, Research Branch, Air Quality Division, Denver, September 16, 1985, CCF, file N 3615, CRMO.

261. RMP, 1987, 35.

262. Robert Scott Interview, March 22, 1991.

263. Memorandum, Robert E. Scott to Regional Director, Pacific Northwest Region, August 12, 1987, CCF, file N 36, Yellows, CRMO. This was part of the Washington office's 1988 12 point plan air quality initiative.

264. "Briefing Paper." Craters staff had also been collecting thyroids from roadkill deer.

265. Superintendent's Annual Report, 1987, 3.

266. Superintendent's Annual Report, 1988, 3.

267. "Briefing Paper."

268. Superintendent's Annual Report, 1989, 2.

269. "Briefing Paper."

270. Superintendent Robert Scott to Joe Nagel, Department of Environmental Quality, State of Idaho, July 6, 1989, CCF, file N 30, CRMO.

271. Ibid. See also Memorandum, Robert E. Scott to John Christiano, Chief, Air Quality Division, Denver Service Center, July 6, 1989, CCF, N 36, CRMO.

272. Superintendent's Annual Report, 1990, 3. Joe Nagel to Robert Scott, July 25, 1989, CCF, file N 36, CRMO.

273. Memorandum, Denis P. Galvin, Associate Director, Planning and Development to Rod Harris, Manager, Elko District, BLM, May 3, 1990, CCF, file L 7617, CRMO.

274. Robert E. Scott to Chief, Air Quality Division, Denver Service Center, March 29, 1990,

CCF, file N 3615, CRMO. And Scott report, July 1990.

275. RMP, 1991.

276. This information is derived from a variety of sources. For planning status, see Memorandum, Superintendent Robert E. Scott to Chief, Air Quality Division, July 17, 1990; for state practices, see Nagel to Scott, July 25, 1989, and Memorandum, John P. Christiano, Chief, Air Quality Division, to Superintendent, Craters of the Moon, June 14, 1990; for interagency agreement, see "Briefing Paper."

277. This is not to say that INEL represents the only threat, just the most apparent. As Superintendent Scott recalled, DOE may not be held accountable and its activities in assisting the monument just a public relations ploy--should studies "fingerprint" INEL operations.

278. For coverage of the settlement of mining claims, see sections on legislative history and land issues.

279. See discussion under land issues. Even as late as 1950, new mining claims threatened the monument's resources, if only by accident. On July 29 of that year Elmo Howard accidentally located a mine and cabin within the monument's northern unit in Section 28. Acting Superintendent Robert Zink discovered that the claim actually resided within Craters of the Moon after conducting a northwestern boundary reexamination during the summer of 1952. After notification by Superintendent Aubrey Houston around August 15, Howard agreed to terminate his operations, and by September 20 had begun activity in a canyon adjacent to the boundary. Houston to Regional Director, September 20, 1952. The regional director was concerned about the removal of the cabin and the restoration of the mining site within the monument, and impressed this upon Houston. The Service because of what appeared to be an honest mistake with the northern boundary agreed to let Howard have several years to comply. It is not known what date Howard completed his removal and restoration. It is clear from Houston's memo that he did cancel his operation, however. See Memorandum, Acting Regional Director, Herbert Maier to Superintendent, Craters of the Moon, September 30, 1952, RG 79, CCF, CRMO, 1930-1953, file 609-01, NA-PSR.

280. See sections on land issues.

281. Superintendent's Annual Report for 1981, 2. See also, Robert J. Hentges to National Park Service EMM, October 16, 1984, CCF, file A 76, CRMO. One building had been removed by the owner in the 1960s.

282. RMP, 1991.

283. Superintendent's Annual Report for 1986, 2.

284. Ibid.

285. Personal communication with monument staff.

286. A recent abandoned mineral lands inventory in the north end photographed and catalogued mostly shallow prospecting holes.

287. Statement for Management, 1990, 22.

288. Memorandum, Roger J. Contor to Regional Director, Western Region, March 30, 1966, RG 79, CCF, CRMO, Acc. 74A207, FRC.# 13183, box 6, file L 3031, NA-PNR.

289. Memorandum, Roger J. Contor to Region Director, Wester Region, April 14, 1966, file L 3031, NA-PSR.

290. Memorandum, Roger J. Contor to Regional Director, Western Region, May 18, 1966, file L 3031. Evidently, the REA had more heavy-handed ideas. They attempted to secure a permit along the monument's highway as a leverage tool to secure their proposed route across the northern section. The idea of cluttering the view with overhead lines along the highway was thought a good method of securing their original route. However, the state denied their request. It is not known at this time when, and if, the line was built. It would have only clipped a corner of the monument, leaving the Martin townsite, up Lava Creek and down Big Cottonwood. See Superintendent's Monthly Report, June 7, 1966.

291. Interview with Roger J. Contor, September 6, 1990.

292. Superintendent's Annual Report for 1982, 1. See also Robert Hentges interview.

293. Memorandum, Robert E. Scott to Regional Director, Pacific Northwest Region, September 29, 1987. Scott was most writing in regard to Public Law 100-91, for the study of overflight noise in some units of the NPS system, which passed on August 18, 1987.

294. Draft RMP, 1991, 75.

295. For a general overview, see Stephanie S. Toothman, "Cultural Resource Management in Natural Areas of the National Park System, The Public Historian, 9 (Spring 1987), 65-76.

296. Robert W. Limbert, "Among the 'Craters of the Moon,'" National Geographic, 45 (March 1924), 303-328, for example, 328; Harold T. Stearns, "A Guide to the Craters of the Moon National Monument," Bulletin of the Idaho Bureau of Mines and Geology, 13 (July 1928), 41. Custodian's Monthly Reports for July 1929 and 1935. A cave is called Moonshine after discovery of the still.

297. Charles W. Porter, Branch of Historic Sites Comment, August 23, 1939, RG 79, CCF, CRMO, 1930-1953, file 600, NA-PSR.

298. Memorandum, Olaf T. Hagen to the Regional Director, July 12, 1940, RG 79, CCF, CRMO, 1930-1953, file 101, NA-PSR.

299. Memorandum, Aubrey Neasham to Assistant Regional Director, Region Four, May 1, 1952, CCF, CRMO, 1930-1953, box 267, file 101.01, NA-PSR. Barry Mackintosh, Assateague Island National Seashore: An Administrative History (Washington, D.C.: National Park Service, 1982), vii.

300. Robert C. Zink to Aubrey F. Houston, August 25, 1956, file H 18, CRMO Archives.

301. Robert C. Zink, "Short History: Craters of the Moon National Monument," 1956, file H 14, Craters of the Moon National Monument Archives.

302. Mission 66 Prospectus, Craters of the Moon National Monument, April 1956. Monument officials were aware of Limbert's importance to the monument in the late 1930s when it was suggested that Sunset Cone be renamed in his honor. See Acting Director Hillory A. Tolson to Custodian, Craters of the Moon National Monument, August 12, 1938, RG 79, CCF, CRMO, box 269, file 731-01, NA-PSR.

303. Earl H. Swanson to Dr. Paul J. F. Schumacher, April 21, 1960; Memorandum, Paul J. F. Schumacher to Superintendent, Craters of the Moon, July 3, 1963; Memorandum,

Superintendent Daniel E. Davis to Regional Director, Western Region, May 22, 1964, file H 22, CRMO Archives. Schumacher described Butler as an person with a volatile personality, questionable professional ethics, and something of a rogue. Schumacher cited several cases where Butler had worked with the Park Service, Mesa Verde and the Dalles, as evidence for his opinion. Davis formed his opinion of Butler after meeting with him and after receiving information from a colleague at Mesa Verde that Butler was "a dirty beatnik."

304. Earl H. Swanson to Superintendent Roger J. Contor, February 1, 1966, file H 22, CRMO Archives. Superintendent's Monthly Report, May 5, 1966, 2.

305. Resource Management Plan for Craters of the Moon National Monument, 1966, 48-49, lists necessary research.

306. Paul G. Sneed, "An Archaeological Reconnaissance of the Craters of the Moon National Monument," TEBIWA, 10 (1), 1967, 37-52.

307. The 1966 master plan, for instance, noted the presence of archaeological sites, and that Goodale's Cutoff was the only site of historic significance. There were also a number of agency initiatives that seem to have been overlooked or ignored due to funding and lack of perceived need. During the late 1960s and early 1970s, Superintendent Paul Fritz responded to regional proposals about resource studies in archaeology, history, and architecture as "desirable," but not "pressing." Some of these studies included historical base maps and historical surveys. See, for example, Memorandum, Superintendent, Craters of the Moon National Monument to Director, October 19, 1966; Memorandum, Regional Director, Region Four to Superintendent, Craters of the Moon National Monument, March 26, 1969, file H 22, CRMO Archives. An Ethno-historical Study and Historical Base Map Basic Data Study was proposed for 1970, but was never funded.

308. For more discussion on monument buildings see sections on development. The only buildings left from the original period of the monument's establishment are an old warehouse and the log comfort station.

309. National Register of Historic Places, 1966-1988, 149.

310. Memorandum, Robert J. Hentges to Regional Director, Pacific Northwest Region, October 31, 1978, CCF, file H 30, CRMO. Memorandum, Acting Regional Director, Professional Support, Charles F. Bohannon to Superintendent, Craters of the Moon National Monument, August 2, 1973; Memorandum, Associate Regional Director, Planning and Resource Preservation, Glenn D. Gallison to Superintendent, Craters of the Moon National Monument, June 2, 1977, file H 22, CRMO Archives.

311. Toothman, 67.

312. Superintendent's Annual Report for 1983, 1-2.

313. Lawrence originally gave the whole collection to the monument, which was not capable of handling the materials, nor interested in those that did not pertain to Craters of the Moon. After dividing the collection, Clark convinced Lawrence to donate the rest to BSU. The monument was incapable of managing such an important collection for a variety of reasons--staff, space, facilities. Currently, the monument's part of the collection is on a five-year, renewable loan agreement. Personal interview with David Clark, September 24, 1991. The following memoranda cover some of the Limbert collection's development: Robert J. Hentges to Regional Historian, Pacific Northwest Region, August 4, 1983; David Clark to Margaret Lawrence, November 14, 1983; Clark to Lawrence, May 10, 1984; Robert J. Hentges to Arthur Hart, August 2, 1984, CCF, file F 5415, Yellows, CRMO. See also Superintendent

Annual Reports for the appropriate years.

314. Superintendent's Annual Report for 1980, 1981, 1982, 1983. RMP, 1987, 125-126.

315. See Superintendent's Annual Report for 1987 and 1988.

316. See the 1992 resource management plan under its discussion of cultural resource projects. As for the log buildings, see Memorandum, Superintendent Robert E. Scott to Regional Director, Pacific Northwest Region, March 12, 1991, CCF, file A 54, CRMO. Scott filled out a report of surveys on the structures thinking that with new developments proposed by the general development plan that they would no longer be needed. Yet since the buildings have not been evaluated, this action was blocked.

CHAPTER 7

1. Ronald Foresta, America's National Parks and Their Keepers (Washington, D.C.: Resources for the Future, Inc., 1984), 29. Lane quoted, 27.

2. Custodian's Monthly Report, January 6, 1942.

3. W.R. Leisy to the Director, August 5, 1941, RG 79, CCF, CRMO, 1930-53, file 901, NA-PSR.

4. Memorandum, Acting Regional Director to Custodian McCarty, August 23, 1941, RG 79, CCF, CRMO, 1930-1953, file 901, NA-PSR.

5. Memorandum, Custodian to the Regional Director, June 4, 1942, RG 79, CCF, CRMO, 1930-1953, file 901, NA-PSR.

6. Memorandum, OA. Tomlinson, Regional Director, to Custodian McCarty, June 11, 1942, RG 79, CCF, CRMO, 1930-1953, file 901, NA-PSR.

7. Memorandum, Paul Fritz to Regional Director, Pacific Northwest Region, December 11, 1973, CCF, K 34, CRMO.

8. Statement for Management, Craters of the Moon National Monument, 1988, 9.

9. Robert E. Scott to Chuck Wells, March 13, 1986, CCF, file A 38, CRMO.

10. Statement for Management, Craters of the Moon National Monument, 1990, 9.

11. These figures represent an approximation of the land acreage totals presented in the draft general management plan, November 1991, 19. I exclude from the "natural zone" the "outstanding natural features subzone" of 779 acres because its features are adjacent to the loop drive, the area of concentrated recreation.

12. Memorandum, Roger J. Contor to Monument Staff, Craters of the Moon, July 22, 1965, RG 79, CCF, CRMO, Acc. 76 A1102, FRC# 131597, box 4, file L 48, NA-PNR.

13. Ibid.

14. Resource Management Plan for Craters of the Moon National Monument, 1966, 43-45, 53.

15. See, for example, Assessment of the Environmental Impact of Construction of a Wilderness Trail Spur, Craters of the Moon National Monument, August 1974, CCF, file L 76, CRMO. Hentges maintained that the trail was important to avoid visitors walking back along the road to reach the Broken Top or Buffalo Caves access; to avoid social trails from the parking lot across the proposed route, solving safety issues as well in the rough terrain, and making the wilderness access more readily apparent.

16. There were 122 recorded visitors in the wilderness in 1975. See section covering fire policy. Backcountry Management Plan, Craters of the Moon National Monument, January 1, 1976, 1-11.

17. Ibid., 11.

18. The backcountry management plan was revised again in 1984.

19. Craters of the Moon National Monument, Backcountry/Wilderness Management Plan, October 1989, CCF, file N 1623, CRMO.

20. Ibid.

21. Ibid.

22. See Houston's 1950 memo to the regional director.

23. Mission 66 Prospectus, Craters of the Moon National Monument, 27. Yet it was also pointed out that weather just as much as cultural or technological changes influenced visitor-use patterns. Interest in winter skiing at the monument, for example, had waned as a result of poor snow conditions over the past fifteen to twenty years. This might also provide a reason for lack of continued interest in building a resort in the monument.

24. Master Plan for Preservation and Use, Craters of the Moon National Monument, 1966, 8. Although the extension of the loop drive did not occur because of the redrawn wilderness boundaries, and the campground was never moved, for example, the theme was one of developing recreational opportunities as they were anticipated.

25. See discussion on wilderness and backcountry management.

26. 1966 master plan, 8.

27. Resource Management Plan, Craters of the Moon National Monument, 1987, 82-83. See, for example, discussion in sections on expansion. Increases in regional recreation influenced the master plan study of the early 1970s, and was also addressed in the recent expansion and general management plan studies.

28. See section on developments.

CHAPTER 8

1. Barry Mackintosh, Interpretation in the National Park Service (Washington, D.C.: National Park Service), 75.

2. Cited in Mackintosh, 6.

3. Mackintosh, 22-38.

4. 1925 Annual Report, 4.

5. Bert H. Burrell to the Director, July 21, 1927, CCF, CRMO, file 0.35, part 3, NA, 2.

6. See discussion in section on administrative development.

7. Roger W. Toll to the Director, October 15, 1931, RG 79, CCF, CRMO, file 0.35, part 9, NA, 2.

8. Albert T. Bicknell to Everett W. Bright, October 9, 1956, file H 18, CRMO Archives. It is unknown at this time where Shepherd's material is. He was conducting the trip after his season was over at the monument. As Bicknell recalled, in the above citation, "I objected to him making the trip across the lava to Minidoka alone but he did get permission from the Washington Office. Of course, he made the trip at his own risk....He had to leave some of the pack he started with. Ran out of food, and came very close to not making it. He was a pretty scared and tired boy by the last day. Said that he was glad he did make the trip but nothing could induce him to do it again..."

9. See Ansel F. Hall, Chief, Field Division of Education to Custodian, A.T. Bicknell, August 9, 1935, CCF, CRMO, 1933-1953, file 620-46, NA-PSR. While Hall does not specifically mention the "new" emphasis Mackintosh does, and this letter documents the request for a prospectus from Craters of the Moon.

10. Craters of the Moon National Monument Proposed Museum and Educational Program, CCF, CRMO, 1933-1953, file 620-46, NA-PSR, 1.

11. Proposed Museum and Educational Program, 2.

12. Proposed Museum and Educational Program, 3-6. Mackintosh, 46, discusses the museum design of the period.

13. Ibid., 5.

14. Memorandum, July 21, 1943, CCF, CRMO, file 204, NA-PSR.

15. Memorandum, Assistant Director Hillory A. Tolson to the Regional Director, Region Four, October 28, 1948, CCF, CRMO, file 620-46, NA-PSR.

16. Memorandum, Aubrey F. Houston to Regional Director, Region Four, November 16, 1949; Memorandum, Houston to Regional Director, July 31, 1950, CCF, CRMO, file 620-46, NA-PSR.

17. In 1951 the Research and Interpretation Division changed to the Interpretation in 1954; Ronald F. Lee was chief and there was a regional interpreter at each of the regional offices to run the programs in the parks.

18. Memorandum, Aubrey F. Houston to Regional Director, Region Four, January 31, 1952, CCF, CRMO, file 830, NA-PSR.

19. Ibid. See also Houston to Regional Director, February 23, 1952.

20. The outline is attached to Memorandum, Houston to Regional Director, January 31, 1952. The following information and quotes unless otherwise noted are drawn from this document.

21. Visitation in 1941 numbered around 21,000; in 1942 around 6,000, and in 1952 around 84,000. By 1955, visitation increased to around 100,000.

22. See, for example, the Mission 66 Edition Master Plan.

23. Robert C. Zink to Aubrey F. Houston, August 25, 1956, file H 22, CRMO Archives.

24. Superintendent's Monthly Report, August 10, 1959, 2; November 6, 1959, 2. By this time there was one seasonal naturalist available, and by the late 1960s this had climbed to three.

25. Memorandum, Chief Park Naturalist to Superintendent, Craters of the Moon, February 3, 1964, file A, folder 2, CRMO Archives.

26. Interpretive Prospectus for Craters of the Moon National Monument, 1965, file K, CRMO Archives, 1. All reference to the prospectus is drawn from this document in the subsequent discussion, unless otherwise noted.

27. "Preliminary Outline of Craters of the Moon Interpretive Prospectus, RG 79, Acc. 74 A207, FRC# 13182, file D 6215, box 5, National Archives--Pacific Northwest Region.

28. Ibid.

29. Management Appraisal Report, Craters of the Moon National Monument, May 1968, RG 79, Acc. 74 A207, FRC# 13180, file A 5427, box 3, NA-PNR.

30. Memorandum, Paul Fritz to Regional Director, Western Region, August 23, 1968, *ibid.*, 2. This was part of the FOST system, which saw interpretation as a duty which could be performed by technical rather than professional staff. The irony at the monument was that the divisions still functioned separately after they were merged. A former chief naturalist, Robert Reynolds, remembered being instructed by the chief ranger, Robert Ferris, that he wanted nothing to do with interpretation, and Reynolds operated independently. Telephone interview with Reynolds, October 11, 1991.

31. The Superintendent's Annual Report for 1978 shows this change. For further discussion of Hentges' intention see personal interview, September 17, 1990, and for Park Service trends, see Barry Mackintosh, 98.

32. Interpretive Prospectus, Craters of the Moon National Monument, 1979.

33. From 1976 to 1978, for example, the position was filled with a trainee.

34. Interview with David Clark, September 24, 1991.

35. *Ibid.* Some research occurred during the late 1960s and early 1970s. But in the late 1970s and early 1980s, a substantial amount, unraveling some of the Great Rift's mysteries at the monument was conducted. This was initiated in 1977 by USGS geologist Mel Kuntz. Prior to this most information about the monument was derived from research on Hawaii. While some applied to the monument, not all information pertained to the monument. In addition, a significant amount of research has surfaced recently on the Snake River Plain and Yellowstone National Park, some of it precipitated by investigations at the Idaho National Engineering Laboratory.

36. Annual Statement for Interpretation and Visitor Services, Craters of the Moon National Monument, 21.

37. Annual Statement for Interpretation, Craters of the Moon National Monument, 1991.

38. Clark interview. Some of these goals are also discussed in planning documents such as the new general management plan.

39. Ibid. 1926 report for quote.

40. Superintendent's Monthly Report, August 4, 1961, 3; June 6, 1963; October 5, 1966; and 1964 Prospectus, 39-40. For Contor this was a stop gap measure since he favored self guidance.

41. Preliminary Outline of Craters of the Moon Interpretive Prospectus, 2.

42. Memorandum, Dennis L. Carter to Superintendent, September 8, 1967, file A, folder 2, CRMO Archives.

43. Memorandum, Superintendent Paul Fritz to the Director, January 27, 1971, file K 26, CCF, CRMO.

44. Memorandum, Superintendent Paul Fritz to the Director, January 29, 1972, *ibid*.

45. Interview with Clark. The 1974 annual report notes Sunday walks conducted up Inferno Cone. See also the 1981 SF1, Pt. 1.5.

46. Personal interview with David Clark.

47. Superintendent's Monthly Report, August 10, 1959, 3. See Mission 66 Edition master plan for mention of auto caravan as important part of program. 1964 Interpretive Prospectus, 39-40 discusses the lack of activity in the guided walks program, but earlier reports describe this as both a case of lack of seasonal naturalists and interest by visitors. See Superintendent's Monthly Report, August 4, 1961, 3.

48. Superintendent's Monthly Report, October 5, 1965, 2; July 7, 1966, 3.

49. Mackintosh, 32, discusses the folklore and history question behind the campfire program, and its occasional controversy.

50. Custodian's Monthly Report, July 1935, 2, and September 2, 1935, 2.

51. In addition, the sense is that with the introduction of collecting an entrance fee there were not enough man hours left to conduct the program at night, or perhaps that the end of the New Deal appropriations affected the monument in terms of staffing. See Zink study, chapter entitled "Trail Development and Natural History," 64.

52. Craters of the Moon Master Plan Development Outline, CCF, CRMO, 1933-1953, file 830, NA-PSR. See also Superintendent's Monthly Report, July 6, 1951 and June 5, 1953 for examples of interpretative activity during Houston's tenure.

53. Superintendent's Monthly Report, July 7, 1960, 3, includes photo; see also 1964 Prospectus, 39.

54. See, for example, 1981 SF1, Pt. II.1.

55. David Clark interview.

56. Memorandum, Chief Park Naturalist to Superintendent, Craters of the Moon, June 3,

1963, file A, folder 2, CRMO Archives. The screen periodically blew down in high afternoon winds, and the electrical wiring was rigged from the comfort station fuse box.

57. Memorandum, Paul Fritz to the Director, February 6, 1973, file K 26, CCF, CRMO, 2.

58. Superintendent's Annual Report for 1973, 2; 1974, 2; 1975, 4.

59. David Clark interview.

60. Superintendent's Annual Report for 1976, 6; 1977, 5; 1981, 3. See also David Clark interview.

61. Superintendent's Monthly Report, May 7, 1959, 3.

62. Interview with Paul Fritz. See also following memoranda, Fritz to Director, January 27, 1971; January 29, 1972; February 26, 1973. There were six to twelve a season.

63. Interview with Robert Reynolds, October 11, 1991. See also, Superintendent's Annual Report for 1975, 4.

64. That is to say, environmental education in the schools was replaced by the school program through the teaching the teachers concept.

65. Superintendent's Annual Report for 1973, 6.

66. Superintendent's Annual Report for 1976, 3.

67. Superintendent's Annual Report for 1976, 2.

68. Superintendent's Annual Report for 1977, 4.

69. Superintendent's Annual Report for 1978, 3. The 1979 annual report is missing, and the 1980 report does not mention the site at all.

70. Superintendent Paul Fritz to Louise Shadduck, April 3, 1971, file K 34, CRMO Archives. Fritz noted that travel statistics showed an increase after ending Opening Day, but he did, it seems, emphasize that the monument would observe its establishment day.

71. 1991, SF1.

72. Evening strolls are mentioned as an experimental and popular activity in the Superintendent's Annual Report for 1975, 4. But there is no mention of what occurred later.

73. Memorandum, February 6, 1973, 2.

74. See for example, Superintendent's Annual Report for 1981, 2. Clark interview.

75. Telephone interview with David Clark, March 30, 1992.

76. Information on the museum planning is thin. The 1964 museum prospectus discusses some of the planning process and museum development, as do the Mission 66 master plan and the 1956 prospectus.

77. Superintendent's Monthly Report, June 11, 1959, 3.

78. See, for example, Superintendent's Monthly Report, July 7, 1960, 4.

79. Preliminary Outline of Craters of the Moon Interpretive Prospectus.

80. 1979 Prospectus, 8.

81. Interview with David Clark.

82. Superintendent's Annual Report for 1987, 4.

83. Custodian's Annual Report for 1926, 4.

84. Mission 66 Master Plan Edition, Craters of the Moon National Monument, volume I, chapter 2, 4.

85. Superintendent's Monthly Report, January 3, 1964. Some sites have been changed or modified. Interpretation of the North Crater Flow replaced the Devil's Sewer; there used to be two Inferno Cone pullouts or viewpoints, and since approximately the mid-1970s, the crest of Inferno Cone has functioned as a scenic viewpoint of the lava landscape within and around the monument.

86. Zink, "Trails Development and Natural History," 65.

87. Mission 66 master plan, "Visitor Use Brief," 6.

88. Ibid., volume I, chapter 2, 2-8.

89. Memorandum, David C. Ochsner to Superintendent, February 8, 1961, RG 79, Acc. 76 A1062, FRC# 131596, box 3 file D 66, NA-PNR.

90. Superintendent's Monthly Report, June 5, 1961; August 4, 1961. See also Memorandum, Edgar Menning to Superintendent, Craters of the Moon National Monument, July 2, 1963, file A, folder 2, CRMO Archives.

91. Preliminary Outline of Craters of the Moon Interpretive Prospectus, January 28, 1968, 4.

92. Calling the Devil's Sewer a lava tube might be misleading. The site is something of a mystery since it no longer exists, making it difficult to identify. Some photos exist yet do not seem to correspond with any physical evidence. The feature might be better labeled a fold or roll of pahoehoe. Whatever the case, it was significant enough to have the whole area called the "Devil's Sewer."

93. 1964 Prospectus, 16; see also, Memorandum, Menning to Superintendent, January 3, 1964.

94. Ibid. Plans for the signs appear in the 1964 Prospectus and in the Sign and Wayside Exhibit Plan, January 25, 1965; the latter indicates that most signs were installed around this time. For the date of the trail design, see, Superintendent's Monthly Report, September 8, 1965, 2.

95. Clark interview. See also current the 1991 statement for interpretation.

96. Sign Master Plan for Craters of the Moon National Monument, 1957, map drawer 10, CRMO.

97. Sign and Wayside Exhibit Plan for Craters of the Moon National Monument, 1965, map drawer 3, CRMO. Clark interview.

98. The location and content of the waysides presented a point of contention between the regional office and the monument staff. The monument favored the location on the highway while the regional specialists favored a site within the park, atop Big Craters. The intent with this suggestion was apparently to comply with a Park Service initiative to interpret air quality from within a park and using park resources. The monument staff argued that the monument was not large enough to adequately demonstrate the visibility problems associated with air pollution, while the landmark of Big Southern Butte provided the best feature to exemplify this issue. See Memorandum, Superintendent, Craters of the Moon National Monument to Chief, Interpretation and Visitor Services, Pacific Northwest Region, February 17, 1987; Memorandum, Deputy Regional Director, Pacific Northwest Region to Superintendent, Craters of the Moon National Monument, March 19, 1987, CCF, file D 6215, Yellows, CRMO. Clark interview.

99. Memorandum, Fritz to Director, January 29, 1972.

100. Memorandum, Fritz to Director, February 6, 1973, 2. See also discussion under resource management.

101. The 1981 SF1 map of facilities only notes the station at Devil's Orchard.

102. For more information see section on concessions. Essentially, like all natural history associations, the business at the monument serves an important role in supplying the interpretive program with funding it would otherwise not receive or would receive too late through bureaucratic channels.

103. Clark interview.

CHAPTER 9

1. Ronald A. Foresta, America's National Parks and Their Keepers (Washington, D.C.: Resources for the Future, 1984), 29-30. Alfred Runte, National Parks: The American Experience (Lincoln: University of Nebraska Press, 1979), 170-173. In 1917, national parks saw around 487,000 visitors and in 1983 around 240 million. See National Parks for a New Generation (Washington, D.C.: The Conservation Foundation, 1985), 69.

2. Foresta, 52-54. Harlan Unrau and G. Frank Williss, Administrative History: Expansion of the National Park Service in the 1930s (Washington, D.C.: NPS, DOI, 1983).

3. Burrell to Mather, July 21, 1927, RG 79, CCF, CRMO, file 0.35, part 3, NA.

4. Ibid.

5. See discussion in section on the monument's administrative evolution. Specifically, Memorandum, Superintendent Aubrey F. Houston to Regional Director, Region Four, January 27, 1950, RG 79, CCF, CRMO, file 306-06, NA-PSR.

6. Figures on the program's costs are gleaned from completion reports and estimates in the 1956 prospectus. For further information, see the Mission 66 Master Plan.

7. Master Plan for Preservation and Use, Craters of the Moon National Monument, 1966.

8. Craters of the Moon Preliminary Master Plan, 1973, file D, CRMO Archives. Fritz envisioned that a proposed recreation area-resort at the Blizzard Mountain junction, three

miles northeast of the monument, would provide camping and overnight facilities for monument visitors, and envisioned that the monument's administrative offices would be transferred to Arco, leaving the headquarters complex intact but without any additions.

9. Memorandum, Superintendent Roger J. Contor to Regional Director, Western Region, February 24, 1965, RG 79, CCF, Acc. 70 A1355, FRC# 34935, box 3, file D 24, NA-PSR.

10. Draft General Management Plan, Craters of the Moon National Monument, 1991, 18.

11. Information for the building of the loop road is not complete. See Robert Zink's chapter, "Loop Drive and Approach Road Developments," 34-44. Also see, completion report maps for Public Works Project F.P 245.

12. Zink, "Loop Drive and Approach Roads Development," 35. It is still somewhat unclear as to where the exact location of the entrance roads were. Apparently, people from both Arco and Hailey worked to shorten and ease the route to the monument.

13. Arno B. Cammerer to Addison T. Smith, April 13, 1925, RG 79, CCF, CRMO, file 0.35, part 2, NA. Cammerer states that it was only a two year program offered, but other sources refer to it as a five year program. See Bert Burrell's 1927 report.

14. Custodian's Annual Report for 1926, 4. Whether Paisley laid out the final leg to the loop drive is uncertain, yet most accounts say it occurred in the 1920s.

15. Bert H. Burrell to Director, National Park Service, July 21, 1927, RG 79, CCF, CRMO, file 035, part 3, NA, 3; Custodian's Monthly Report, October 1, 1927, 2. The Hailey entrance was apparently never fully abolished, and it seems that the reason the other entrance needed to be closed was due to the fact that it was located south of the new headquarters site. It was necessary to relocate here so that tourists could receive water from the concession, since the only reason visitors came to the first headquarters site was because of its waterhole.

16. Custodian's Monthly Report, October 1, 1927, 2; June 1, 1928. Custodian's Monthly Report, September 1932.

17. Report on Road Widening--Sections--I Idaho Highway--2A Entrance to Devil's Orchard Junction and 2B Devil's Orchard Loop, July 24, 1935, RG 79, CCF, CRMO, 1930-1953, NA-PSR.

18. It seems that the eastern entrance was located on the eastern side of Sunset Ridge--originally. The 1930s master plans called the new entrance constructed by Moore the "eastern" entrance since drivers from the east entered here.

19. Ibid. Besides adding to the quality of the visitor's experience, these improvements represented an important achievement because they meant less time that the custodian would have to expend on guiding the traveling public through the monument, since it was more self-guiding, and meant that he had more time to concentrate on other management issues.

20. After inspecting one such road proposal from Kimama in the summer of 1926, state and federal highway engineers were apparently so unimpressed with the idea that they never drafted a report. Custodian's Monthly Report, July 8, 1926.

21. Bureau of Public Roads, Preliminary Investigation Report on Craters of the Moon National Monument: Echo Crater Road, 1935, RG 79, CCF, CRMO, file 600, NA-PSR, 1-3. The system was made up of five sections.

22. Robert B. Moore to Arno B. Cammerer, May 16, 1928, RG 79, CCF, CRMO, file 0.35, part 4, NA. Robert B. Moore to Arno B. Cammerer, July 23, 1929, *ibid.*, part 5.
23. Memorandum, Kenneth C. McCarter to Thomas C. Vint, February 16, 1933, RG 79, CCF, CRMO, file 600, NA-PSR.
24. Preliminary Investigation Report to Deputy Chief Architect on Construction Program and Reconnaissances of Inferno Cone [sic] to Echo Crater Road Locations--Craters of the Moon National Monument, January 6, 1936, RG 79, CCF, CRMO, file 600, NA-PSR.
25. Demaray to Bishop, letter in Preliminary Investigation Report, January 6, 1936.
26. J. Volney Lewis, Road Location at Craters of the Moon National Monument, August 11, 1936, RG 79, CCF, CRMO 1934-1953, file 630, NA-PSR. For a more extensive report see, J. Volney Lewis, Proposed Road Extensions at Craters of the Moon National Monument, Idaho," September 21, 1936, *ibid.* Note in this latter study Lewis expanded on his observations and also on the location of the road south of Broken Top.
27. Robert Zink, writing in the mid-1950s, notes that it was in fact a road, and it stopped except for monument use at Broken Top. See, "Short History," 37.
28. See, for example, Assistant Regional Director B.F. Manbey's report, Comments and Notes...Special Inspectional Trip to Craters of the Moon National Monument, June 12, 1940.
29. Custodian's Monthly Report, July 3, 1940, 2.
30. The trail continued from where the Broken Top road ended. Manbey, Comments and Notes, 2.
31. Memorandum, Regional Director O.A. Tomlinson to Staff, July 21, 1943, RG 79, CCF, CRMO, file 600, NA PSR, 2.
32. Memorandum, O.A. Tomlinson to the Director, August 21, 1944, RG 79, CCF, CRMO, file 304, NA-PSR. Tomlinson cited his earlier July 21, 1943 report as reason for eliminating the construction proposal.
33. Tomlinson, July 21, 1943, 2.
34. Memorandum, Custodian Guy E. McCarty to Regional Director, Region Four, August 29, 1942, RG 79, CCF, CRMO, box 269, file 630, NA-PSR. See also section on legislative history and lands.
35. Some discussion existed as to which would be more administratively advantageous, a connection inside or outside the boundaries, and no existing reference describes what happened. Yet it is assumed from the existence of old road sections in the northern unit that realignment occurred in the monument. See above reference for material on this issue.
36. Road System Master Plan for Craters of the Moon, (Map), RG 79, CCF, CRMO, file 600-01, NA-PSR.
37. Superintendent's Monthly Report, September 1, 1955.
38. Mission 66 prospectus, 22, 4. Superintendent's Monthly Report, September 13, 1949.
39. Completion Report, Construction and Improvement of Roads, Craters of the Moon National Monument, [title is my own] RG 79, Acc. 73A1296, FRC# 28077, box 2, NA-PNR.

One note of interest is that monument managers fought to have the length of road between the spatter cones and the spur to Broken Top paved; regional planners at first wanted to removed the road section and fill it in, leaving a huge scar in the process. Monument officials were able to convince the planners that visitors would object to the "Y" design in the road and solved the problem.

40. The project included asphalt gutters, culverts, and grates.

41. Henderson stated that the cinders were of poor quality for road construction due to their "excessive compaction rate, high oil absorption, and the extensive expansion and contraction during temperature changes..." He recommended that the cinders not be used in any further construction in the area. Furthermore some road sections never received adequate surfacing due to funding cutbacks; these were the spur roads to Broken Top and Devil's Orchard. See completion report. See completion report and Superintendent's Monthly Report, June 11, 1959.

42. Memorandum, P.E. Smith to Superintendent, Craters of the Moon National Monument, May 4, 1965; James A. Burton to Superintendent Roger J. Contor, June 7, 1965; Memorandum, Donald L. Bressler to Region Director, Western Region, March 3, 1966, RG 79, Acc. 71 A1326, FRC# 416907, box 9, file D 30, NA-PSR. Information for the repavement is in the above citation, supplemented by a personal interview with Paul Fritz, August 30, 1990. The road revision eliminated the former parking lot and replaced it with a new one at the present location. A date of 1968 is an unconfirmed date for this construction.

43. Superintendent's Annual Report for 1974, 1.

44. Road System Evaluation Study, Denver Service Center, draft, January 1991. Note that the study proffers theories for the physical condition of the road and reiterates the theories expressed by Henderson in the late 1950s and early 1960s--that the cinder material was inferior, "crushing under the weight of traffic," and then the "expansion and contraction of the pavement caused by extreme temperature variations cause lateral cracks to form every 50 to 100 feet." (14)

45. The new general management plan brings some old issues to light, such as the fact that curbing might pin in cyclists but it also keeps drivers on the road and off the cinders. It should also be noted that there are other activities in road maintenance. Aside from general maintenance practices, snow removal constituted a costly form of maintenance during the winter months when the loop road was cleared to the Devil's Orchard junction. With the advent of the energy crisis in the early 1970s, however, the Park Service ended this practice. In December 1973, Superintendent Fritz announced that no portion of the loop drive would be kept open, and only the visitor center parking area would be free of snow.

46. Custodian's Monthly Report, June 1 and July 1, 1928. Moore erected four foot monuments from Big Sink Waterhole to Great Owl Cavern over a distance of a mile; brushed the trail and erected signs.

47. Roger W. Toll to the Director, October 15, 1931, RG 79, CCF, CRMO, file 0.35, part 9, NA.

48. Albert T. Bicknell, Report on Trail Construction, circa 1934, file D 30, CRMO Archives. Quote from Custodian's Monthly Report, September 2, 1934, 4.

49. The trail was apparently the same as that from the spatter cones to Great Owl, merging with the wagon road, or Broken Top spur road.

50. Custodian's Monthly Report, August 1934. See also Manbey, Comments and Notes, 2.

51. Craters of the Moon Master Plan, 1950.

52. Custodian's Monthly Report, August 1 and September 1, 1954. For more complete coverage of the interpretive development see section on interpretation.

53. See discussion under wilderness management.

54. Resource Management Plan, Craters of the Moon National Monument, 1982, 40-42. See discussion in resource management chapter. The trails on the spatter cones were relocated, and many were closed. Also another example was the Inferno Cone trail, although it was not paved. In the early 1960s, for example, Park Service officials recognized that the trails around the Big Craters and Spatter Cones needed revisions. These included the elimination of the trail around the rim of crater and the sidehill shortcut, as well as numerous revisions to the Spatter Cone trails. This included both paved and unpaved trails. See Memorandum, Regional Chief, Branch of Operational Plans and Requirements, Western Region to Regional Chief of Operations and Maintenance, Western Region, September 6, 1963, RG 79, CCF, CRMO, Acc. 71 A1326, FRC# 416907, box 9, file D 30, NA-PSR. Also see sections on resource management.

55. Resource management plan.

56. Resource Management Plan, Craters of the Moon National Monument, 1987, 78-79.

57. 1991 draft RMP. See section on resource management for further discussion of the Inferno Cone trail. See interpretation for the Devil's Orchard Trail discussion.

58. Custodian's Monthly Report, October 1, 1925; July 1, 1927.

59. Custodian's Monthly Report, October 1, 1927. Burrell to Moore, July 22, 1927, RG 79, CCF, CRMO, file 0.35, part 3, NA. See also section on concessions for the deal worked out between the Park Service and operator to supply water before the system was completed. The new headquarters was built as of July 30, 1927; See monthly report for August.

60. Moore thought the area had the potential for 250. And for anticipated overflow, Burrell thought the most logical secondary campground was Devil's Orchard.

61. Burrell to Mather, July 21, 1927.

62. Robert Moore to Director, National Park Service, October 5, 1929, RG 79, CCF, CRMO, file 035, part 5, NA.

63. Joe Joffe to Horace Albright, May 12, 1931, RG 79, CCF, CRMO file 0.35, part 9, NA. For information on construction of the cottage, see the Arco Advertiser, May 29; November 13, 1931.

64. Custodian's Monthly Report, September 30, 1932; CCF, CRMO, file D 34, CRMO Archives.

65. Albert T. Bicknell, Final Report on Comfort Station, Public Works Project F.P. 183, June 17, 1935, CCF, file D, CRMO Archives.

66. Memorandum, Ernest A. Davidson to Astrup, October 3, 1938, RG 79, CCF, CRMO, 1930-1953, file 600, NA-PSR.

67. Custodian's Monthly Reports, July 3 and December 2, 1940 document the construction and completion of two of the cabins. The completion of the other two, which seems to have occurred, was delayed by bad weather.

68. Manbey, Comments and Notes, June 12, 1940.

69. Memorandum, Tomlinson to Staff, July 21, 1943.

70. See map in Sanford Hill, Regional Architect, Report on Field Trip to Craters of the Moon, May 11, 1946, file A 54, CRMO Archives.

71. Memorandum, Houston to Regional Director, January 27, 1950, RG 79, CCF, CRMO, file 306-06, NA-PSR; Memorandum, Houston to Regional Director, October 5, 1950, file 600-01, *ibid*.

72. Memorandum, Superintendent Aubrey F. Houston to Regional Director, Region Four, May 22, 1950, RG 79, CCF, CRMO, file 201, NA-PSR. See also master plan drawing 2008A, PNRO.

73. Memorandum, Aubrey F. Houston to Regional Director, April 19, 1951, RG 79, CCF, CRMO, file 600, NA-PSR.

74. For information on these years, see Memorandum, Aubrey F. Houston to Regional Director, February 20, 1952, RG 79, CCF, CRMO, file 600, NA-PSR; Houston to Regional Director, November 20, 1952, file 204, *ibid*. Quote in Memorandum, Sanford Hill to Superintendent, Craters of the Moon, January 15, 1951, file 204, *ibid*. It details the cuts in funding.

75. Mission 66 Prospectus, Craters of the Moon National Monument, 1956, 24. See page 13 as well for the type of administrative office and its multipurpose functions.

76. Custodian's Monthly Report, July 2, 1957; December 2, 1958. Completion Report, Obliteration of Structures, Abandoned Roads and Building Sites, Headquarters Area, RG 79, Acc. 76 A1062, FRC# 131596, box 3, file D 2621, NA-PNR. For concessions, see concessions section.

77. Completion Reports, Acc. 73 A1296, FRC# 28077, box 2, file D 2621, NA-PNR.

78. *Ibid*.

79. Completion Report, RG 79, Acc. 76 A1062, FRC# 131596, box 3, file D 2621, NA-PNR.

80. Custodian's Monthly Report, February 28, 1958, 1.

81. Mission 66 Edition Master Plan, Craters of the Moon, volume I, chapter 3, 2.

82. Contor to Regional Director, February 24, 1965. In addition to routine interior and exterior projects, storm windows were needed for the visitor center to reduce heating expenses, \$900 a year in fuel oil, cutting deeply into the monument's operating budget.

83. Superintendent's Annual Report for 1978, 1982, 1983. Quote from 1978 report, 12.

84. Superintendent's Annual Report for 1982, 8. Telephone interview with Neil King, September 4, 1991. The housing issue was slightly more interrelated than stated here. It also represented Hentges' belief that staff should live on the monument in order to be "on call."

However, a required occupancy did not apply, it seems, in this case. The poor living conditions apparently made it possible for permanent staff to live elsewhere.

85. Memorandum, Electrical and Mechanical Engineers, Office of Maintenance and Communications Engineering to Regional Director, Pacific Northwest Region, April 24, 1986, CCF, file D 3415, CRMO.

86. Superintendent's Annual Report for 1990, 5. The final residence remodeling was scheduled to be finished in late 1990 or early 1991. The heating system conversion occurred in 1986. See annual report for that year.

87. Superintendent's Annual Report for 1986, 3. See also discussion of in cultural resources section.

88. In the planning stages it was suggested that elimination of the campground operation might add more needed and useful funds to interpretation. One thought was to locate a campground on Bureau of Land Management land in the Big Cottonwood Creek area. Planners, such as Contor, held the figure of 200 campers as the limit to campground capacity, after which no more expansion would occur. See Memorandum, Superintendent Roger J. Contor to Regional Director, Western Region, January 17, 1966, RG 79, Acc. 71 A1326, FRC# 416899, box 1, file D 18, NA-PSR.

89. The Master Plan for Preservation and Use, Craters of the Moon National Monument, 11. See also, Memorandum, Superintendent Roger Contor to Regional Director, November 18, 1964; Contor to Regional Director, May 19, 1965; Regional Director to Contor, May 25, 1966, file L 3415, CRMO, Archives. Contor planned to name the new campground after a John O'Connell of Arco, who was an avid and long-time supporter of the monument, as a way to honor O'Connell's commitment to Craters of the Moon.

90. Memorandum, Contor to Regional Director, January 17, 1965.

91. Memorandum, Superintendent Paul Fritz to Regional Director, December 15, 1967, RG 79, CCF, CRMO, Acc. 76 A1062, FRC# 131598, box 5, file L 30, NA-PNR. See section on concessions.

92. Superintendent's Annual Report for 1975, 12.

93. "Draft General Management Plan, Environmental Assessment, Craters of the Moon National Monument, Idaho," November 1991, 52.

94. See discussion above and in section on administrative evolution.

95. Completion Report of Construction Project--Utilities, November 13, 1956; November 9, 1957; August 31, 1964, RG 79, CCF, CRMO, Acc. 73A1296, FRC# 28077, box 2, NA-PNR. The project relocated some of the water line in the Little Cottonwood drainage.

96. See appropriate sections in resource management discussion, as well as 1991 general management plan.

97. Memorandum, Superintendent Aubrey F. Houston to Regional Director, January 6, 1950; Memorandum, Chief Consul, Jackson E. Price to Regional Director, June 16, 1952, RG 79, CCF, CRMO, file 661, NA-PSR. See also, Zink, "Electric Power Development." The main issues were, it seems, providing power to a remote area as economically as possible. As local ranches went on line that made it more profitable for the REA, but even so, Zink notes, the Park Service seems to have agreed to pay a higher monthly rate to receive commercial

power.

CHAPTER 10

1. See discussion under the creation of the monument for the role of guides, and the appointment of Paisley. There is no evidence to suggest that other custodians operated their own guide services following Paisley's retirement. Stephen T. Mather to Samuel A. Paisley, May 19, 1925; Arno B. Cammerer to Horace M. Albright, June 23, 1925, RG 79, CCF, CRMO, file 0.35, part 2, National Archives.

2. "U.P. Officials Visit Craters," Arco Advertiser, July 9, 1926. "Pack Train Concession in Craters Given to Limbert," Arco Advertiser, May 6, 1927; "Limbert Organizes Craters Moon Tours," Arco Advertiser, June 10, 1927. There is no Park Service record available at this time for Limbert's concession. Perhaps low visitation and little interest in riding through the hot, dry, and strange environment caused the horseback tours to fail. Limbert's concession activities, in addition, were an outgrowth of his grander promotional schemes for Idaho travel. In the midst of establishing the Craters of the Moon Tours, for example, the promoter was also involved in creating hotels in the Sawtooth Mountains, and planning auto tours from the Sawtooths to Craters of the Moon and Yellowstone National Park. With so many irons in the fire, it seems possible that Limbert sacrificed the venture at the monument for these other endeavors.

3. Stephen T. Mather to Samuel A. Paisley, October 28, 1926, RG 79, CCF, CRMO, file 0.35, part 2, NA. The influence of Union Pacific officials seems particularly relevant to the approval of Crater Inn, since Mather's consent came shortly after President Carl R. Gray visited the monument and later said he would talk to Mather about getting conveniences in general, in which "refreshments" were included. See, Arco Advertiser, July 9, 1926.

4. Custodian's Monthly Report, October 1, 1927. See Robert Zink, "Short History: Craters of the Moon National Monument," "Concession Development," and also see section on developments.

5. Custodian's Monthly Report, August 1; October 1, 1927. Bert H. Burrell to Stephen T. Mather, July 21, 1927, RG 79, CCF, CRMO, file 0.35, part 3, NA.

6. Custodian's Monthly Report, August 1, 1927. Bert H. Burrell to Robert Moore, July 22, 1927, RG 79, CCF, CRMO, file 0.35, part 3, NA.

7. Jo G. Martin to Horace M. Albright, July 12, 1929, RG 79, CCF, CRMO, file 0.35, part 5, NA.

8. Ibid. Zink, "Concessions Development."

9. Custodian's Monthly Report, December 2, 1940. All of the cabins were not completed at this time. Two were reported as being ready, while the others, it seems, were available within a few years.

10. Memorandum, Superintendent Aubrey F. Houston to Regional Director, Region Four, October 5, 1950, RG 79, CCF, CRMO, file 600-01, NA-PSR.

11. Regional Director, OA. Tomlinson to Superintendent Aubrey F. Houston, February 9, 1950, RG 79, CCF, CRMO, file 201, NA-PSR.

12. Zink, "Concessions Developments."

13. The master plan drawings for 1956, for example, contain a concession with operator's quarters, and the 1958 drawings have deleted this facility.

14. Superintendent's Monthly Report, October 31, 1956.

15. Mission 66 Prospectus, Craters of the Moon National Monument, April 1956. The concession also ended because the one of the owners died and the other decided not to continue the business, in addition to being left out of the Mission 66 plan.

16. Superintendent's Monthly Report, October 10; December 8, 1958.

17. See developments chapter.

18. Fritz saw several changes that needed to be made, primarily in the wilderness proposal; the wilderness review was one of the main reasons for the new master plan as well.

19. Paul Fritz to Ralph O. Peyton, June 15, 1967; Memorandum, Superintendent Paul Fritz to Regional Director, Region Four, October 17, 1967, file C 26, CRMO Archives. Much of this information also comes from a personal interview with Paul Fritz. Fritz was something of an opportunist who believed that the rising commercial traffic along the monument highway could be exploited by private business and at the same time help provide visitor services for the monument.

20. Memorandum, Fritz to Regional Director, October 17, 1967. See Kirk to Fallini, August 22, 1967 for a schematic map of the new site. The proposed campground would have been at the junction of the monument water system road and Goodale's Cutoff, it seems, and the new road would follow its general direction.

21. Memorandum, Jesse L. Kirk to Joe T. Fallini, Bureau of Land Management State Director, August 22, 1967, file C 26, CRMO Archives. The sections to be transferred from the monument were 16 and 22, two areas of chronic trespass grazing problems. The BLM phrased the exchange as one in which grazing lands were exchanged for nongrazing lands, suiting the purposes of both agencies.

22. Joe T. Fallini to Superintendent Paul Fritz, September 21, 1967, file C 26, CRMO Archives.

23. Memorandum, Fritz to Regional Director, October 17, 1967; Memorandum, Associate Director, National Park Service to Regional Director, Region Four, October 30, 1967, file C 26, CRMO Archives.

24. Memorandum, Raymond O. Mulvany, Acting Regional Director, Western Region to Superintendent, Craters of the Moon National Monument, October 31, 1967, file C 26, CRMO Archives.

25. Hazel Johnson, Clerk of Butte County Commissioners to Bureau of Land Management, May 16, 1968, file C 26, CRMO Archives.

26. Hartley P. Kester to Superintendent Floyd Henderson, April 14, 1959. The association was granted a charter on April 10, with one month to meet and adopt by-laws to make its charter official.

27. Interview with David Clark.

<<< [Previous](#)

<<< [Contents](#)>>>

[Next](#) >>>

adhi/notes.htm
Last Updated: 27-Sep-1999

CRATERS OF THE MOON

Administrative History



BIBLIOGRAPHY

PUBLISHED SOURCES

Anderson, Abraham C. Trails of Early Idaho: The Pioneer Life of George W. Goodhart, and his Association with the Hudson's Bay and American Fur Company's Traders and Trappers. Caldwell: Caxton Printers, 1940.

Beal, Merrill D. A History of Southeastern Idaho. Caldwell: Caxton Printers, 1942.

Beal, Merrill D. and Merle W. Wells. History of Idaho. 3 vols. New York: Lewis Historical Publishing Company, 1959.

Blakesley, Jennifer A. and R. Gerald Wright. A Review of Scientific Research at Craters of the Moon National Monument. Moscow: University of Idaho College of Forestry, Wildlife and Range Sciences, Bulletin 50, February 1988.

Bottolfson, Clarence A. Little Bits of Lost River History. Arco: Arco Advertiser, 1926.

Cox, Thomas R. The Park Builders: A History of State Parks in the Pacific Northwest. Seattle: University of Washington Press, 1988.

Dykes, Fred W. Jeffrey's Cutoff: Idaho's Forgotten Oregon Trail Route. Pocatello: Pocatello Copy Cat, 1989.

Etulain, Richard W. The Idaho Heritage: A Collection of Historical Essays. Pocatello: Idaho State University Press, 1974.

. Idaho History: A Bibliography. Rev. Ed. Pocatello: Idaho State University Press, 1979.

Everhart, William C. The National Park Service. New York: Praeger Publishers, 1972.

Fisher, Vardis, ed. Idaho: A Guide in Word and Picture. New York: Oxford University Press, 1937, 2nd Ed., 1950.

Foresta, Ronald A. America's National Parks and Their Keepers. Washington, D.C.: Resources for the Future, Inc., 1984.

Geike, Archibald Sir. Geological Sketches at Home and Abroad. New York, 1882.

General Information Regarding the National Monuments. Washington, D.C.: Department of Interior, 1917.

Greeley, Ronald and John S. King. Volcanism of the Eastern Snake River Plain, Idaho: A Comparative Planetary Geology Guidebook. Washington, D.C.: Office of Planetary Geology, NASA, 1977.

Hyde, Anne Farrar. An American Vision: Far Western Landscape and National Culture, 1820-1920. New York: New York University Press, 1990.

Idaho's Highway History, 1863-1975. Boise: Idaho Department of Transportation, 1985.

Irving, Washington. The Adventures of Captain Bonneville, U.S.A. New York: G.P. Putnam's Sons, 1898.

Ise, John. Our National Park Policy: A Critical History. Baltimore: Johns Hopkins Press, 1961.

Lee, Ronald F. The Antiquities Act of 1906. Washington, D.C.: Office of History and Historic Architecture, Eastern Service Center, 1970.

Limerick, Patricia. Desert Passages: Encounters with the American Deserts. Albuquerque: University of New Mexico Press, 1985.

Mackintosh, Barry. Interpretation in the National Park Service: A Historical Perspective. Washington, D.C.: National Park Service, 1986.

. The National Parks: Shaping the System. Washington, D.C.: Department of the Interior, 1991.

Madsen, Brigham. The Bannock of Idaho. Caldwell: Caxton Printers, 1958.

Merriam, C. Hart. Results of a Biological Reconnaissance of South-central Idaho. Washington, D.C.: Government Printing Office, 1891.

Merrill, Irving R. Bound for Idaho: The 1864 Trail Journal of Julius Merrill. Moscow: University of Idaho Press, 1988.

Peterson, F. Ross. Idaho: A Bicentennial History. New York: W.W. Norton and Company, 1976.

Preston, Ralph N. Maps of Early Idaho: Old Gold Mines, Indian Battle Grounds, Old Military Roads, Old Forts, Overland Stage Routes, Early Towns. Western Guide Publishers, 1972.

Rhodenbaugh, Edward F. Sketches of Idaho Geology. Caldwell: Caxton Printers, 1953.

Roberts, Edwards. Shoshone Falls and Other Western Wonders. New York, 1888.

Rothman, Hal. Preserving Different Pasts: The American National Monuments. Urbana: University of Illinois Press, 1989.

Runte, Alfred. National Parks: The American Experience. Rev. Ed. Lincoln: University of Nebraska Press, 1987.

Russell, Israel C. Geology and Water Resources of the Snake River Plains of Idaho. Washington, D.C.: Government Printing Office, 1902.

. Notes on Geology of Southwestern Idaho and Southeastern Oregon. Washington, D.C.: Government Printing Office, 1903.

Schwantes, Carlos. In Mountain Shadows: A History of Idaho. Lincoln: University of Nebraska Press, 1990.

Sterling, Keir. The Last of the Naturalists: The Career of C. Hart Merriam. New York: Arno Press, 1977.

Stearns, Harold T. A Guide to Craters of the Moon National Monument, Idaho. Boise: Idaho Bureau of Mines and Geology, Bulletin 13, 1928.

. Memoirs of a Geologist: From Poverty Peak to Piggery Gulch. Honolulu: Hawaii Institute of Geophysics, 1983.

Unrau, Harlan D. and Frank G. Williss. Administrative History: Expansion of the National Park Service in the 1930s. Washington, D.C.: Denver Service Center, 1983.

Walker, Deward E., Jr. American Indians of Idaho. Moscow: University of Idaho Press, 1971.

. Myths of Idaho Indians. Moscow: University Press of Idaho, 1980.

Wells, Merle W. Gold Camps and Silver Cities: Nineteenth-Century Mining in Central and Southern Idaho. 2nd Ed. Idaho Bureau of Mines and Geology, 1983.

. A Short History of Idaho. Boise: Idaho Historical Society, 1974.

MANUSCRIPT MATERIALS

Boise State University Library, Special Collections, Boise State University. Frank Church Papers.

Boise State University Library, Special Collections, Boise State University. Robert W. Limbert Collection.

Boise State University Library, Special Collections, Boise State University. Edward F. Rhodenbaugh Papers.

Boise State University Library, Special Collections, Boise State University. Thomas C. Stanford Papers.

Federal Records Center, Pacific Northwest Region, Seattle, Washington. Record Group 79. Records of the National Park Service.

Federal Records Center, Pacific Sierra Region, San Bruno, California. Record Group 79. Records of the National Park Service.

National Archives, Pacific Sierra Region, San Bruno, California. Record Group 79. Records of the National Park Service. Central Classified Files. "Craters of the Moon National Monument."

National Archives, Washington D.C. Record Group 79. Records of the National Park Service. Central Classified Files, Entry 7, 1907-1939. "Craters of the Moon National Monument."

UNPUBLISHED SOURCES

Cogswell, Marilee, Cathleen Frank and Linda Rhines. Legislative History for Craters of the Moon National Monument. Seattle: National Park Service, 1985.

De Jong, Thelma B. "Explorations and Fur Trade in Idaho, 1805-1846." M.A. Thesis, Brigham Young University, 1957.

Olson, Gordon Cooper. "A History of Natural Resources Management within the National Park Service." M.S. Thesis, Slippery Rock University, 1986.

Olsen, Russ. Administrative History: Organizational Structures of the National Park Service, 1917-1985. Washington, D.C.: National Park Service, 1985.

Ostrogorsky, Michael. "Historical Overview for the Craters of the Moon National Monument of Idaho." Craters of the Moon National Monument Archives.

Zink, Robert C. "Short History: Craters of the Moon National Monument." 1955. Craters of the Moon National Monument Archives.

ARTICLES

Casner, Nicholas. "'Two-Gun Limbert': Man from the Sawtooths." Idaho Yesterdays 32 (Spring 1988): 2-11.

Jones, E.W. "Some Wonders of Idaho." Historical Society of Southern California Publications 1 (1888): 23-29.

Jones, Larry R. "Staging to the South Boise Mines." Idaho Yesterdays 29 (Summer 1985): 19-25.

Kuntz, Mel A. "Holocene Basaltic Volcanism Along the Great Rift, Central and Eastern Snake River Plain, Idaho." Utah Geological and Mineral Survey, 1983.

Kuntz, Mel A., D.E. Champion, E.C. Spiker, R.H. Lefebvre, and L.A. McBroome. "The Great Rift and the Evolution of the Craters of the Moon Lava Field." In B. Bonnichsen and R.M. Breckenridge, eds. Cenozoic Geology of Idaho. Boise: Idaho Bureau of Mines and Geology, Bulletin 26, 1982.

Limbert, Robert W. "Among the 'Craters of the Moon' in Idaho." Literary Digest 81 (April 12, 1924): 40-42, 44.

. "Among the 'Craters of the Moon': An Account of the First Expeditions Through the Remarkable Volcanic Lava Beds of Southern Idaho." National Geographic Magazine 45 (March 1924): 303-328.

. "A Trip to the Moon." Idaho Sunday Statesman. April 10, 1921.

Merrill, Irving R. "Tim Goodale and his Cutoff: A Major Trail Segment During and After the Fourth Emigration Wave." Overland Journal 8 (1990): 9-16.

Righter, Robert W. "National Monuments to National Parks: The Use of the Antiquities Act of 1906." Western Historical Quarterly 20 (August 1989): 281-301.

Rothman, Hal. "Second-Class Sites: National Monuments and the Growth of the National Park System." Environmental Review 10 (Spring 1986): 44-56.

Sneed, Paul G. "An Archaeological Reconnaissance of Craters of the Moon National Monument." Tebawa: Journal of the Idaho State University Museum 10 (1), 1967: 37-52.

Stearns, Harold T. "Craters of the Moon National Monument." The Geographical Review 14 (July 1924): 362-372.

. "The `Craters of the Moon' in Idaho." Geographical Journal 71 (January 1928): 43-49.

Stearns, Norah. "Exploring the Craters of the Moon, Idaho." Geographical Society of Philadelphia, Bulletin 26 (October 1928): 42-54.

NEWSPAPERS

Arco Advertiser.

Boise Capital News.

Idaho Statesman.

Salt Lake Tribune.

INTERVIEWS

David Clark. September 24, 1991.

Roger J. Contor. September 6, 1990.

Daniel E. Davis. August 30, 1990.

Paul Fritz. August 30, 1990 and September 21, 1991.

Robert "Cy" Hentges. September 17, 1990.

Neil King. September 4, 1991.

Edgar P. Menning. July 23, 1990.

Robert Reynolds. October 11, 1991.

Robert E. Scott. March 22, 1991.

[<<< Previous](#)

[<<< Contents >>>](#)

[Next >>>](#)

CRATERS OF THE MOON

Administrative History



Appendix A: CHRONOLOGY OF KEY EVENTS

- 1924 Calvin Coolidge proclaims Craters of the Moon National Monument, bringing to a close several years of public lobbying.
- NPS Assistant Director Horace M. Albright inspects the monument and plans for its administration.
- 1925-1927 Custodian Samuel A. Paisley, the monument's first custodian, improves the loop drive so visitors can see monument's principal sites, establishes the first headquarters at Registration Waterhole, and creates the first museum display.
- 1927 Water levels in the monument drop, prompting the original headquarters to be relocated near the present campground.
- The monument's concession is built. Crater Inn and several cabins are located across from the new headquarters.
- To add a water source and to include exemplary features, the Park Service completes an expansion study.
- 1928 Calvin Coolidge signs a proclamation expanding Craters of the Moon to twice its original size.
- 1930 Herbert Hoover signs a proclamation to add a spring in Section 28 but it is left out of added portion.
- 1931 Land exchange act is passed to eliminate private holdings in northern unit, leading to the completion of the water system this year.
- Custodian Burton C. Lacombe enters duty, marking the first career agency employee.
- Custodian Lacombe establishes the monument's first grazing policy by designating a stock drive path in the north end.
- 1933-1939 Land exchanges are finalized.
- The New Deal comes to the monument. Emergency work relief programs improve visitor services by repairing and building roads, trails, and structures.
- 1935 The monument's first seasonal ranger enters duty, and the first museum

prospectus is written.

- 1936 An act passes to excise the majority of Section 16 from the monument's northern unit, eliminating grazing, mining, and administrative threats and burdens.
- The Park Service conducts formal studies to extend the monument's road system to the south.
- 1941 Franklin D. Roosevelt signs a proclamation transferring a strip of highway in monument to Idaho State, leading to the improvement and realignment of the roadway.
- 1942-1945 World War II sends the monument into decline.
- 1949 The National Reactor Testing Station (later known as Idaho National Engineering Laboratory) is established near Arco, bringing growth to the region surrounding the monument. This occurrence, along with the postwar travel boom and highway improvements, increases visitation to Craters of the Moon and causes its management to enter a critical stage after years of neglect.
- 1952 Craters of the Moon's first permanent ranger position is created and filled.
- The Park Service acquires two tracts of school lands within the monument.
- 1956 Mission 66 arrives at the monument, making it one of the first in the region to received the program's blessings. The comprehensive program forms a watershed in the area's management. Among the changes, a new headquarters complex is constructed, the road system is paved, the administration is reorganized, and the concession service is eliminated.
- 1959 As part of the Mission 66 plan, the Interpretation Division is created and staffed by a park naturalist. The monument's natural history association is also formed.
- 1961-1967 The Mistletoe Control Program runs its course destroying thousands of limber pine and raising protests from monument managers concerned about the ecological impacts.
- 1962 The destruction of the Devil's Sewer lava tube and degradation of the spatter cones symbolize decades of unchecked impacts to geologic features.
- President John F. Kennedy signs a proclamation adding the Carey Kipuka, demonstrating the monument's commitment to preserving all elements of a volcanic environment.
- 1963 Superintendent Daniel E. Davis ends the "Posse Dash" during Opening Day ceremonies to protect sensitive volcanic resources.
- 1964 Park Naturalist Edgar P. Menning writes the first interpretive prospectus.

- 1964-1966 A new era in resource management dawns with the preparation of a revised master plan, a wildlife management plan, a wilderness study, and the first resource management plan.
- 1966 The first archaeological reconnaissance is undertaken.
- 1967 The first mule deer study is completed.
- After decades of negotiations, the Park Service acquires title to the Martin Mine lands, the last of the private lands within the monument.
- 1969-1973 Superintendent Paul Fritz proposes expansion of the monument and park status, resulting in a draft master plan.
- 1970 Congress creates the Craters of the Moon Wilderness, the first in the park system along with Petrified Forest National Park.
- 1974 Goodale's Cutoff is entered in the National Register.
- 1976-1977 To prevent sheep trespass, the first fencing project in the northern unit is completed.
- 1978 The monument issues a special-use permit to Curtis Barker with the hopes of resolving the sheep trespass problem.
- After being combined in the early 1970s as Interpretation and Resource Management, this division is separated by Superintendent Robert J. Hentges.
- 1982-1984 The spatter cone rehabilitation project takes place to restore the cones after years of deterioration.
- 1983 The second mule deer study is finished.
- 1984 Changes in federal regulations abolish the special-use permit and force the monument to seek options in the trespass grazing issue.
- The monument signs a cooperative law enforcement agreement with the state of Idaho to protect the mule deer herd from illegal hunting.
- 1987-1992 Monument expansion and park designation resurface. The movement, headed by Congressman Richard Stallings, leads to a NPS study and legislation.
- 1988 The Park Service submits a northern unit boundary revision proposal to the Department of the Interior as a way to solve grazing, hunting, and other resource protection issues.
- To combat continued trespass grazing, the monument completes a second fencing project in the northern unit.
- 1991 A U.S. Attorney General ruling on the trespass grazing issue leaves boundary

revision as the only viable solution.

Idaho National Engineering Laboratory and the monument sign an agreement to jointly fund gaseous pollutant monitoring. The agreement caps at least ten years of work by monument managers to develop a comprehensive air quality management program.

- 1992 The Department of the Interior and the state of Idaho sign a water right agreement, ending six years of negotiations as part of the Snake River Adjudication.

A second archaeological study begins.

The monument creates a Resource Management Division.

The Park Service produces a general management plan for Craters of the Moon, the first such document to comprehensively address issues and problems facing the monument's resources, visitors, and facilities in over twenty-five years.

[<<< Previous](#)

[<<< Contents >>>](#)

[Next >>>](#)

CRATERS OF THE MOON

Administrative History



Appendix B: COPIES OF KEY LEGISLATION

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA A PROCLAMATION

[No. 1694—May 2, 1924—43 Stat. 1947]

WHEREAS, there is located in townships one south, one and two north, ranges twenty-four and twenty-five east of the Boise Meridian, in Butte and Blaine Counties, Idaho, an area which contains a remarkable fissure eruption together with its associated volcanic cones, craters, rifts, lava flows, caves, natural bridges, and other phenomena characteristic of volcanic action which are of unusual scientific value and general interest; and

WHEREAS, this area contains many curious and unusual phenomena of great educational value and has a weird and scenic landscape peculiar to itself; and

WHEREAS, it appears that the public interest would be promoted by reserving these volcanic features as a National Monument, together with as much land as may be needed for the protection thereof.

NOW, THEREFORE, I, Calvin Coolidge, President of the United States of America, by authority of the power in me vested by section two of the act of Congress entitled, "An Act for the preservation of American antiquities," approved June eighth, nineteen hundred and six (34 Stat., 225) do proclaim that there is hereby reserved from all forms of appropriation under the public land laws, subject to all valid existing claims, and set apart as a National Monument all that piece or parcel of land in the Counties of Butte and Blaine, State of Idaho, shown as the Craters of the Moan National Monument upon the diagram hereto annexed and made a part hereof.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy or remove any feature of this Monument and not to locate or settle upon any of the lands thereof.

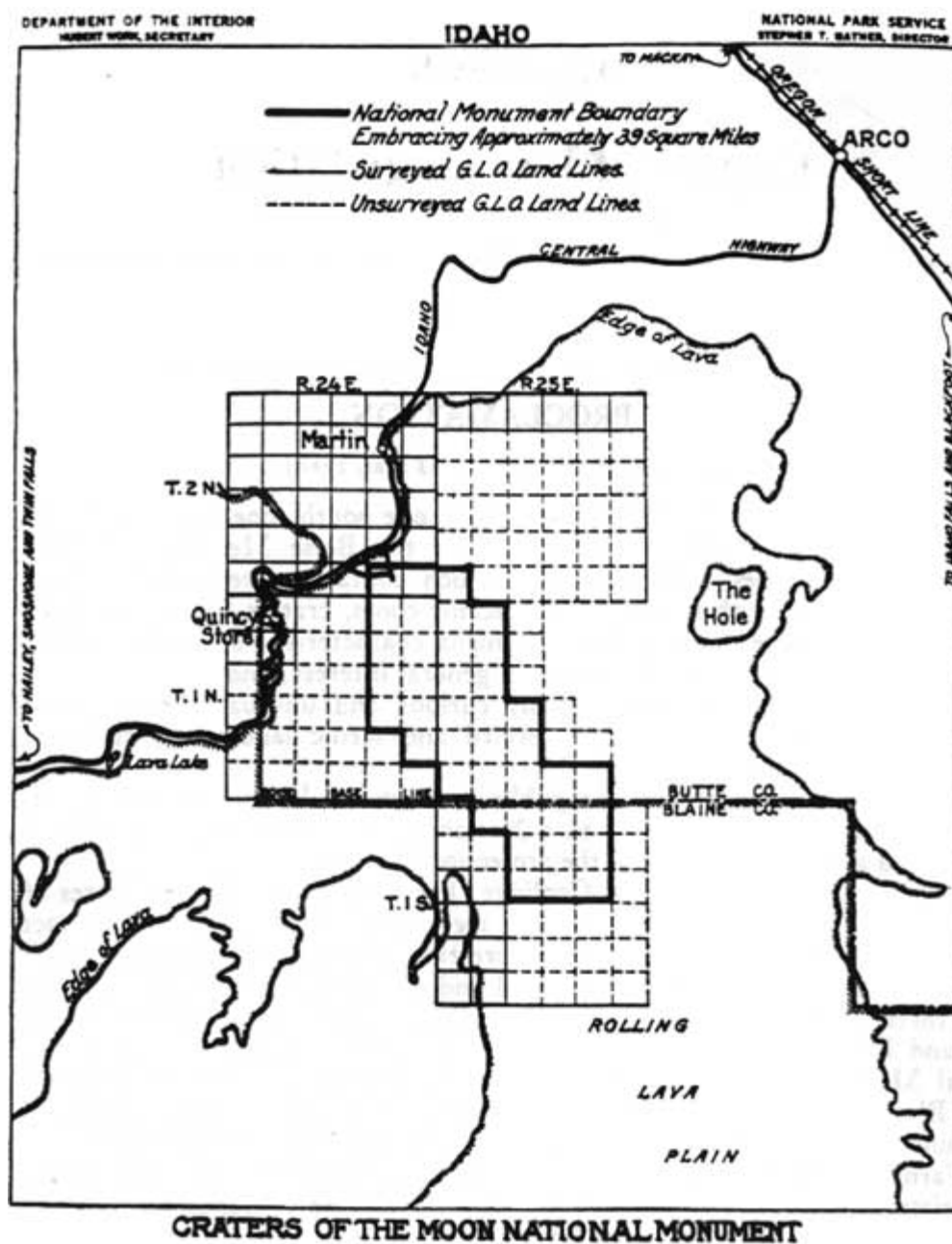
The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of this Monument as provided in the act of Congress entitled, "An Act to establish a National Park Service and for other purposes," approved August twenty-fifth, nineteen hundred and sixteen (39 Stat., 535) and Acts additional thereto or amendatory thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

[SEAL] DONE in the City of Washington this 2d day of May in the year of our Lord one thousand nine hundred and twenty-four and of the Independence of the United States of America the one hundred and forty-eighth.

CALVIN COOLIDGE.

By the President:
CHARLES E. HUGHES,
Secretary of State.



BY THE PRESIDENT OF THE UNITED STATES OF AMERICA
A PROCLAMATION

[No. 1843—July 23, 1928—45 Stat. 2959]

WHEREAS, it appears that the public interest would be promoted by adding to the Craters of the Moon National Monument in the State of Idaho, certain adjoining lands for the purpose of including within said monument certain springs for water supply and additional features of scientific interest located thereon.

NOW, THEREFORE, I, Calvin Coolidge, President of the United States of America, by authority of the power in me vested by section two of the act of Congress entitled, "An Act for the Preservation of American antiquities", approved June eighth, nineteen hundred and six (34 Stat., 225), do proclaim that Sections sixteen, twenty-one, twenty-two, twenty-five, twenty-six, twenty-seven, and thirty-four in Township two North, Range twenty-four East; Unsurveyed Sections twenty-seven, twenty-eight, twenty-nine, thirty, thirty-two, thirty-three and thirty-four in Township two North, Range twenty-five East; Unsurveyed Sections three, ten, fifteen, twenty-two, twenty-six, twenty-seven, thirty-four, thirty-five and thirty-six in Township one North, Range twenty-four East; Unsurveyed Sections three, four, nine, ten, fifteen, sixteen, twenty-two, twenty-three, twenty-four, twenty-five, twenty-six, twenty-seven and thirty-six in Township one North, Range twenty-five East; Unsurveyed Sections one, twelve, thirteen and the north half of Sections twenty-one, twenty-two, twenty-three and twenty-four in Township one South, Range twenty-five East; all Boise Meridian, Idaho; are hereby reserved from all forms of appropriation under the public land laws, subject to all valid existing claims, and set apart as an addition to the Craters of the Moon National Monument and that the boundaries of the said National Monument are now as shown on the diagram hereto annexed and made a part hereof.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy or remove any feature of this Monument and not to locate or settle upon any of the lands thereof.

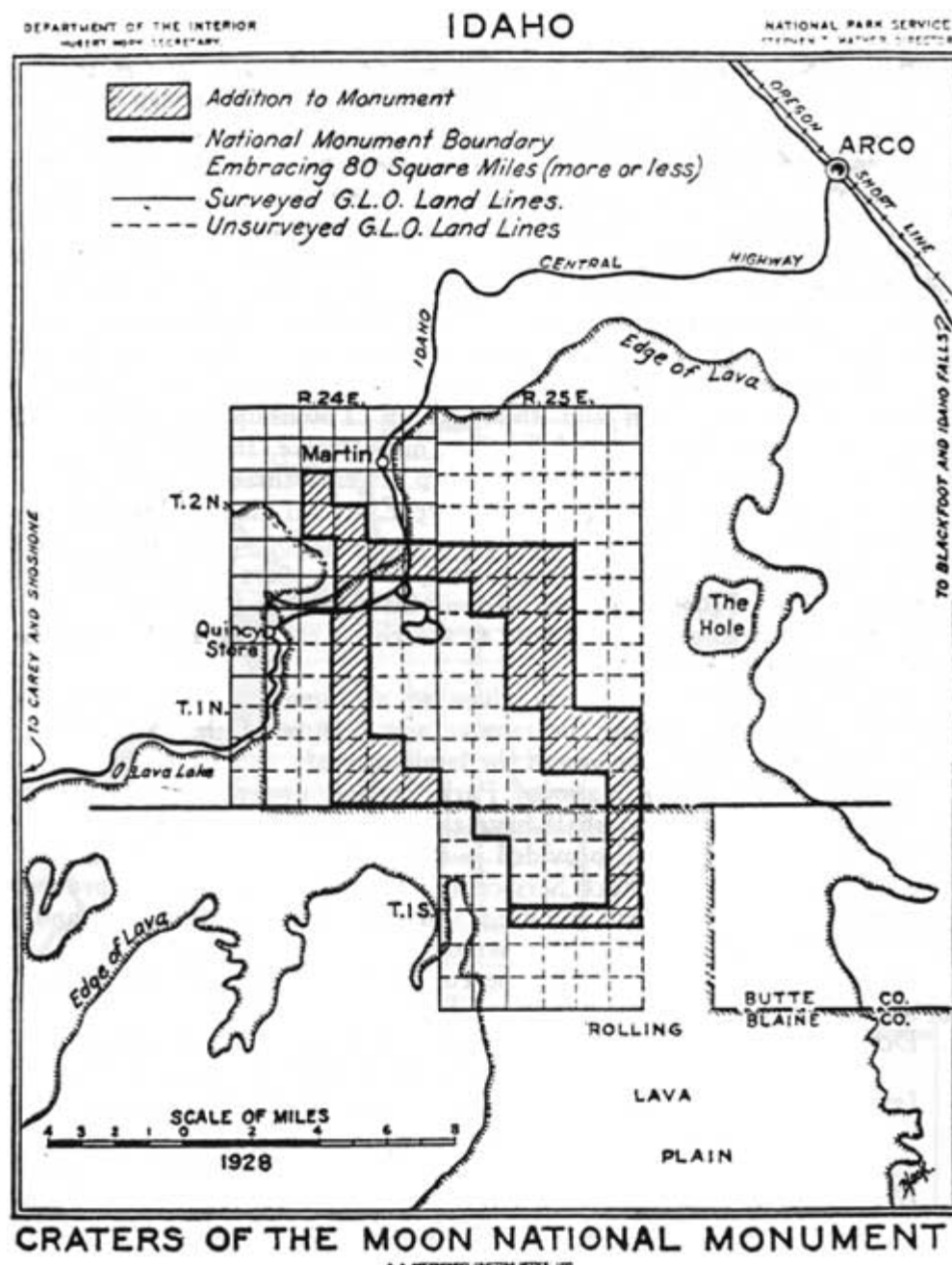
The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of this Monument as provided in the Act of Congress entitled "An Act to establish a National Park Service and for other purposes," approved August twenty-fifth, nineteen hundred and sixteen (39 Stat., 535) and Acts additional thereto or amendatory thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

[SEAL] DONE at the City of Washington this 23 day of July in the year of our Lord one thousand nine hundred and twenty-eight and of the Independence of the United States of America the one hundred and fifty-third.

CALVIN COOLIDGE.

By the President:
FRANK B. KELLOGG,
Secretary of State.



BY THE PRESIDENT OF THE UNITED STATES OF AMERICA
A PROCLAMATION

[No. 1916—July 9, 1930—46 Stat. 3029]

WHEREAS lot 1, section 28, township 2 north, range 24 east, Boise meridian, Idaho, is bounded on the north and east by the Craters of the Moon National Monument; and

WHEREAS said lot 1, section 28, contains a spring which is needed to furnish the said monument with an adequate water supply; and

WHEREAS said lot 1, section 28, is vacant unappropriated public land of the United States;

NOW, THEREFORE, I, Herbert Hoover, President of the United States of America, do proclaim that the lands hereinafter described shall be, and are

hereby, added to and included within the Craters of the Moon National Monument, and as part of said monument shall be, and are hereby, made subject to the provisions of the act of August 25, 1916 (39 Stat. 535), entitled "An act to establish a national park service, and for other purposes and all acts supplementary thereton amendatory thereof and all other laws and rules and regulations applicable to, and extending over, the said monument:

BOISE MERIDIAN

In township 2 north, range 24 east, lot 1, section 28.

Nothing herein shall affect any existing valid claim, location, or entry on said lands made under the land laws of the United States whether for homestead, mineral, right of way, or any other purposes whatsoever, or shall affect the right of any such claimant, locator, or entryman to the full use and enjoyment of his land.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

[SEAL] DONE at the City of Washington this 9th day of July, in the year of our Lord nineteen hundred and thirty, and of the Independence of the United States of America the one hundred and fifty-fifth.

HERBERT HOOVER.

By the President:
HENRY L. STIMSON,
Secretary of State.

February 21, 1932. [H. R. 15877.]	CHAP. 272.—An Act To authorize exchanges of land with owners of private-land holdings within the Craters of the Moon National Monument.
<hr/>	
[Public, No. 714.]	

Craters of the Moon National Monument, Idaho.	<i>Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,</i> That the Secretary of the Interior
Acceptance of lands in, authorized.	be, and he is hereby, authorized in his discretion to accept on behalf of the United States complete title to any or all of the following-described lands held in private ownership within the boundaries of the Craters of the Moon National Monument, Idaho: Southeast quarter southwest quarter, section 22; northeast quarter northwest quarter, southwest quarter northwest quarter, west half northeast quarter, section 27; northwest quarter northwest quarter section 26, township 2 north, range 24 east, Boise meridian, Idaho, and in exchange therefor may patent not to exceed an equal value of land to be selected from the following-described tracts of reserved public land, subject to any valid and existing entries under any law: Northwest quarter northwest quarter, section 2; northwest quarter northeast quarter,
Description.	

southeast quarter, northwest quarter southwest quarter, southeast quarter southwest quarter, section 3; northeast quarter northwest quarter section 9; northwest quarter, west half northeast quarter, section 10, township 1 north, range 23 east; and south half southwest quarter, west half southeast quarter, southeast quarter southeast quarter, section 26; northeast quarter, east half northwest quarter, south half southeast quarter, northeast quarter southeast quarter, north half southwest quarter, southwest quarter southwest quarter, section 35, township 2 north, range 23 east, Boise meridian, Idaho: *Provided*, That If lands sufficient to equal the value of the lands within the monument offered in exchange are not available within the area herein described, then in addition the Secretary may patent public land in the State of Idaho, surveyed and nonmineral in character, sufficient to equal such value. Before any exchange hereunder is effected notice of the contemplated exchange reciting the lands selected, shall be published once each week for four successive weeks in some newspaper of general circulation in the county or counties where the lands proposed to be selected are located.

Priviso.
Lands offered in exchange.

Publication required.

Value ascertained.

Title.

SEC. 2. That the value of the lands within said monument offered for exchange, and the value of the lands of the United States to be selected therefor, shall be ascertained in such manner as the Secretary of the Interior may direct; and the owners of such privately owned lands within said monument shall, before the exchange is effective, furnish the Secretary of the interior evidence satisfactory to him of title to the patented lands offered in exchange; and lands conveyed to the United States under this Act shall be and remain a part of the Craters of the Moon National Monument.

Approved, February 21, 1931.

74TH CONGRESS. SESS. II. CHS. 527—530. JUNE 5, 1936.

[CHAPTER 527.]

June 5, 1936.
[H. R. 7930.]

[Public, No. 668.]

AN ACT

To eliminate certain lands from the Craters of the Moon National Monument, Idaho.

Craters of the Moon National Monument, Idaho.
Lands eliminated from.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the north half and north half of the south half section 16, township 2 north range 24 east, Boise meridian. Idaho, be, and the same are hereby, eliminated from the Craters of the Moon National Monument.

Approved, June 5, 1936.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA
A PROCLAMATION

[No. 2499—July 18, 1941—55 Stat. 1660]

WHEREAS it appears that certain public land which is now a part of the Craters of the Moon National Monument in the State of Idaho, established by proclamation of May 2, 1924, 43 Stat. 1947, and enlarged by proclamations of July 23, 1928, 45 Stat. 2959, and July 9, 1930, 46 Stat. 3029, is not necessary for the proper care and management of the objects of scientific interest situated on the lands within the said monument; and

WHEREAS it appears that such land is needed for the construction of Idaho State Highway No. 22, by the State of Idaho:

NOW, THEREFORE, I, Franklin D. Roosevelt, President of the United States of America, under and by virtue of the authority vested in me by section 2 of the act of June 8, 1906, c. 3060, 34 Stat. 225, U. S. C., title 16, sec. 431, do proclaim that a strip of land situated in section 3, Township 1 North, Range 24 East, and sections 25, 34, 35 and 36, Township 2 North, Range 24 East, Boise Meridian, Butte County, Idaho, as shown on a map prepared by the Department of Public Works, Bureau of Highways, State of Idaho, on file in the General Land Office, Department of the Interior, bearing the title

"FAP 128-E(1)
Map showing right-of-way across
Craters of the Moon National
Monument—Butte County—Idaho
February 1941 — Scale 1"=400"

is hereby excluded from the Craters of the Moon National Monument.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

[SEAL] DONE at the City of Washington this 18th day of July in the year of our Lord nineteen hundred and forty-one, and of the Independence of the United States the one hundred sixty-sixth.

FRANKLIN D. ROOSEVELT.

By the President:
SUMNER WELLES.
Acting Secretary of State.

Proclamation 3506
ADDITION TO THE CRATERS OF THE MOON
NATIONAL
MONUMENT, IDAHO
By the President of the United States of America
A Proclamation

November 19, 1962

43 Stat. 1947.

WHEREAS the Craters of the Moon National Monument, Idaho, established by Proclamation No. 1694 of May 2, 1924, was reserved and set apart as an area that contains a remarkable fissure eruption together with its associated volcanic cones, craters, rifts, lava flows, caves, natural bridges, and other phenomena characteristic of volcanic action that are of unusual scientific value; and

WHEREAS it appears that it would be in the public interest to add to the Craters of the Moon National Monument a 180-acre kipuka, a term of Hawaiian origin for an island of vegetation completely surrounded by lava, that is scientifically valuable for ecological studies because it contains a mature, native sagebrush-grassland association which has been undisturbed by man or domestic livestock: and to add to the monument the intervening lands between the kipuka and the present monument boundaries:

NOW, THEREFORE, I, JOHN F. KENNEDY, President of the United States of America, by virtue of the authority vested in me by Section 2 of the Act of June 8, 1906 (34 Stat. 225; 16 U.S.C. 431), and subject to valid existing rights do proclaim that the following-described lands are hereby added to and reserved as a part of the Craters of the Moon National Monument:

BOISE MERIDIAN, IDAHO

T. 1 S., R. 24 E.

sec. 3, W—1/2

All of section 4, 5, 8, 9, 17, 18 and 19

sec. 10, W—1/2

sec. 20, W—1/2 and W—1/2 E-1/2

sec. 29, NW-1/4, and W-1/2 NE-1/4

sec. 30, NE-1/4:

comprising 5.360 acres, more or less.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy or remove any of the features or objects of this monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

[SEAL] DONE at the City of Washington this nineteenth day of November in the year of our Lord nineteen hundred and sixty-two, and of the Independence of the United States of America the one hundred and eighty-seventh.

JOHN F. KENNEDY

By the President:
DEAN RUSK,
Secretary of State.

84 STAT.] PUBLIC LAW 91-504—OCT. 23, 1970

DESIGNATION OF WILDERNESS AREAS WITHIN
NATIONAL PARKS AND MONUMENTS

SEC. 2. In accordance with section 3(c) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132(c)), the following lands are hereby designated as wilderness:

- (a) certain lands in the Craters of the Moon National Monument which comprise about forty-three thousand two hundred and forty-three acres and which are depicted on a map entitled "Wilderness Plan, Craters of the Moon National Monument Idaho, numbered 131—91,000 and dated March 1970, which shall be known as the "Craters of the Moon National Wilderness Area";
- (b) certain lands in the Petrified Forest National Park, which comprise about fifty thousand two hundred and sixty acres and which are depicted on a map entitled "Recommended Wilderness, Petrified Forest National Park, Arizona", numbered NP—PF—3320—O and dated November 1967, which shall be known as the "Petrified Forest National Wilderness Area".

Craters of the Moon.

SEC. 4. As soon as practicable after this Act takes effect, a filed, map and a legal description of each wilderness area shall be filed with the Interior and Insular Affairs Committees of the United States Senate and the House of Representatives, and such description shall have the same force and effect as if included in this Act: *Provided, however,* That correction of clerical and typographical errors in such legal description and map may be made.

Maps and descriptions, filing with congressional committees.

SEC. 5. Wilderness areas designated by or pursuant to this Act shall be administered in accordance with the provisions of the Wilderness Act governing areas designated by that Act as wilderness areas, except that any reference in such provisions to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act, and any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary who has administrative jurisdiction over the area.

Administration.

78 Stat. 890.
16 USC 1131
note.

Approved October 23, 1970.

adhi/appb.htm

Last Updated: 27-Sep-1999

CRATERS OF THE MOON

Administrative History



Appendix C: KEY PERSONNEL

LIST OF CUSTODIANS/SUPERINTENDENTS

Samuel A. Paisley	Custodian	1925-1927
Robert B. Moore	Custodian	1927-1931
Burton C. Lacombe	Custodian	1931-1933
Albert T. Bicknell	Custodian	1933-1936
Guy E. McCarty	Custodian/Superintendent*	1937-1949
Aubrey F. Houston	Superintendent	1949-1953
Everett W. Bright	Superintendent	1953-1958
Floyd A. Henderson	Superintendent	1958-1961
Merle E. Stitt	Superintendent	1962-1962
Daniel E. Davis	Superintendent	1963-1964
Roger J. Contor	Superintendent	1964-1966
Paul Fritz	Superintendent	1966-1974
Robert J. Hentges	Superintendent	1974-1984
Robert E. Scott	Superintendent	1984-1991
Jonathan B. Jarvis	Superintendent	1991-

*In 1948 the National Park Service changed the custodian title to superintendent.

LIST OF CHIEF RANGERS AND NATURALISTS/INTERPRETERS

Robert C. Zink	Permanent Park Ranger**	1952-1956
Lester F. McClanahan	Supervisory Park Ranger	1957-1961
David C. Ochsner	Park Naturalist	1959-1960
Frank Hambly	Chief Park Naturalist	1962-1963
Vern Appling	Supervisory Park Ranger	1962-1966

Edgar P. Menning	Chief Park Naturalist	1963-1965
Dennis L. Carter	Supervisory Park Naturalist	1967-1968(?)
Robert J. Ferris	Supervisory Park Ranger	1967-1978
David M. Schnute	Park Interpreter	1971-1973
Robert W. Reynolds	Park Interpreter	1973-1976
David R. Clark	Chief Interpreter	1978-
Neil H. King	Chief Ranger	1978-1990
R. Bruce Edmonston	Chief Ranger	1990-

**Robert Zink was the first permanent park ranger.

LIST OF RESOURCE MANAGEMENT RANGERS

Shelly H. Sparhawk	Resource Management Specialist	1988-1991
Vicki Snitzler-Neek	Chief of Resource Management	1992-

LIST OF MAINTENANCE SUPERVISORS

Floyd Standlee	Maintenance Foreman	1966-1968
William T. Cunningham	Maintenance Foreman	1968-1970
Preston L. Shakespeare	Maintenance Foreman	1970-1975
James Harrison	Maintenance Foreman	1978-1982
Patrick D. Kain	Maintenance Foreman	1982-1985
Daryl W. Gardner	Maintenance Chief	1985-1988
Kent D. Campbell	Maintenance Chief	1988-

LIST OF ADMINISTRATIVE ASSISTANTS/OFFICERS

Hugh T. Higginbotham	Administrative Clerk	1957-1958
Stanley M. Tesdahl	Administrative Assistant	1958-1959
Harold F. Johnson	Administrative Assistant	1959-1961
Lee R. Rutledge	Administrative Assistant	1961-1962
Charles B. Russell	Administrative Assistant	1962-1963
Samuel W. Brecheisen	Administrative Assistant	1963-1965
Mildred Standlee	Administrative Officer	1965-1968

Beverly Farmer	Clerk-Typist	1968-1992
Charles K. Gadd	Management Assistant	1970-1972(?)
S. J. Zachwieja	Management Assistant	1972(?)-1974
Diane Tibbets	Administrative Officer	1974-1977
Debra L. Takenta	Administrative Clerk	1977-1978
Eleanor M. Bisson	Administrative Clerk	1978-1981
Ronald D. Berry	Administrative Services Assistant	1981-1984
Marie T. Jausoro	Administrative Services Assistant	1984-1988
M. Eileen Layman	Administrative Support Assistant	1988-1991
Betty Runnels	Administrative Support Assistant	1991-1992

<<< [Previous](#)

<<< [Contents](#)>>>

[Next](#) >>>

CRATERS OF THE MOON

Administrative History



Appendix D: VISITATION FIGURES

Visitation figures were first kept in 1925 with the assignment of the first custodian.

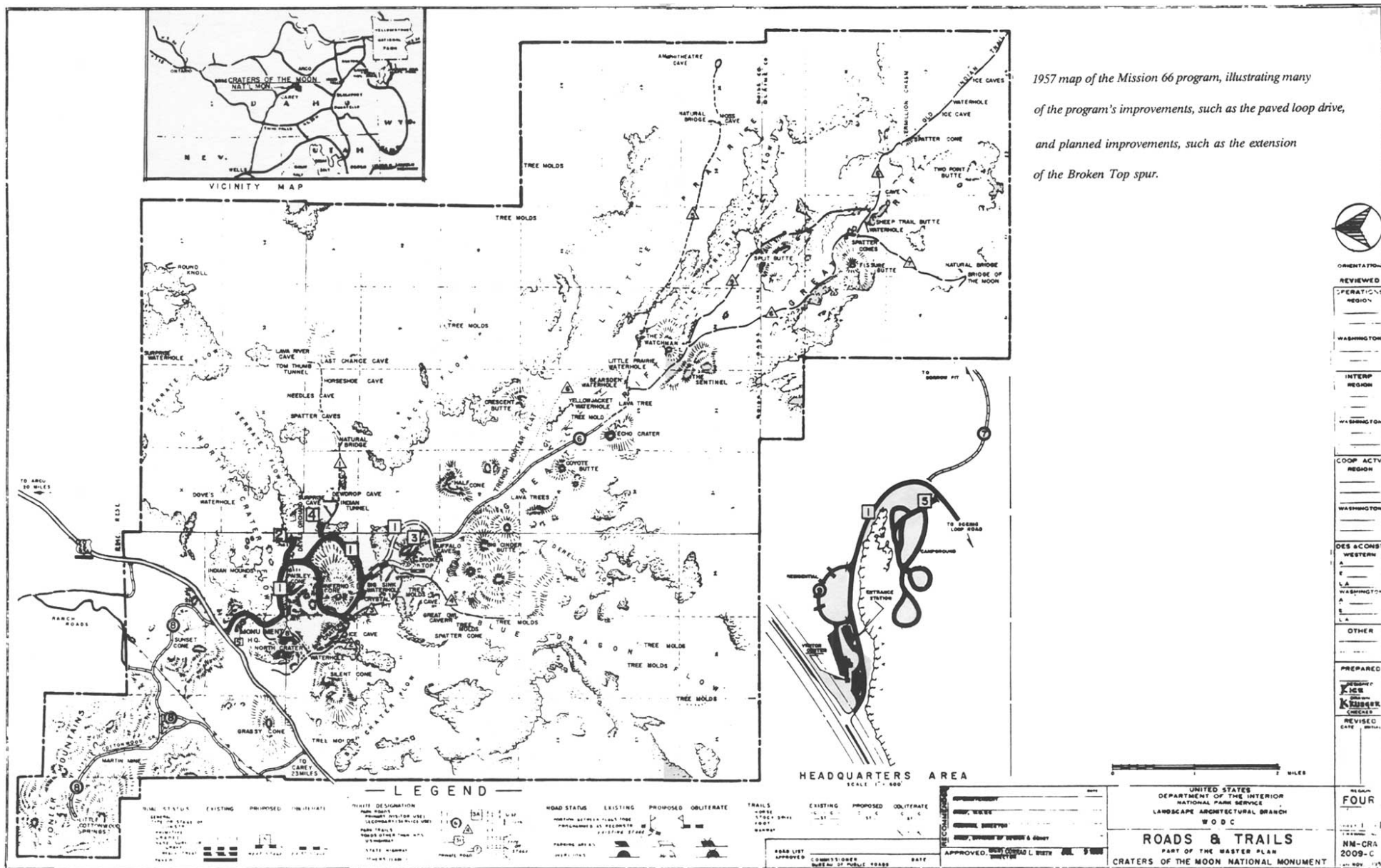
1925	3,349
1926	4,620
1927	5,771
1928	7,768
1929	7,630
1930	7,365
1931	5,588
1932	6,296
1933	6,068
1934	7,627
1935	10,353
1936	11,995
1937	18,715
1938	21,182
1939	19,270
1940	18,715
1941	21,796
1942	6,878
1943	2,194
1944	2,266
1945	4,607
1946	19,334

1947	26,657
1948	31,652
1949	36,027
1950	51,178
1951	57,434
1952	84,761
1953	95,221
1954	98,656
1955	107,759
1956	119,751
1957	146,399
1958	117,181
1959	128,906
1960	134,276
1961	123,510
1962	175,278
1963	134,949
1964	172,046
1965	182,846
1966	198,744
1967	214,567
1968	190,459
1969	199,390
1970	223,502
1971	223,510
1972	205,932
1973	190,926
1974	163,388
1975	216,964
1976	249,945

1977	258,410
1978	259,677
1979	220,698
1980	162,454
1981	236,525
1982	294,387
1983	273,693
1984	220,801
1985	172,503
1986	176,248
1987	202,800
1988	217,022
1989	189,317
1990	207,766
1991	217,879

<<< [Previous](#)

<<< [Contents](#)>>>



1957 map of the Mission 66 program, illustrating many of the program's improvements, such as the paved loop drive, and planned improvements, such as the extension of the Broken Top spur.



ORIENTATION

REVIEWED

OPERATIONS

REGION

WASHINGTON

INTERP

REGION

WASHINGTON

COOP ACTV

REGION

WASHINGTON

DES & CONST

WESTERN

LA

WASHINGTON

LA

OTHER

PREPARED

FOR

KRUSBERG

CHECKED

REVISED

CASE

NO. 104

FOUR

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44