

Craters of the Moon National Monument
Backcountry/Wilderness Management Plan

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Approved:

_____/s/_____
Robert Scott, Superintendent Date 1989_____

James A. Morris, Superintendent Date _____

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Introduction:

As stated in the Craters of the Moon National Monument enabling legislation of 1924, the monument "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 and general interest". Approximately 80% of the monument is contained within the designated wilderness area established by Congress on October 23, 1970. Craters of the Moon was one of the first National Park Service areas to receive wilderness designation. This area was designated wilderness because of the unique geologic features and outstanding opportunity for solitude. This 43,243 acres area is subject to management guidelines set forth in the 1964 Wilderness Act and NPS management policies.

The mandate set forth in the Wilderness Act states that these areas are to be "administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character".

The Craters of the Moon Wilderness Area is a pristine area with minimal human influence and truly outstanding opportunities for wilderness solitude. We are fortunate to have the opportunity to manage the area to preserve the wilderness character and prevent impacts, rather than to try to restore that character through mitigation of impacts.

This management plan also includes backcountry areas which are undeveloped and essentially natural in character that are not within the designated wilderness area. Therefore, the term "backcountry" includes but is not limited to that portion of the monument that is designated wilderness. For example, the North End is considered 'backcountry and is included in this document, as well as, within its own separate policy statement (See Appendix D).

Description of Area

The majority of the monument is backcountry /wilderness in character. It includes approximately nine miles of the Great Rift, a weak zone in the earth's crust which resulted in the area's geologic phenomena. The backcountry contains many geologic formations associated with volcanism, including cinder cones, lava flows, spatter cones, fissures, and tree molds.

Elevations in the backcountry range from 5330 ft. to 7725 ft. Although water sources do exist in cracks and lava tubes, there is very little water and it can be intermittent and unreliable. The climate is arid with summer highs in the nineties (F) and winter lows below 0 (F). Average annual precipitation is 16 inches, with most moisture in the form of winter snows.

Although much of the area may appear rather barren, vegetation grows in cracks where soil accumulates and on older cinder cones and lava flows where soil has developed. The major vegetation types are sagebrush/grass complexes which are the climax community for the Snake River Plain. Other common vegetation types are the limber pine/bitterbrush complexes.

Mammalian species in the wilderness range from small rodents and bats to mule deer and coyote. Historically, grizzly bears and bighorn sheep inhabited the area.

The Bureau of Land Management proposed Great Rift Wilderness Area (341,000 acres) surrounds the Craters of the Moon Wilderness Area on the south, west, and east. This area is currently managed under the BLM Interim Management Policy and Guidelines for Lands Under Wilderness Review.

A Baseline Resource Inventory was completed in 1988. This inventory included vegetation, wildlife, and lichen species within the backcountry and wilderness portions of the monument. In 1992-1993, a baseline inventory for water resources was completed. In 1993, a archeological survey was completed for the Little Prairie burned area.

Current Use/Condition

Most visitors to the monument appreciate the backcountry as part of the scenic beauty. Only a limited number of hikers and backpackers use the wilderness area. Access is primarily from the developed portion of the monument. The Great Rift is the most heavily used portion of the backcountry. An abandoned fire road extends approximately 5 miles south from the Tree Molds Parking Lot to the northwest side of Sentinel Cone. This old road/trail is the main access route into the wilderness.

DAY USE: Most hiking groups are small, from one to five people. An exception is educational groups of 15 to 20 hikers which sometimes use the wilderness. Day use is minimal based on trailhead parking use and observations made by SCA interns conducting a trail survey in 1994-96.

OVERNIGHT USE: Overnight camping requires a special use permit. For the period 1984-1995, the wilderness received an average of approximately 110 user nights per year. Groups are usually small, averaging two to three per party. Under regulations established in 1984, large groups (12-18 people) do occasionally camp in the wilderness. Generally, groups stay out only one or two nights since all water must be carried in.

Camping is not permitted in the North End Unit, except in the Group Campground. Researchers and work crews are permitted to camp at the research camp and other areas on a case by case basis. Day use in this area is light. Camping is not permitted at Carey Kipuka, except by researchers. This section of Wilderness Area was designated a Research Natural Area in 1993. Accordingly, recreational camping would no longer be appropriate in this area.

At present, there are no established campsites. The only restrictions on campsite selection are: 1) parties must camp within the wilderness boundary (except in winter); 2) camping is not permitted within one mile of the Tree Molds Trailhead; 3) open fires are prohibited. The Echo Crater area receives the majority of the camping use. There are approximately 4 camp areas inside Echo Crater that have been established by use and show minimal impacts. The main impacts are bare ground areas, a minimal amount of litter, rock wind breaks, and fire rings (although fires are not permitted). The bare ground areas are primarily due to removing rocks rather than vegetative damage, although some vegetative damage has occurred.

The only signs of recent human impact are along the trail corridor into the Echo Crater area, in Echo Crater, and the route into Carey Kipuka from BLM lands.

A cement water trough at Little Prairie Waterhole, spent aircraft ammunition casings, and campsites in the Fissure Butte area are remnants of historic use.

The remainder of the wilderness area is virtually pristine. Few people camp beyond Echo Crater and only a small percentage day hike beyond this area - mainly to Fissure Butte, and very rarely to the Vermillion Chasm area. Signs of human impact are almost nonexistent.

HORSE USE: Six stock parties have requested a permit between 1989-1996. The group size have ranged in size from 2 to 12. A total of 39 horses have used the wilderness during this time period. None of these groups travelled beyond The Sentinel.

WINTER USE: During periods of snow accumulation (mid-November to mid-April), the Loop Drive is closed to motorized vehicles. In many ways, the frontcountry becomes the backcountry since visitors must ski or snowshoe to travel beyond the headquarters area. Day use is common on weekends with good conditions (as high as thirty skiers per day), while weekday use is sporadic. Overnight use is rare since fires are not permitted and temperatures are frequently below zero. Visitors usually camp in the Caves Parking Lot or Tree Molds Parking Lot, where overnight use is allowed with a permit only during the winter. Wilderness use is almost nonexistent in the winter months because users must ski or snowshoe several miles just to reach the wilderness boundary.

Management Objectives

-To preserve and protect the wilderness resources, including the primeval character and influence referred to in the Wilderness Act. To protect the natural processes and relationships from human impacts.

-To provide for visitor use with maximum freedom; using the minimum restrictions necessary to protect and preserve the wilderness resource and the wilderness experience for all visitors.

-To encourage wise visitor use by education, example, and management.

-To develop an active monitoring program to provide data for management decisions. To mitigate any impacts in order to maintain current resource conditions.

-To manage the wilderness area within the regulations/guidelines established by the Wilderness Act, the NPS 12-Point Plan, NPS Management Policies, the Servicewide Task Force on Wilderness Policy and Management, and the Pacific Northwest Region Wilderness Management Program.

-To encourage research within backcountry/wilderness areas to increase knowledge of the ecosystem without impacting the ecological or social resource.

-Ultimately, to pass on the wilderness resource for future enjoyment.

Management Techniques/Issues

Limits of Acceptable Change:

The Limits of Acceptable Change (LAC) system is a decision/management process in which emphasis is on acceptable resource conditions. Once those conditions are identified, management decisions are based on preserving or achieving those acceptable conditions. It is a nine step process as listed below:

- 1) Identify area concerns/issues
- 2) Define opportunity classes
- 3) Select indicators of resource and social conditions
- 4) Inventory current conditions
- 5) Specify standards for indicators from step 3
- 6) Identify alternative opportunity class allocations
- 7) Identify management actions for each alternative
- 8) Evaluate/select an alternative
- 9) Implement management actions and monitor resource

At the current levels of use and resource condition, it is impractical to implement the LAC System at Craters of the Moon National Monument. However, some of the steps and concepts are important in any wilderness management plan. An active resource monitoring program will be instituted to assure resource protection.

Opportunity Classes:

In order to provide a variety of wilderness and backcountry experiences, three opportunity classes have been defined within the CRMO backcountry (see figure 1 for map):

Backcountry: The Backcountry Opportunity Class includes all undeveloped and essentially natural areas outside the boundaries of the wilderness area. Camping is not permitted in this class except in the Group Campground, researchers in the research camp, and, during the winter months, at the Caves Area and Tree Molds Area. Day use and associated impacts are moderate. Day use does not require a permit, except in the North End Unit. In this opportunity class, more human impacts and social contacts are acceptable than in the other two opportunity classes.

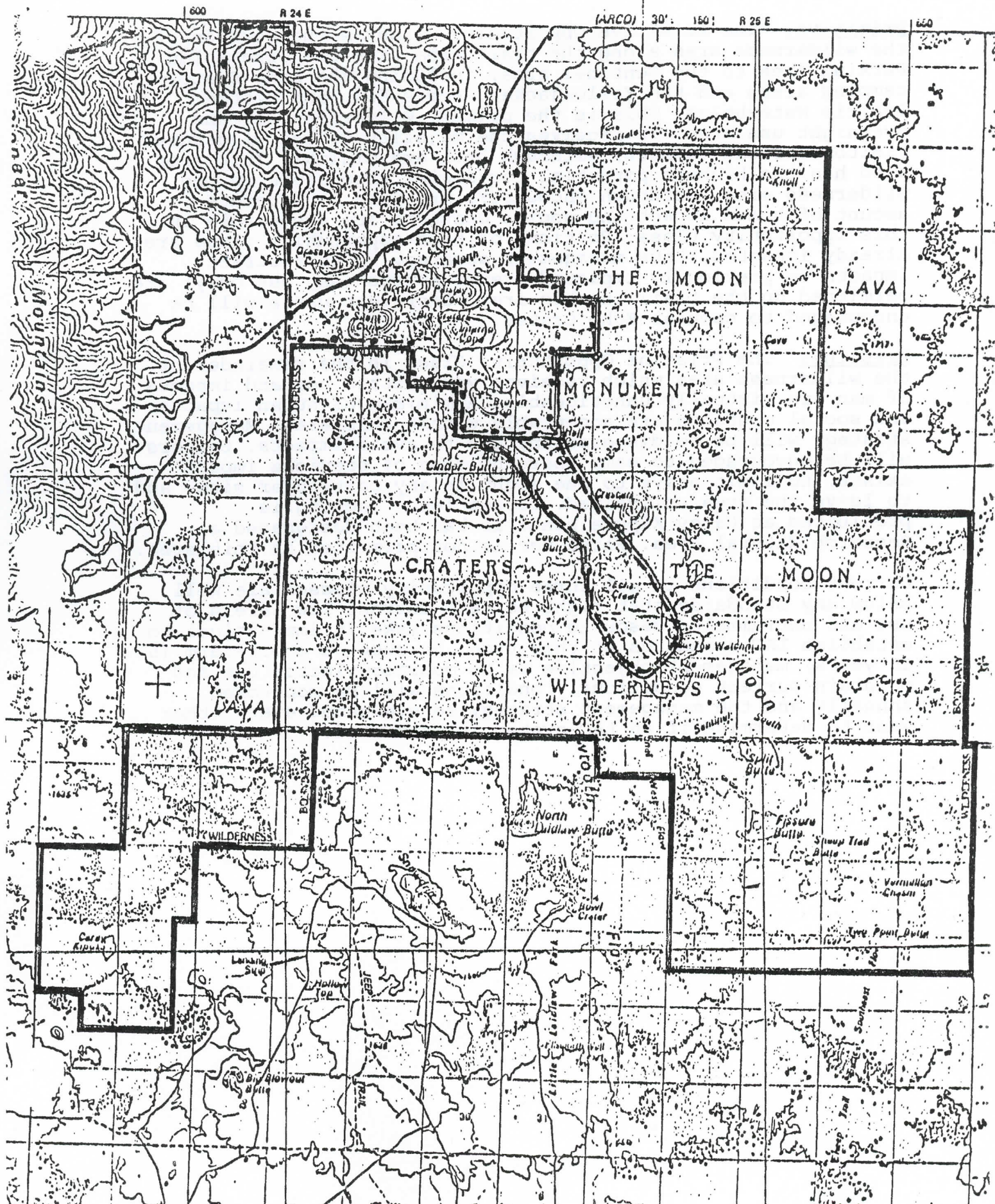
Primitive: The Primitive Opportunity Class is the portion of the wilderness area along the trail area from the Tree Molds Parking Area to the Sentinel area, including the Echo Crater camping areas and the Yellowjacket, Bears Den, and Little Prairie Waterholes. This is the primary wilderness day and overnight use area. It receives the majority of the wilderness visitor use and impacts, although both are minimal. This area also has the highest potential for social encounters in the wilderness area, although encounters are rare. A moderate amount of human impact and social contacts are acceptable in this opportunity class. Portions of this opportunity class are already impacted, thus management strategy is to restrict impacts to previously impacted areas. Horses (day use only) are permitted on the trail in this area. Overnight users will be encouraged to camp at Echo Crater.

Pristine: The Pristine Opportunity Class is the remainder of the wilderness area which receives very little use and impacts of man are virtually unnoticeable. A minimum of human impacts and social contacts are acceptable within this area. Management strategy will be to disperse any use to avoid impacts. Campers will be encouraged to camp where no sign of previous impact exists, to limit stays to one night in any particular site, and to leave the area unimpaired. recreational camping is prohibited at Carey Kipuka since it has been designated a Research Natural Area. Horse use is not permitted in this area.

Current conditions in all three opportunity classes are well below any standards that might be set. Current low levels of use and untrammelled resource conditions make it impractical to establish LAC standards at this time. As such, a short-term (5-10 years) management objective is to monitor visitor use and maintain current conditions. Conditions will be monitored annually and the management strategy re-evaluated every other year to determine if an LAC system is warranted.

FIGURE 1: Opportunity Classes

- Backcountry
- Primitive
- Pristine



Use Regulations:

PERMITS: A backcountry permit is required for any party planning to backpack (overnight) into the wilderness or camp at the Caves Area and Tree Molds Area (during winter months). Researchers are required to have a collection permit before they start their studies. A permit is also required for day use in the North End and for day use by horse parties. No hikers or bicycles are permitted in the North End Unit during hunting season.

GROUP SIZE: Research has shown that large parties cause more resource damage than small parties. Social impact on the experience of solitude is also greater with large groups. It is particularly important to establish group size limits to minimize ecological damage in areas where impact is likely to occur rapidly, such as relatively undisturbed areas. The Craters of the Moon Wilderness Area is a virtually undisturbed area. A size limit of 12 people per party has been established to preserve these pristine conditions.
(See Appendix A for list of references)

STOCK USE: A special use permit is required for backcountry stock use and users must register at the Visitor Center. Party size is limited to 12 head and overnight stays are prohibited. Stock is restricted to a designated route as specified in the permit, and must comply with all applicable CFR regulations. The designated route is entirely within the primitive opportunity class. Grazing of stock is generally not an issue since overnight use is prohibited. If parties wish to feed horses during their day trip, pelletized feed must be carried in. Grazing is not permitted. Each group is responsible for cleaning the loading/unloading area after the trip. Any parties that contact the monument prior to their visit are asked to feed their stock weed-free feed two weeks prior to their visit. They are also asked to use "fecal collection" bags. (See Appendix B for research and permit procedures pertaining to stock use)

Due to the low use by stock parties, the small area in which they are permitted to travel compared to the opportunities in the surrounding area, the high potential for the introduction of exotic plant species, and the fact that every stock party that has visited the monument since 1992 has elicited complaints from other visitors; has prompted monument personnel to re-evaluate stock use in the wilderness area. Until the following steps can be taken, stock use will be regulated by special use permit, authorized on a case by case basis by the Superintendent.

- o Stock permits from the past five years would be checked to determine whether or not use is recurring among parties or if use seems to be a one time occurrence. Parties would be contacted to gauge their reaction to changes in stock use at the monument.

- o Local folks who recreate by horseback riding will also be contacted to ascertain what impacts they would experience if the monument changed its stock use program.

- o A literature search would be conducted to find any information as to the efficacy of weed-free feed and "packing out" fecal material. Additionally, it would be useful to know if such programs have placed undue burdens on stock users or have they adjusted easily. Other information that should be gathered includes the likelihood that exotic plants could be introduced through stock use, if other parks have banned stock use for this reason, and if banning stock has caused consternation among the horse back riding constituency.

- o It would also be an appropriate juncture, to determine what monument policy would be on the use of pack animals such as goats and llamas. This has not been an issue in the past, but it would be better to be proactive rather than reactive.

- o When the information gathering is completed an EA should be completed and this plan revised to reflect the decision.

PETS: Pets are not permitted in backcountry/wilderness areas.

CAMPING: Although no designated campsites exist, the Echo Crater area contains several campsites established through use. Any backpackers who wish to camp within the primitive opportunity class will be encouraged to use these sites to limit the amount of resource damage.

Within the pristine opportunity class, backpackers will be encouraged to disperse use by camping on areas that do not appear to have been used before. They will also be asked to camp for only one night in any given site and to leave little sign that the site was used when they leave.

Camping is not permitted within one mile of the Tree Molds Parking area, except during winter.

Camping is not permitted in the backcountry opportunity class, including the North End. There are exceptions: the Caves Area and Tree Molds Area during winter months and the Group Campsite and Research Camp within the North End Unit.

WATER: Since 1920, The volume of water in many of the waterholes has fluctuated greatly. Consequently, there is no reliable source of water. The limited amount of water present in the wilderness is very important to wildlife, especially birds. Drinking from waterholes also presents the possibility of contracting Giardia or other health hazards.

For these reasons, all visitors are urged to carry enough water to sustain them for the duration of their stay. A minimum of two gallons per person per day is recommended during the summer. An appropriate filter should be used if water is obtained from lava tubes. Tests in Bear's Den and Little Prairie Waterhole have documented the presence of bacteria.

CAMPFIRES: Woodfires are prohibited throughout the monument to preserve the resource. Backpackers are encouraged to carry a stove.

CACHES: The storage of water, supplies, and/or equipment by the public is not permitted.

SANITATION: As a general principle of minimum impact, anything that is carried into the backcountry will be carried out also. Litter will not be disposed of in the backcountry.

Proper sanitation requires that human waste be disposed of in cinder fields at least one hundred yards from any water source. The "cathole" method of burying human waste will be used.

AIRCRAFT AND MOTORIZED EQUIPMENT:

Wilderness: Public use of mechanical and motorized equipment, including bicycles and aircraft, is not permitted within the wilderness area. Administrative use of motorized or mechanized equipment, such as helicopters, will be permitted under the following conditions:

- o An essential activity is impossible to accomplish by non-motorized means because of such factors such as time or season limitations, safety or other material restrictions. The criteria are as follows:

- The "minimum tool" concept is the first decision factor to be utilized when choosing tools to complete a wilderness project. The "minimum tool" concept requires managers to examine alternative methods to accomplish project objectives in the most efficient and minimally impactful means to workers, visitors and the resource. Will the tool choice preserve user solitude and the biological integrity of the wild land resource? Is the tool the minimum needed to accomplish the work, or is it just the easiest or most convenient?

-The "safety" of wilderness users, NPS employees, and contractor employees is of the highest priority for all projects. Will the tool choice help reduce physical demands and potential injury to workers? Does the expertise and skill exist to safely accomplish the work, especially when a primitive tool is required by wilderness law and policy.

- "Efficiency and Cost" need to be considered in any project decision to meet the available budget for costs of equipment, materials, labor, management objectives, and time available, Within classified wilderness efficiency and cost are important, but never the main criterion used to justify tool choice.

- "Resource Protection", the preservation of natural processes, biological integrity, and user solitude are predominate goals in the management of classified Wilderness. Will the selected "minimum tool" minimize resource impacts?

The Superintendent will be the authorizing official for any administrative use of motorized or mechanized equipment. A memorandum outlining the above criteria prepared by the project manager will be the decision document. The Superintendent will sign it and it will become an addendum to this plan.

Backcountry: Bicycle use is permitted in the North End of the monument beginning in 1990. A permit must be obtained at the visitor center. Bicycles must remain on established roadways at all times. No permits will be issued for bicycling in the North End during hunting season. Bicycles are not permitted elsewhere in the backcountry. Public use of other mechanical and motorized equipment is not permitted in any backcountry areas, including the North End except by special use authorization of the Superintendent.

Management Practices:

EDUCATION/INFORMATION: Education to promote wise and safe wilderness use is imperative for resource protection. Every party issued a backcountry permit will be given the wilderness handout (appendix C). Information on the following topics will be emphasized to both day and overnight hikers:

- Resource protection/minimum impact techniques
- Regulations concerning backcountry use
- No water in all backcountry areas
- Hazards of backcountry travel, especially those unique to volcanic areas; precautions to be observed, including equipment/clothing necessary

Information is provided to all visitors in the park newspaper and handouts distributed at the entrance station.

Wilderness issues and values have been emphasized in interpretive programming. With a movement toward focusing most interpretive programs on resource management concerns, this topic will continue to receive attention in the future.

There are plans to include the topic of wilderness in two future publications.

TRAINING: Training is a very important aspect of any management program. All park employees should receive training in wilderness values, resources, management tools, and minimum impact techniques. Any employee may be called upon to provide information to the public concerning wilderness. Employees must teach the public through example when working or recreating in the wilderness area. Exploration of the backcountry during off-duty hours is encouraged to provide accurate and timely information to the public. The Chief of Resource Management serves as the monument's wilderness coordinator

New seasonal employees are given a one day orientation to the wilderness during the seasonal training session. Wilderness legislation, values, regulations, and minimum impact techniques will be emphasized in addition to the exposure to this particular wilderness area.

TRAILS: Trails will not be constructed or maintained in the wilderness. The area is relatively flat and many game trails exist. An abandoned fire road serves as a trail from the Tree Molds Parking Area to the northwest side of Sentinel Cone. Hikers will be encouraged to use this fire road and game trails to prevent further resource damage.

An exception to this policy will be made for the Tree Molds Trail, which will receive minimal maintenance to provide for visitor safety and to prevent resource degradation.

PATROLS: At current use levels, an intensive schedule of backcountry patrols is not warranted. However, several patrols will be made into the wilderness annually to monitor use and resource damage. Any fire rings or wind breaks in Echo Crater will be destroyed and litter removed. These actions will be documented, conditions and use monitored to determine if increased patrols are needed.

SIGNS: Signs will be kept to a minimum in backcountry areas. Signs will be placed at the main access points along the wilderness boundaries to inform hikers that they are entering a wilderness area. Only signs for trail orientation will be installed within the wilderness area. Approval will be obtained through the park wilderness coordinator for installation of any signs within the wilderness area.

No mileage will be posted for destinations under one mile in backcountry areas and no mileage will be posted within the wilderness. Signs and posts will be constructed of unpainted wood with routed and burned-in one inch Gothic capital letters. Posts will be firmly implanted at least 24 inches deep. The base of the sign text will not be more than 24 inches above ground level. Signs will not be affixed to trees, rocks, or other natural features.

AIRCRAFT AND MOTORIZED EQUIPMENT: No non-emergency administrative use of mechanical and motorized equipment (including bicycles) within the wilderness area will be permitted. Any non-emergency administrative use of this equipment (with the exception of vehicles and bicycles in the North End) in the backcountry opportunity class will be timed to cause the least disturbance to the solitude. See the procedures outline in the previous section.

Visitor use of any mechanical and motorized equipment is not permitted in wilderness or backcountry areas (except for bicycle use in the North End).

INTERAGENCY COORDINATION: Relationships will be developed with BLM personnel managing the adjacent Great Rift Wilderness Study Area to identify common concerns and increase consistency in management practices.

SEARCH AND RESCUE: Since the monument has proprietary jurisdiction, the Butte County Sheriff along with the NPS is responsible for search and rescue operations. The monument maintains a rescue cache capable of outfitting a six-person crew and can provide this equipment to the Sheriff if needed. A National Park Service liaison, the Chief Ranger, will work with the sheriff to insure that resource damage is kept to a minimum, particularly within the wilderness area. SAR operations will be reported in accord with the Craters of the Moon Emergency Operations Plan.

FIRE MANAGEMENT: The current Fire Management Plan provides details as to specific policies and procedures concerning fire management. Constraints imposed by wilderness designation will be considered in any fire management decisions.

AIR QUALITY: The air quality of the wilderness area will be managed for minimal degradation as required for Class 1 areas in the Clean Air Act. The Craters of the Moon Air Management Plan provides specific policies and procedures.

CAVE MANAGEMENT: Caves or lava tubes within the backcountry area will be managed in accordance with policies and procedures in the Cave Management Plan.

VEGETATION MANAGEMENT: Vegetation, particularly exotic species, will be managed according to policies and procedures contained in the Resource Management and IPM Plan. Minimum tool considerations will be important in decisions concerning the wilderness area.

RESEARCH: Research of the ecological communities in the backcountry is encouraged provided that the physical, biological, and social resources are not compromised. As a general rule, research that could be successfully conducted outside the monument will not be permitted. A special permit is required for any research projects.

MONITORING: An active resource monitoring program needs to be instituted to determine use and impact levels, particularly in relation to day use. One possibility may be to use an SCA intern to conduct a trail observation survey, similar to the one used for evaluating the Stay-on-the-Trail Program. This survey is still evolving. Another possibility would be to contact BLM and the US Forest Service to see if they have a monitoring protocol that could be adapted to the monument. Photo points have been established at the Echo Crater campsites to provide annual documentation of conditions. They have been taken every year since 1993.

APPENDIX A: Literature Concerning Group Size Limits

Cole, David N. Research on soil and vegetation in wilderness: a state-of-knowledge review. In: Lucas, Robert C., compiler. Proceedings-national wilderness research conference: issues, state-of-knowledge, and future directions; 1985 July 23-26; Fort Collins, CO. General Technical Report INT-220. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station; 1987: 135-177.

Cole, David N.; Petersen, Margaret E.; Lucas, Robert C. Managing wilderness recreation use. General Technical Report INT-230. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station; 1987. 60p.

Lime, David W. Large groups in the Boundary Waters Canoe Area-their numbers, characteristics, and impact. Research Note NC-142. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station, 1972. 4p.

Lucas, Robert C. Use patterns and visitor characteristics, attitudes, and preferences in nine wilderness and other roadless areas. Research Paper INT-253. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station; 1980. 89p.

Roggenbuck, Joseph W.; Watson, Allan E.; Stankey, George H. Wilderness management in the southern Appalachians. Southern Journal of Applied Forestry. 6:147-152; 1982.

Stankey, George H. Visitor perception of wilderness recreation carrying capacity. Research Paper INT-142. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station; 1973. 61 p.

Stankey, George H. A comparison of carrying capacity perceptions among visitors to two wildernesses. Research Paper INT-242. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station; 1980. 34 p.

Stankey, George H.; Schreyer, Richard. Wilderness visitor attitudes and behavior: a state-of-knowledge review. In: Lucas, Robert C., compiler. Proceedings-national wilderness research conference: issues, state-of-knowledge, and future directions; 1985 July 23-26; Fort Collins, CO. General Technical Report INT-220. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station; 1987: 246-293.

Appendix B: Literature and Permit Procedures Pertaining to Stock Use

Cole, David N. Research on soil and vegetation in wilderness: a state-of-knowledge review. In: Lucas, Robert C., compiler. Proceedings-national wilderness research conference: issues, state-of-knowledge, and future directions; 1985 July 23-26; Fort Collins, CO. General Technical Report

Cole, David N.; Petersen, Margaret E.; Lucas, Robert C. Managing wilderness recreation use. General Technical Report INT-230. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station; 1987. 60 p.

DeBenedetti, Stephen H.; Parsons, David J. Protecting mountain meadows: a grazing management plan. Parks. 8(3): 11-13; 1983.

Hendee, John C.; Catton, William R., Jr.; Marlow, Larry D., Brockman, C. Frank. Wilderness users in the Pacific Northwest-their characteristics, values, and management preferences. Research Paper PNW-61. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station; 1968. 92 p.

Lucas, Robert C. Use patterns and visitor characteristics, attitudes, and preferences in nine wilderness and other roadless areas. Research Paper INT-253. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station; 1980. 89 p.

Lucas, Robert C. Visitor characteristics, attitudes, and use patterns in the Bob Marshall Wilderness complex, 1970-1982. Research Paper INT-345. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station; 1985. 32 p.

Parsons, David J. The recovery of Bullfrog Lake. Fremontia. 7(2):9-13; 1979.

Stankey, George H. Visitor perception of wilderness recreation carrying capacity. Research Paper INT-142. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station; 1973. 61 p.

Stankey, George H.; Schreyer, Richard. Wilderness visitor attitudes and behavior: a state-of-knowledge review. In: Lucas, Robert C., compiler. Proceedings-national wilderness research conference: issues, state-of-knowledge, and future directions; 1985 July 23-26; Fort Collins, CO. General Technical Report INT-220. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station; 1987: 246-293.

Thornburgh, Dale A. Responses of vegetation to different wilderness management systems. In: Lucas, Robert C., compiler. Proceedings-national wilderness research conference: current research; 1985 July 23-26; Fort Collins, CO. General Technical Report INT-212. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station; 1986: 108-113.

Special User Permit - Stock Parties

I. General

A. Introduction

A Special Use Permit (SF 10-114) signed by the Superintendent is required for use of horses within the monument. A permit is required for each party and for each visit. There is no charge for the permit. The purpose of this permit is to minimize adverse impacts and to ensure compliance with special requirements.

B. Conditions and Restrictions

The use of horses within the monument is allowed for visitor enjoyment under the following conditions and restrictions:

- Day Use Only - Overnight stays with stock are prohibited.
- Group Size - Parties are limited to a maximum of 12 head of stock.
- Registration - Users must register at the Visitor Center.
- Designated Route - Use is allowed only on the designated trail within the Primitive Opportunity Class of the wilderness area. Travel off the designated trail is prohibited. See attached map for route.
- Rest Stops - Animals should be dispersed along the trail when stopping.
- Clean Up - Each party is responsible for cleaning the loading/unloading area when visit is completed. Animals should wear fecal collection bags or the riders should clean up after their animals along the trail.
- Feed - Grazing is not permitted. Pelletized feed must be carried for any feeding. If at all possible, animals should be on weed free feed two weeks prior to entering the monument

In addition, users must comply with all current regulations, particularly 36 Code of Federal Regulations 2.16 Horses and Pack Animals.

Section 2.16 reads as follows:

The Following are prohibited:

- (a) The use of animals other than those designated as "pack animals" for purposes of transporting equipment.
- (b) The use of horses or pack animals outside of trails, routes, or areas designated for their use.
- (c) The use of horses or pack animals on a park road, except: (1) where such travel is necessary to cross to or from designated trails, or areas, or privately owned property, and no alternative trails or routes have been

designated, or (2) when the road has been closed to motor vehicles.

(d) Free-trailing or loose-herding of horses or pack animals on trails, except as designated.

(e) Allowing horses or pack animals to proceed in excess of a slow walk when passing in the immediate vicinity of persons on foot or bicycle.

(f) Obstructing a trail, or making an unreasonable noise or gesture, considering the nature and purpose of the actor's conduct, and other factors that would govern the conduct of a reasonably prudent person, while horses or pack animals are passing.

(g) Violation of conditions which may be established by the superintendent concerning the use of horses or pack animals.

A Partial List of Other Pertinent Regulations

-All wood fires are prohibited within the monument. Charcoal fires are restricted to grates provided in the campground.

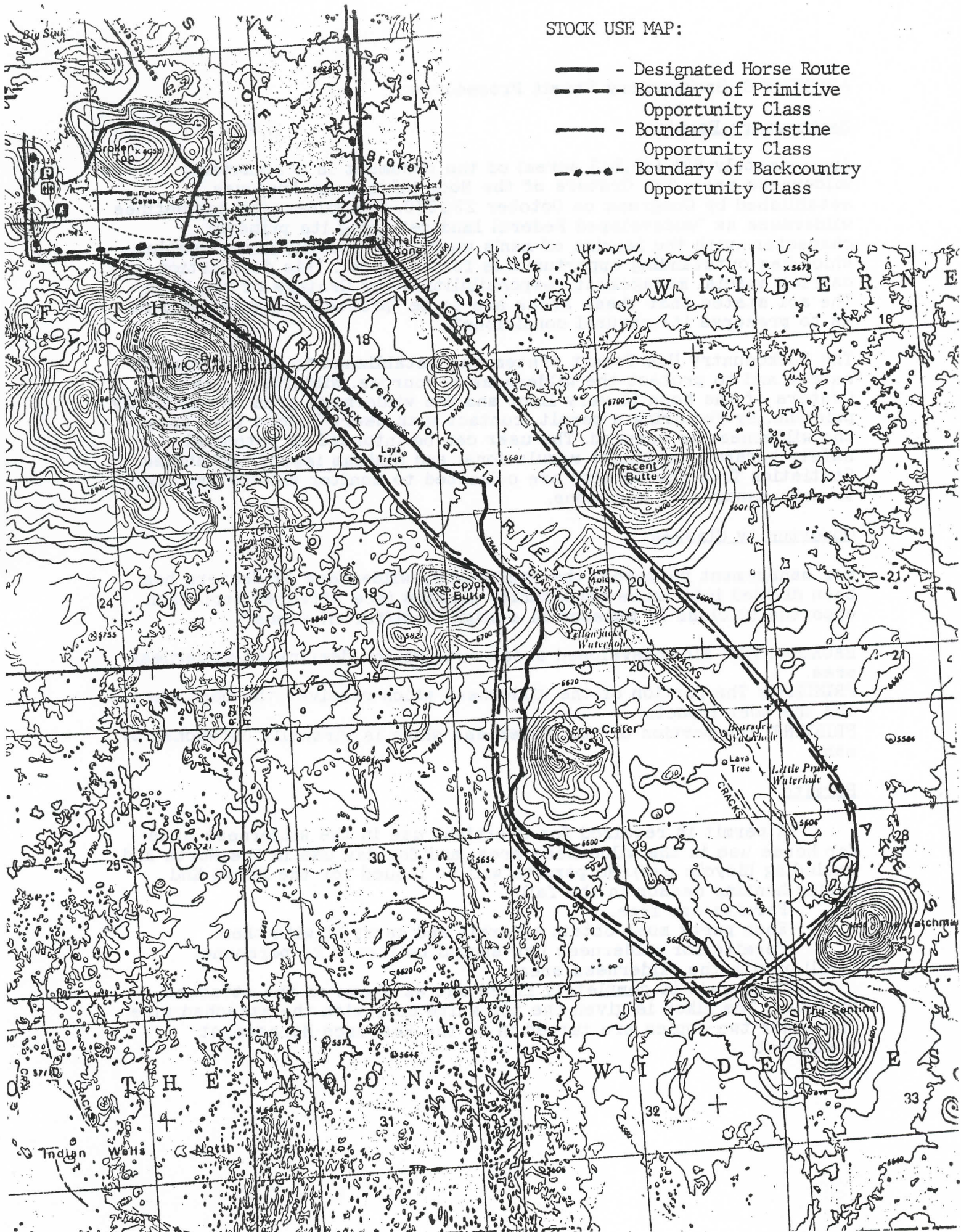
-Firearms are prohibited.

-Collecting or destroying any natural or cultural object is prohibited.

-Horses are not permitted in the campground.

STOCK USE MAP:

- - Designated Horse Route
- - - Boundary of Primitive Opportunity Class
- Boundary of Pristine Opportunity Class
- · - · - Boundary of Backcountry Opportunity Class



APPENDIX C: Backcountry Permit Procedures

Backcountry Permits

11/89

Approximately 80% (43,243 acres) of the monument is designated wilderness area. The Craters of the Moon Wilderness Area was established by Congress on October 23, 1970. The Wilderness Act defines wilderness as "undeveloped Federal land retaining its primeval character...with the imprint of man's work substantially unnoticeable... which has outstanding opportunities for solitude". This designation carries special management responsibilities for Craters of the Moon. The act states that these areas are to be "protected and managed so as to preserve its natural conditions".

The Backcountry Use Permit System was established to ensure visitor safety and to protect the wilderness resources. Wilderness use at Craters of the Moon is very light and the wilderness area is relatively pristine. By requiring a permit, contact with users before they enter the wilderness is ensured. The user can be informed of potential safety hazards, pertinent regulations, and minimum impact techniques. Statistics from the permits are collected to monitor visitor use and to make management decisions.

Opportunity Classes

For management purposes, the backcountry/wilderness at Craters has been divided into three opportunity classes (see attached map). Each opportunity class is managed in a slightly different manner.

BACKCOUNTRY: all undeveloped areas outside the designated wilderness area.

PRIMITIVE: The portion of the wilderness which receives the most use and the most impacts.

PRISTINE: the portion of the wilderness which is virtually untouched by man.

Permits

-A permit is required for overnight use in the wilderness area; for horse use in the wilderness area; and for day use in the North End (including bicycle use). No permits will be issued for the North End during hunting season in the fall.

-Permits are free.

-Each party must obtain a permit and carry it with them.

-Permits for wilderness use should be issued by personnel familiar with the wilderness area.

-The permit is completely filled out as shown on the attached examples. The hiker is given the top white copy with the attached wire. The other two copies are turned in to the Resource Management Specialist.

Camping

BACKCOUNTRY OPPORTUNITY CLASS: No camping permitted, except in Caves Area during the winter and in the group campsite.

PRIMITIVE OPPORTUNITY CLASS: Encourage people to camp in Echo Crater. There are several nice campsites that have been established by use within the crater. To minimize resource damage, it is best if people utilize these sites rather than create new ones.

PRISTINE OPPORTUNITY CLASS: Since this area is so pristine, the management objective here is to disperse use. People should camp in areas that show no sign of previous campers and leave no sign that they have camped there. Towards this end, a particular campsite should only be used for one night.

Bicycle Use

Bicycles are permitted for day use in the North End only. Bicycles must remain on established dirt roads at all times. No permit for bicycling will be issued during hunting season in the fall.

A permit will be completed in the same manner as for hikers or stock use. Under Primary Method of Travel note "Bicycles". On the Campsite name space on the right half of the permit write "Day use only".

Bicycles are not permitted off of paved roadways in other portions of the Monument.

Regulations

- Pets are not permitted in wilderness or backcountry areas.
- Wood fires are not permitted in the monument. Backpacking stoves must be used for cooking.
- Party size is limited to 12 people.
- For Horse party regulations, see specific horse use sheet.
- No visitor use of mechanized or motorized equipment is permitted in the wilderness or backcountry areas (EXCEPT for bicycle use in the North End).
- No caching of equipment/supplies by visitors is permitted.

Safety

-Drinking water is not available in the wilderness area. There are a few waterholes, but there is not much water. This water is very important to the wildlife and may also contain parasites, bacteria, etc. During hot weather, hikers should carry at least two gallons of water per person per day.

-Visitors must understand the inherent dangers of cross-country travel in lava areas. The lava is uneven and sharp. Summer temperatures can be very hot on the black lava - much hotter than in the visitor center area. Route finding can be difficult.

In winter, route finding is much more difficult. Snow can hide holes in the lava. Winter temperatures can be extremely cold.

-Visitors should be advised to take a topographical map and compass.

Minimum Impact Techniques

-Everything that is carried into the wilderness should be carried out. Keeping the wilderness pristine is everyone's responsibility.

-Human waste will be disposed of in cinder areas using the "cathole" method. Waste will be buried 6 inches deep and at least 100 yards from any waterholes.

-All natural resources, including wildlife, are protected. Hikers should "leave only footprints and take only photos".

INSTRUCTIONS FOR COMPLETING A BACKCOUNTRY PERMIT:

FILL PERMIT IN COMPLETELY!

See examples of hiker, bike, stock permits on following pages.

Visitors name and address are needed.

To Visit: is always CRMO

Complete both start and finish dates.

Location of entry/exit: usually Tree Molds Lot or Highway 20

Primary Method of Travel: foot, horse, or bicycle

Number of People/Number of Stock: fill in appropriate numbers. A stock group will have both people and stock spaces completed.

Campsite Name: fill in appropriate area name and number of nights at each site for overnight permits.

In the space below campsite name, note any pertinent regulations. Ususally this is "no wood fires" and "carry water". Sometimes "no pets" would apply. For Horse/bicycle permits, write "day use only". For bikes, also write "remain on established roads".

In the remarks section, note any vehicle description and license number (including state).

Be sure to have the hiker sign and date the permit. The issuing ranger should also sign the permit.

REMEMBER:

- Bikes are ONLY permitted on established roads in the North End.
- Only one stock group permit will be issued per day.
- Group size is limited to 12 people or stock.
- No permits will be issued for the North End during hunting season in the fall.
- Stock and bike groups cannot stay overnight.
- A BACKCOUNTRY USE HANDOUT WILL BE GIVEN TO EVERY GROUP OBTAINING A PERMIT.



BACKCOUNTRY USE PERMIT

The visitor must have this permit during the visit.

When signed, this single-visit permit authorizes.

NAME Joe Hiker

ADDRESS PO Box 4810

CITY Any ID 83499

To visit CRMO

Give best estimate of start and finish dates

FROM MO/DAY 0610 THROUGH MO/DAY 0610

Location of entry Hwy 20

Location of exit Hwy 20

Primary method of travel Bikes

Number of people in group 06

Number of pack or saddle stock 06

Number of watercraft or other craft 06

CAMPSITE NAME DAY USE ONLY

ZONE-SITE

NIGHTS

REMARKS Bikes must remain on Established Roads

DATE 6/10/89 (VISITOR'S SIGNATURE) Joe Hiker

DATE 6/10/89 (ISSUING OFFICER'S SIGNATURE) Sue Ranger

FASTEN THIS TAG TO YOUR PACK, SADDLE, BOAT OR TENT



BACKCOUNTRY USE PERMIT

The visitor must have this permit during the visit.

When signed, this single-visit permit authorizes.

NAME Joe Hiker

ADDRESS PO Box 4810

CITY Any ID 83499

To visit CRMO

Give best estimate of start and finish dates

FROM MO/DAY 0610 THROUGH MO/DAY 0610

Location of entry Tree Molds Lot

Location of exit Tree Molds Lot

Primary method of travel Stock

Number of people in group 06

Number of pack or saddle stock 06

Number of watercraft or other craft 06

CAMPSITE NAME DAY USE ONLY

ZONE-SITE

NIGHTS

REMARKS Blue Chevy truck ID 108

DATE 6/10/89 (VISITOR'S SIGNATURE) Joe Hiker

DATE 6/10/89 (ISSUING OFFICER'S SIGNATURE) Sue Ranger

FASTEN THIS TAG TO YOUR PACK, SADDLE, BOAT OR TENT



14 Rev. (11-76)

DEPARTMENT
OF THE INTERIOR
NATIONAL PARK
SERVICE

BACKCOUNTRY USE PERMIT

The visitor must have this permit during the visit.

When signed, this single-visit permit authorizes.

NAME Joe Hiker

ADDRESS PO Box 4810

CITY Any STATE ID ZIP

8	3	4	9	9
1	2	3	4	5

To visit CRMO

9	2	8	0
6	7	8	9

Give best estimate of start and finish dates
FROM MO/DAY 0610
THROUGH MO/DAY 0612

Location of entry Tree Molds Lot

18	19	20
----	----	----

Location of exit Tree Molds Lot

21	22	23
----	----	----

Primary method of travel Foot

24	25
----	----

Number of people in group 06

26	27
----	----

Number of pack or saddle stock

28	29
----	----

Number of watercraft or other craft

30	31
----	----

CAMPSITE NAME

ZONE
SITE

NIGHTS

Echo Crater

Split Butte Area

* No Wood fires

* CARRY Water

REMARKS

Yellow Honda (Co) IBX 745

DATE 6/10/89 (VISITOR'S SIGNATURE) Joe Hiker

DATE 6/10/89 (ISSUING OFFICER'S SIGNATURE) Sue Ranger

78 | 80

FASTEN THIS TAG TO YOUR PACK, SADDLE, BOAT OR TENT

Appendix C: Visitor Handout for Backcountry Users



The following information is intended to provide backcountry users with a general overview of the backcountry and the resources available to them. This information is not intended to be a substitute for the more detailed information available in the backcountry user's guide.

The backcountry is a vast and diverse area, and the resources available to backcountry users are also vast and diverse. This information is intended to provide backcountry users with a general overview of the backcountry and the resources available to them.

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Using the Wilderness

Most visitors to Craters of the Moon see the monument from their car and the short hiking trails along the Loop Drive. Doing so acquaints them with only 15% of the monument. The remaining 43,243 acres are seldom visited, yet there are few places in America where wilderness is so easily accessible.

The Wilderness Act of 1964 defined wilderness as "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." The Act recognized that wilderness

provides outstanding opportunities for solitude and a primitive type of recreation. Craters of the Moon contains wilderness in the truest sense of this definition. It is a vast plain of lava flows dotted with spatter cones,

fissures, lava tubes, and cinder cones. You will have the sense of being truly alone as you explore the seemingly endless volcanic terrain along the Great Rift.



Along the Trail

The wilderness trail leads four miles from the Tree Molds parking lot to the Sentinel. The Lava Trees and Echo Crater both make good day hike destinations. Most backpackers spend the night at Echo Crater, three miles from the trailhead, but there are also camping opportunities at the Sentinel and beyond.

Begin at the Tree Molds parking lot. Walk back along the road approximately 75 yards to a trail on the right. You will hike over Broken Top cinder cone, passing through stands of antelope bitterbrush and rubber rabbit-brush. The trail then enters the cool shade of a limber pine grove before descending onto the most recent lava flow in the monument.

At this point you may detour cross-country to Buffalo Caves. Approximately 50 yards beyond where the trail hits the lava flow at the base of Broken Top, watch for a large pile of rocks (cairn) on the right of the trail. Follow the cairns along the base of Broken Top for 100 yards to reach the cave entrance. In the cave wear a helmet or hat to protect your head and carry a flashlight. It is not wise to enter caves alone. Backtrack to return to the wilderness trail.

The trail continues past Big Cinder Butte, which rises 800 feet above you. A half mile beyond Big Cinder, look for a series of lava trees and fissures west of the trail. The trail winds between Coyote and Crescent Buttes

to Echo Crater. Be sure to climb to the rim for a spectacular view of the row of cinder cones that mark the Great Rift. From the top, it is an easy walk down the south side of the cone. You can go into the crater and find protection from the sun and wind under the limber pines.

The hiking trail becomes less distinct beyond Echo Crater, but can be followed as far as the Sentinel, where it disappears altogether. You can travel cross-country beyond that point; however, dense shrubs and uneven lava make the going slow and sometimes unpleasant. Wear long pants for bush-whacking or your legs will get shredded!



Minimum Impact Camping

In order to restrict human impact to a limited area, please camp at Echo Crater if at all possible. If you do select other campsites, use them for only one night and then move on. Strive to leave no trace of your presence. Pack out all trash. Bury human waste six inches deep in cinder areas. Do not move large rocks, logs or other objects at your campsite. If you clear the ground to create a smooth sleeping surface, return it as closely as possible to its original condition. Try not to trample plants at your campsite or when hiking cross-country. Using care during your visit will leave the wilderness in pristine condition for the next visitors.

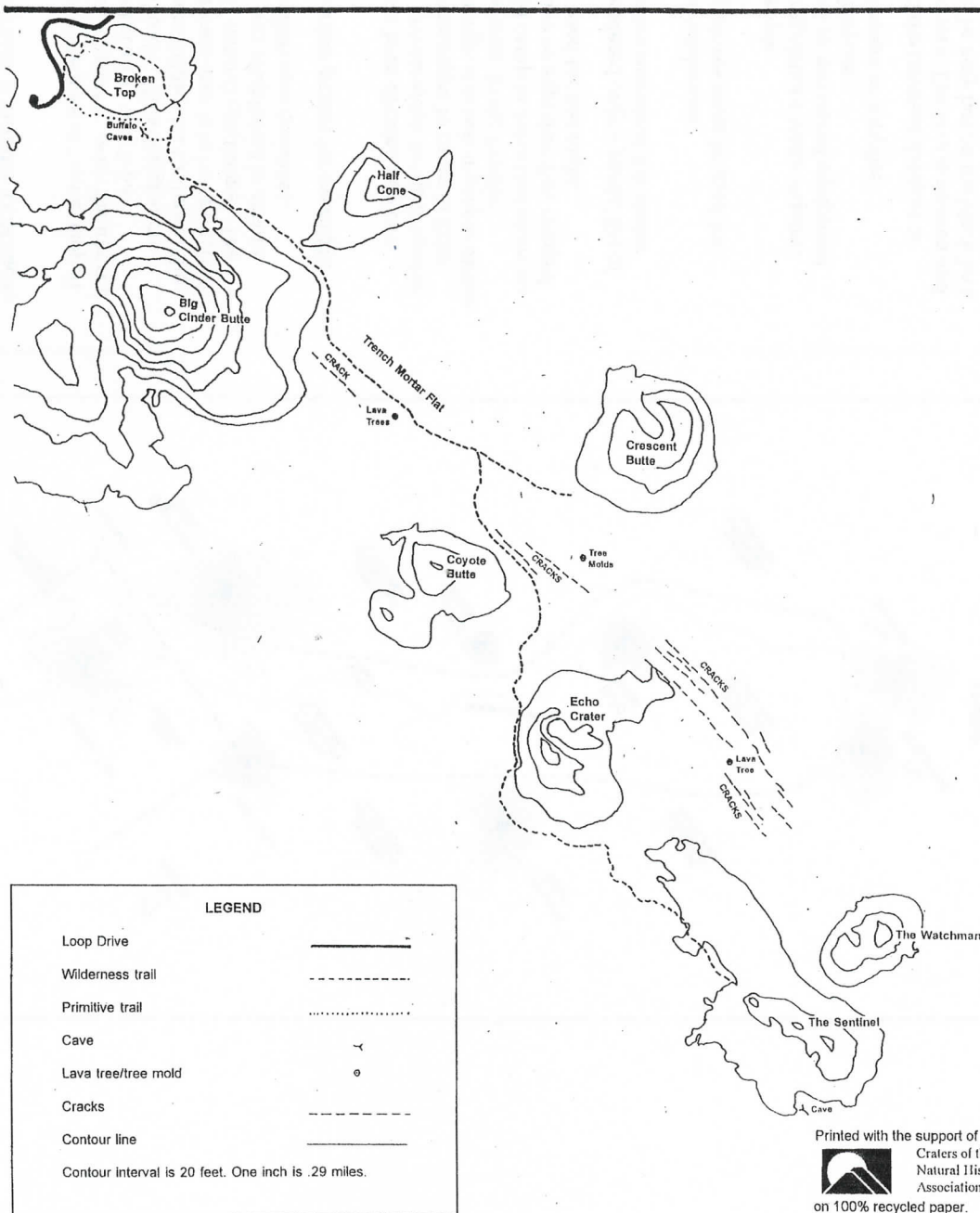
Safety

There are dangers inherent in the volcanic terrain. The lava is uneven and sharp. Cuts and abrasions from falling on the lava are the most common injuries at Craters of the Moon. Wear sturdy shoes and watch your step, especially when travelling off-trail.

Summer weather is hot, dry, and windy. Temperatures may reach the high 90s and afternoon winds of 15 to 30 miles per hour are common. There is no surface water in the wilderness. Carry at least a gallon of water per person per day. There is little shade along the trail, so sunscreen and a hat are a necessity.

Regulations

- A free permit is required for overnight trips into the backcountry and can be obtained at the visitor center. This enables the National Park Service to monitor how many people are using the wilderness, to inform them of regulations, and to make sure that they return safely.
- Pets are not permitted in the wilderness.
- No wood fires. Use backpacking stoves for cooking.
- Bicycles and other mechanized equipment are not allowed.



On October 23, 1970, Craters of the Moon Wilderness became the 82nd area designated as wilderness. It includes 43,243 acres of volcanic landscape.

The 1964 Wilderness Act defines wilderness as "undeveloped Federal land retaining its primeval character...with the imprint of man's work substantially unnoticeable...which has outstanding opportunities for solitude". This designation carries special management responsibilities for Craters of the Moon. The act states that a wilderness area is to be "protected and managed so as to preserve its natural conditions". The Backcountry Use Permit System was established to ensure visitor safety and to protect the wilderness resources.

Permits: Each party must obtain a free permit for overnight use.

Camping: The wilderness area has been divided into two opportunity classes (see map on reverse side). In the Primitive Opportunity Class visitors are encouraged to camp in Echo Crater. To minimize resource damage, it is best if people utilize these sites rather than create new ones. In the Pristine Opportunity Class visitors should camp in areas that show no sign of previous campers and leave no sign that they camped there. Campsites should only be used for one night.

Regulations: This should be considered only a partial list of regulations. For detailed information inquire at the visitor center.

- Pets are not permitted in the wilderness.
 - No wood fires. Backpacking stoves must be used for cooking.
 - Party size is limited to 12 people.
 - For horse and pack animal regulations make inquiry.
 - No visitor use of mechanized or motorized equipment is permitted. This includes bicycles.
 - Visitors may not cache equipment or supplies.
- Safety:** Visitors must understand the inherent dangers of crosscountry travel in volcanic terrain. The lava is uneven and sharp. Summer temperatures can be very hot on the black lava. Drinking water is not available in the wilderness area.
- Hikers should carry at least two gallons of water per person per day.
 - Visitors are advised to take a topographic map and compass.

Minimum Impact Techniques: While you are a guest in the wilderness area please remember the familiar advise: "Take only pictures; leave only footprints".

- If you pack it in, pack it out.
- Human waste will be buried 6 inches deep in cinder areas using the "cathole" method.

