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DRAFT

CLIMBING MANAGEMENT PLAN

AND ENVIRONMENTAL ASSESSMENT

CITY OF ROCKS NATIONAL RESERVE

July 1995

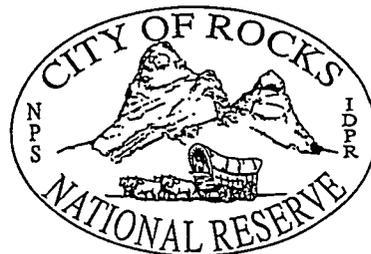


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INTRODUCTION

For decades, people have been drawn to the City of Rocks to experience a sense of freedom, inspiration, contemplation, and tranquility by immersing themselves in a unique natural and historical setting. To some, the establishment of a National Reserve in 1988 was an assurance that those opportunities would be protected for decades and centuries to come. Others saw the Reserve as a threat to their freedom and, in some cases, to their lifestyle.

Between 1990 and 1995, great effort has been put into formulating a vision of the future of City of Rocks. In less poetic terms, planning for the future protection of the resources and values of City of Rocks has been the primary mission of the Reserve's management team.

Those who have tracked the progress of the National Reserve are aware of the many planning documents which are in various stages of development for City of Rocks. Those who have tracked the climbing issues on a national scale know that rock climbing is no longer an unnoticed use on public lands and hence, a climbing management plan for City of Rocks, as in so many other national park areas, was inevitable.

The Reserve's importance to rock climbing, as well as its diverse landownership, jurisdictions, and myriad of other public and private uses, warranted a plan to guide Reserve management, in cooperation with all of the involved parties, through decisions on how best to conserve those resources which are intrinsically associated with rock climbing. The development of this climbing management plan for City of Rocks provides specific guidance to Reserve management on the appropriate level, type and location of climbing use within the Reserve, and its implementation will assist Reserve managers in meeting part of their legislatively mandated responsibility to manage recreational use within the Reserve.

This Draft Climbing Management Plan and Environmental Assessment is derived from an earlier version known as the "Interim Climbing Management Plan" (ICMP). The ICMP was developed in 1991, with the assistance of a highly dedicated 13-person public working group. Amongst this group were climbers, local landowners, natural resource specialists, and also representatives of the Idaho State Historical Society, prominent environmental organizations, and local and national climber's coalitions.

The ICMP was to guide climbing management in the Reserve prior to the completion of the Comprehensive Management Plan and Environmental Impact Statement (the concept document which outlines the preservation, use and future general management of

the National Reserve). However, both the ICMP and the Comprehensive Management Plan process reached an impasse over the management of public use on the historic Twin Sisters formation. Prior to the completion of either document, it was decided that a study was needed in order to obtain adequate information to determine the appropriate long-term management of Twin Sisters. Though this delayed the completion of the climbing plan beyond the interim period, some of the management tasks identified in the ICMP were carried out and major elements of the earlier plan are incorporated into this draft plan.

With the Twin Sisters Resource Study and the Final Comprehensive Management Plan completed, the Climbing Management Plan and Environmental Assessment can now be finalized. In addition to the Proposed Action, three other alternatives and their related impacts for climbing management are examined in the Environmental Assessment; a No Action Alternative, a Permit System Alternative, and a Regulatory Alternative.

The public is invited to review this draft document and submit written comments and concerns no later than Friday, September 15, 1995. Comments should be addressed to:

Superintendent
City of Rocks National Reserve
P.O. Box 169
Almo, Idaho 83312

The proposed action contained within this draft Climbing Management Plan is consistent with the recommendations made in the City of Rocks Comprehensive Management Plan. If, based upon the assessment of the impacts of the various management alternatives, and public input during the draft review period, any changes are contemplated in the proposed action, these changes would need to be reflected in the Comprehensive Management Plan Record of Decision, and would require further consultation with the Idaho State Historic Preservation Officer and the Advisory Council on Historic Preservation.

The Climbing Management Plan is, quite frankly, the beginning, rather than the final product. Rock climbing use is changing at City of Rocks. This plan must also evolve over time and be reviewed frequently to assure that it is useful, not only to management, but also to climbers and other Reserve users as well.

Numerous terms specific to technical rock climbing are used throughout this plan. Please consult the glossary in Appendix E for definitions of unfamiliar terms.

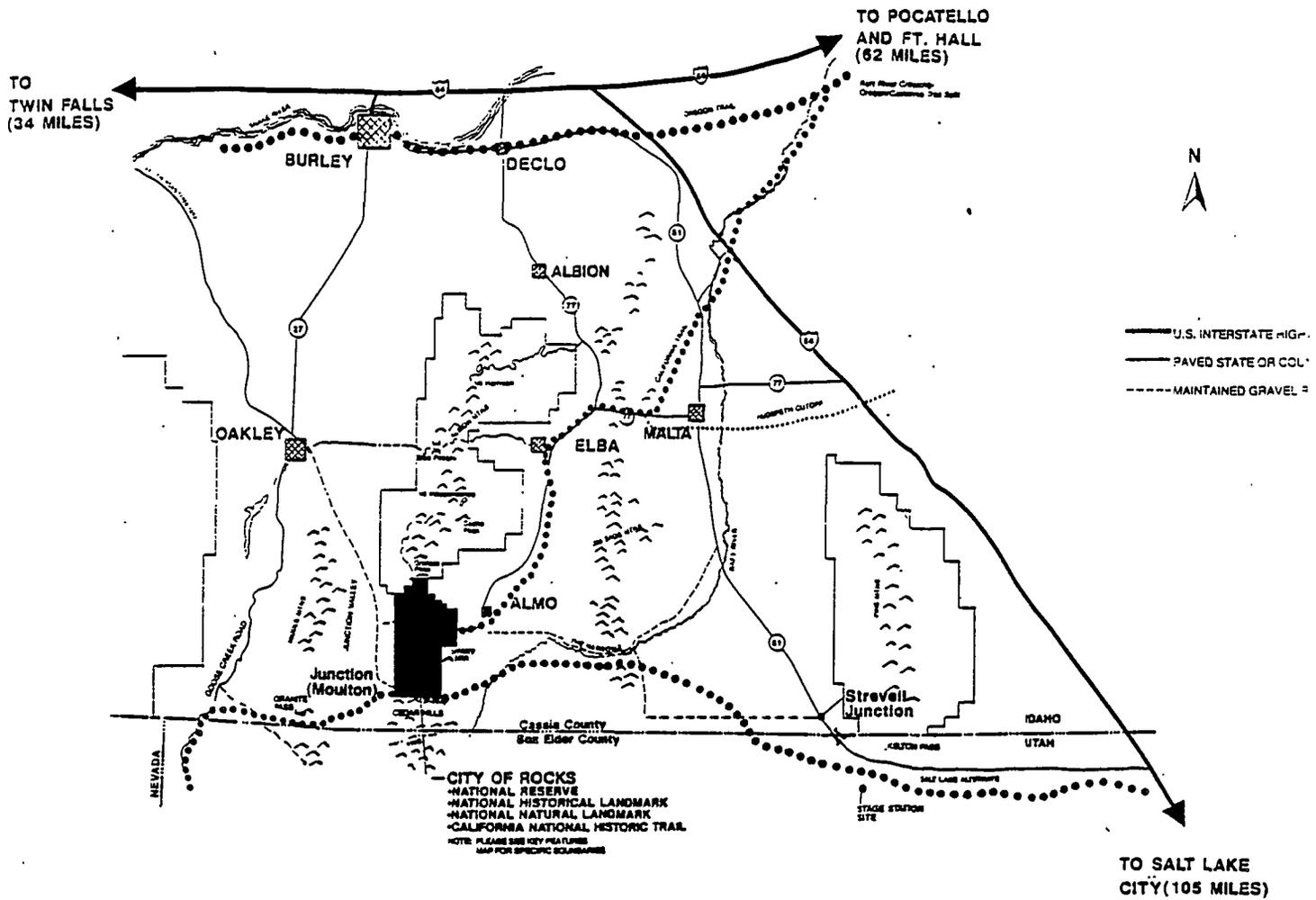
VICINITY

CITY OF ROCKS NATIONAL RESERVE

United States Department of the Interior

National Park Service

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PURPOSE AND NEED

Rock climbing is currently one of the most popular recreation activities at City of Rocks National Reserve. Beginning less than a decade ago, the area experienced a rapid growth in popularity and climbing route development. As a result of this surge of new route activity, City of Rocks gained renown for sport climbing, while still offering classic, though less celebrated, crack climbs and traditional face climbs. With the establishment of the National Reserve in 1988, the City of Rocks managers recognized the need to develop an operational plan to ensure the protection of the Reserve's cultural and natural resources while allowing for the continued enjoyment of rock climbing. Upon approval, this Climbing Management Plan also helps to implement a congressional provision of Reserve legislation to "...manage recreational use".

The purpose of the Draft Climbing Management Plan is to determine (1) what is the appropriate level and type of climbing use within the Reserve; (2) what, if any, types and levels of impacts associated with climbing in different areas of the Reserve are acceptable and do not impair park resources or result in a derogation of park values; (3) what climbing practices are used and are necessary and appropriate at City of Rocks, and what their associated impacts are; and (4) based on these factors, along with other management considerations, what levels and kinds of mitigating management actions are necessary to assure the long-term protection of park resources and values, and retention of the overall visitor experience.

The development of the Draft Climbing Management Plan and the subsequent implementation and future revision are intended to provide a forum for public involvement and collaboration. The management of City of Rocks National Reserve considers the long-term partnership with climbers and others in the recreational and environmental and historic preservation communities to be a critical component of an effective climbing management program.

AUTHORITIES, POLICIES & GUIDELINES

City of Rocks is a unit of the National Park System. When Congress established City of Rocks as a National Reserve, it directed the Secretary of the Interior to manage the Reserve in cooperation with state and local governments. Currently, Idaho Department of Parks and Recreation and the National Park Service cooperatively manage City of Rocks National Reserve. Congress also specified that management and administration of the Reserve should ultimately be transferred to the state or an appropriate local governing body. The transfer of management and

administration to Idaho Department of Parks and Recreation will occur in 1995. However, the National Reserve will remain a unit of the National Park System and under NPS oversight responsibility.

Public Law 100-969, which created City of Rocks National Reserve specifies that the area is to be administered subject to the provisions of the 1916 Organic Act, which established the National Park Service. The Organic Act specifies that units of the National Park system are to:

- * *conserve the scenery and the natural and historic objects and the wild life therein [and] to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.*

Public Law 100-969 <Section 202(a)> further states that City of Rocks is established as a National Reserve in order to:

- * *preserve and protect the significant historic and cultural resources*
- * *manage recreational use*
- * *protect and maintain scenic quality*
- * *interpret the nationally significant values of the Reserve.*

While conservation of resources is of primary importance, the National Park Service encourages recreational activities that do not involve or result in:

- * *inconsistency with the enabling legislation or proclamation, or derogation of the values or purposes for which the [Reserve] was established*
- * *unacceptable impacts on visitor enjoyment due to interference or conflict with other visitor use activities*
- * *consumptive use of resources*
- * *unacceptable impacts on resources [natural and cultural] or natural processes*
- * *unacceptable levels of danger to the welfare or safety of the public, including participants*

This guidance is found in the 1988 National Park Service Policies which recognizes mountaineering and rock climbing as generally

allowable activities on park lands. Determinations of when and where on federal land climbing may be allowed are subject to provisions of Title 36 of the Code of Federal Regulations 1-5 & 7, which includes the Superintendent's discretionary authority (36CFR 1.5). Because of the different land ownerships within the boundaries of City of Rocks National Reserve, rock climbing, like other visitor activities, is, in some cases, subject to the provisions of Idaho state law, Idaho Parks and Recreation Rules, Cassia County ordinances or the prerogatives of private landowners.

In a memorandum from the Washington Office of the National Park Service (July 19, 1991), each park area with climbing activities was instructed to develop a Climbing Management Plan. The Pacific Northwest Regional Office of the National Park Service subsequently required that Climbing Management Plans be drafted in several park areas within the region, including City of Rocks National Reserve. More recently, the National Park Service has suggested the promulgation of service-wide climbing-specific regulations. Eventual new federal regulations or field directives pertaining to climbing management in national park areas would be applied at City of Rocks National Reserve.

The City of Rocks Comprehensive Management Plan (1995) will provide the direction under which the National Reserve will be managed in the future. It also defines the parameters within which the Draft Climbing Management Plan must ensure the protection of the Reserve's natural and cultural resources while allowing for the continued enjoyment of rock climbing.

City of Rocks National Reserve encompasses several special area designations which preceded the establishment of the Reserve and provide the emphasis for the Reserve's management responsibilities for the protection of significant resources and values. In 1964, most of City of Rocks was designated as a National Historic Landmark because of its relationship to the California Trail and the history of American westward migrations. In 1992, the California National Historic Trail was designated as a component of the National Trails System for the purpose of identifying and protecting the historic route and its historic remnants and artifacts for public use and enjoyment. In 1974, City of Rocks became a National Natural Landmark because of its geology which includes some of the oldest rocks in North America. In 1983, a Research Natural Area was established within the present Reserve boundary for the principal purposes of preserving the special area for geologic and biological research.

Other legislation pertinent to the management of City of Rocks National Reserve includes the American Antiquities Act of 1906, the National Historic Preservation Act of 1966, the National Environmental Policy Act of 1969 (NEPA), and the Archeological Resources Protection Act of 1979.

GOALS AND OBJECTIVES OF THE DRAFT CLIMBING MANAGEMENT PLAN

Climbing is, and will continue to be, an important recreational activity at City of Rocks. The overriding goal of the Draft Climbing Management Plan is to provide a management scheme which complements the City of Rocks Comprehensive Management Plan and Resource Management Plan, and which provides for the continued enjoyment of rock climbing in the National Reserve. This is supported through the following goals and objectives:

- I. Provide for the protection and preservation of historic properties and ensure that the Reserve's significance as a National Historic Landmark is not adversely affected by climbing activities.
 - 1) Develop the guidelines necessary to ensure that historic inscriptions and other cultural resources are not physically damaged as a result of climbing activities.
 - 2) Develop the guidelines necessary to protect the integrity of significant cultural resources, which includes the experiential aspects of the historic setting, the association between the historic event and the historic property, and the feelings which these aspects evoke.
 - 3) Ensure that climbing educational or interpretive programs address the protection of cultural resources and values in the Reserve.
- II. Manage climbing so that impacts on natural resources (soils, vegetation, rock, wildlife, air and water quality, etc.) are minimized.
 - 1) Develop guidelines necessary to ensure that natural resources are not degraded significantly. The level of impacts allowed should be determined by some management process (such as "Limits of Acceptable Change").
 - 2) Ensure that climbing educational or interpretive programs address natural resource protection in the Reserve.
- III. Preserve the diversity of climbing experiences which currently exist at City of Rocks within the provisions that are enumerated by this and the Comprehensive Management Plan.
 - 1) Develop guidelines which will allow routes with either fixed or removable protection and anchors to exist.

- 2) Develop guidelines which will allow opportunities for climbing experiences ranging from more social settings to solitude.
- IV. Prevent the proliferation of fixed anchors which results in unacceptable impacts on Reserve resources.
- 1) Establish and implement a policy regarding bolting and other fixed protection for climbs at City of Rocks (consider such things as equipment used, installation, maintenance, existing or potential cumulative impacts)
 - 2) Establish a policy and implementation process regarding new route development in the Reserve (consider such things as locations, density, diversity of route style and climbing experiences, as well as existing or potential cumulative impacts).
- V. Encourage continued partnerships with the climbing community to assist City of Rocks management with climbing-related issues.
- 1) Provide for consultation between reserve managers, climbers, private landowners, the environmental community, the historic preservation community and others.
 - 2) Reduce, resolve, and prevent conflicts between reserve users, management, and private landowners by establishing a process for ongoing communication between these parties.
- VI. Manage the regulation of climbing activities to the extent necessary to protect resources.
- 1) Develop an educational program which promotes minimum impact practices among climbers.
 - 2) Provide opportunities for involvement of climbers in cooperative projects with City of Rocks to mitigate natural and cultural resource impacts.
- VII. Allow opportunities for commercial guiding within the Reserve.
- 1) Establish equitable guidelines for commercial guiding activities.
 - 2) Establish guidelines to ensure that commercial guiding will be in compliance with appropriate laws and regulations and the protection of resources and values for which the Reserve was established.

HISTORICAL PERSPECTIVE

There is evidence that native people have inhabited this area, South Central Idaho, for more than 10,000 years. The Northern Shoshone, who inhabited City of Rocks when American emigrants arrived, had used the area for more than 400 years. The City's first documented non-Indian visitors were Hudson's Bay Company trappers in 1826. In 1842, Joseph R. Chiles located the section of the California Trail which passes through City of Rocks and travel along this corridor began one year later. This trail was used by most of the pioneers bound for California and nearly all of the 49ers who traveled overland to the California gold fields. It was one of these emigrants who named the area "City of Rocks", which gained fame as an attraction along the trail. The use peaked in 1852 when some 52,000 travelers passed over the California Trail. The overgrazing of lands along the trail and the depletion of game by the emigrants eventually led to conflicts with the Native Americans, who by the late 1860s were forced to resettle on the reservations.

Following the decline of California-bound emigration, the route established by the Salt Lake Cutoff evolved to serve the Boise-to-Kelton stage and freight traffic until the early 20th century.

In the mid-1870's, the area began to be settled. Cattle ranching began in 1875 and dry-land farming started before 1900. After 1916, increased aridity and economic conditions ended farming, and farms were consolidated into ranches. Lands that were not settled remained in federal or state ownership.

In 1964, the "City" was designated a National Historic Landmark. The designation recognized that the area contains some of the best preserved segments of transcontinental wagon routes in the country, numerous rock formations bearing pioneer inscriptions or serving as navigational landmarks, and a few surviving structures built by the early settlers. In 1974, the area was also designated a National Natural Landmark in recognition of the areas unique geology, which includes some of the oldest rocks in North America. In 1988, Congress decided to protect these historical and geological features by creating the City of Rocks National Reserve.

DESCRIPTION OF THE RESERVE

City of Rocks National Reserve is approximately 14,300 acres in size and includes over 9500 acres of public land. The Reserve rises from about 5650 feet in low, shrubby basins where Circle Creek meets the eastern Reserve boundary, to 8867 feet at the summit of Graham Peak in the north. Total relief is 3217 feet.

CLIMATE

City of Rocks National Reserve has a semi-arid climate characterized by low to moderate precipitation, great extremes in both daily and seasonal temperatures, and low relative humidity.

PHYSIOGRAPHY

The Reserve is in the southern part of the Albion mountains. Much of City of Rocks is directly tributary to the Raft River through easterly flowing intermittent streams.

GEOLOGY

The Albion Mountains are part of one of approximately two dozen Cenozoic metamorphic core complexes of the North American Cordillera.

The landscape of City of Rocks has been sculpted from the upper parts of the Almo pluton, one of four intruded segments of the Cassia batholith in the Albion Range. The pluton is composed of two granitic-type rocks, quartz monzonite and granodiorite, which commonly occur together elsewhere in the world and are collectively referred to as adamellite. The Green Creek complex is the basement rock of the Albion Range and is predominantly granitic gneiss. The contact between the pluton and gneiss is observable on the south side of the ridge separating City of Rocks from Castle Rocks, on the west side of Smokey Mountain, and along the west side of the row of pinnacles from Pinnacle Pass northward through the saddle between the Twin Sisters. The Green Creek complex is absent from the western part of the reserve where the Almo pluton has intruded through it and into the Elba Quartzite. The Green Creek complex has been dated at about 2.5 billion years, which would make this one of the oldest known rocks in the western United States.

The Green Creek complex is unconformably overlain by the Elba Quartzite. The quartzite is more resistant to chemical weathering than the adamellite and forms the capping layer on most of the ridges surrounding the City of Rocks. Volcanic deposits of quartz latite and rhyolite cap part of the ridge along the western boundary south of Emery Canyon.

The most notable landscape feature of the Reserve is the abundance of prominent, steep-sided, small-scale, granite-gneiss domes that form by granular disintegration along joints. Most have formed in the Almo pluton, but some also occur in the gneiss of the Green Creek complex. Many rocks were further shaped by weathering and case-hardening. The adamellite has eroded into a fascinating assortment of shapes, some as high as 500 feet.

No evidence of glaciation is noted within the Reserve, but has

been found in higher portions of the range farther to the north.

SOILS AND SOIL EROSION

The majority of mountainside soils (slopes greater than 20 percent) are shallow (less than 20 inches to bedrock) and composed of very gravelly or cobbly loam or coarse sandy loam with large rock fragments exposed at the surface. The basin soils are moderately to very deep (greater than 60 inches to bedrock) and composed of loam or sandy or gravelly loam.

The majority of soils in the Reserve are highly erodible. Wind erosion potential is moderate for some soils in the Reserve. Water erosion hazard is severe for most mountainside soils. Soil erosion is greatest near roads and trails on steep slopes and near intermittent stream channels.

WATER RESOURCES

Surface water is limited to a few small headwater streams and springs and is generally used for agricultural purposes. Little is known about the status of ground water in the Reserve.

Because most of the soils in the Reserve are highly erodible, several severely eroded areas contribute sediment to streams during high flows corresponding to storms and spring snowmelt. High stream sediment and associated turbidity can negatively affect stream organisms both in and outside the Reserve far downstream from the source of particulate matter.

Cattle concentrated in riparian areas accelerate soil erosion and contribute fecal coliform to streams and springs in the Reserve.

WETLANDS AND FLOODPLAINS

The creeks and drainages of the Reserve are subject to flooding during summer months when thunderstorms can produce large quantities of precipitation in a localized area. The hazards from these summer floods are considered minimal though the environmental consequences can be severe.

Many small wetlands exist in the Reserve, typically in riparian areas next to streams and springs. Because of the aridity of the region, these wetlands, although quite small, are important resources for many forms of life.

VEGETATION

Today most of the plant cover, except vegetation on steep, rocky exposures, is considerably changed from its natural condition. The changes over time were caused by a combination of man-induced

factors, including intense grazing, dryland farming, fire suppression, brush control, seeding, development of roads and trails, and camping.

The dominant plant communities in the Reserve include pinyon/juniper woodlands and forest, conifer/aspen woodlands and forest, riparian scrub and herbaceous wetlands, big sagebrush and grasslands, mixed scrub, and mountain mahogany scrub, high elevation meadows, and other unvegetated areas. The Reserve contains the northernmost range of the single-leaf pinyon pine. This change in biological diversity in a relatively small area is attributable to differences in elevation, slope, aspect, soil type and available water, and provides habitat and forage for a variety of wildlife and domestic animals. Vegetative cover is crucial to protecting slopes from soil erosion and gully formation in this gussic granite terrain.

Preliminary field surveys have discovered the presence of three rare and sensitive plants. They are Simpson's hedgehog cactus, narrow-leaved Indian paintbrush, and Kruckeberg's swordfern. There are no known federally listed or candidate plant species within the National Reserve boundaries.

AIR QUALITY

City of Rocks has been designated a class II area for purposes of controlling increases in air pollution under the Clean Air Act. Due to the low population density and lack of large emission sources near the reserve, air quality is generally very good. Air quality data for the Reserve has not been systematically collected. However, air quality monitoring in the region shows a trend in deterioration which is probably reflective of City of Rocks as well. Notable air quality related values at City of Rocks are the visibility and the scenery.

WILDLIFE (and Threatened and Endangered Species)

The diverse habitat of the Reserve supports a large variety of mammals, birds, reptiles, and invertebrates. Streams in the Reserve provide only marginal fish habitat and are not known to support any fish. The effect that recent droughts, apparent loss of wetlands, and land uses in the area may have had on the occurrence of fish has not been evaluated.

A partial list of mammals in the reserve includes mountain lion, mule deer, coyote, bobcat, badger, porcupine, red fox, cliff chipmunk, mountain cottontail and pygmy rabbits, blacktail jackrabbit, northern grasshopper mouse, merriam shrew, several species of voles, and a variety of rats.

According to the U.S. Fish and Wildlife Service, there are no federally listed threatened or endangered species in the City of

Rocks area. Two candidate species of hawk have been identified, however: the Ferruginous and Swainson's (Buteo regalis and Buteo swainsonii, respectively). A third candidate; Townsend's big-eared bat, may also occur in the Reserve. There are species recognized by BLM and IDFG as "sensitive" and "species of special concern"; these include the bobcat and kit fox.

SCENIC QUALITY

Scenic quality is considered excellent when views contain high degrees of unity, vividness and visual intactness (naturalness). Seven viewpoints in the Reserve were identified as having these outstanding qualities. Outstanding viewpoint maps and descriptions appear in the City of Rocks Comprehensive Management Plan.

The variety of textures, colors and shapes displayed on the natural landscape also contributes considerably to the Reserve's scenic quality.

NATURAL QUIET

The natural quiet of the remote reaches of the Reserve is valued by visitors as a quality to be experienced and as a condition that enhances opportunities to hear natural sounds and to view wildlife. It is also reflected in the area's historical full name: The Silent City of Rocks.

SPECIAL AREA DESIGNATIONS

City of Rocks is a unique natural area which gained the designation as a National Natural Landmark. It is nationally significant because it contains the best examples of bornhardt rock formations in the region, and probably the country, and possesses considerable natural scenic beauty.

The designated Research Natural Area is a 312 acre area located among rock outcrops north of the Circle Creek basin. The unique and special characteristics of the site are the outstanding examples of bornhardt rocks formed by exfoliation processes and the high degree of habitat and floristic diversity. The area contains the northern limit of the pinon-juniper vegetation type and an example of a sagebrush steppe vegetation type in a rare natural condition.

City of Rocks was designated by the Secretary of the Interior as a National Historic Landmark because of its relationship to the California Trail and the history of American westward overland emigration during the 1840s and 1850s. Designation as a National Historic Landmark requires that the historic property meet the criteria for listing on the National Register of Historic Places. A property must be nationally significant and retain exceptional

integrity as defined by historic qualities of location, design, setting, materials, workmanship, feeling and association.

City of Rocks became a major landmark and principal stopping place along the California Trail and the Salt Lake Alternate route. Many emigrants traveling through City of Rocks recorded their impressions of the intriguing granite outcrops. In keeping with the National Historic Landmark designation, City of Rocks has retained its association, or direct link, between the physical features and the important historic events of the mid-1800s. City of Rocks provides opportunities to experience a segment of the California Trail in a setting that also retains the aesthetic and historic feeling of the original migration era.

HISTORIC PROPERTIES

City of Rocks includes approximately nine miles of California National Historic Trail and Salt Lake Alternate route corridors comprising some of the best preserved remnants of overland emigrant routes in the nation. Within the National Historic Landmark boundaries, and specifically mentioned in the Landmark designation are: 13 register rocks bearing emigrants inscriptions; six small segments of the California Trail identified as maintaining their original rut or defile contours; the prominent spires of the Twin Sisters formation; and Circle Creek basin, the principal emigrant encampment site at City of Rocks. A large portion of the cultural resources within the boundaries of the Reserve are currently on private property.

The Twin Sisters, also historically referred to as "Spire Rocks", "Steeple Rocks" or "Twin Mounds" (among other names), became a navigational point of reference within City of Rocks. The formation was specifically mentioned in some of the travellers' diaries because of its location at the junction of the emigrant trails and its prominence within the City of Rocks skyline.

The views seen from the emigrant trails are a critical component of the Reserve's integrity. They provide a sense of the emigrant experience and were important historically in aiding the emigrant's passage through City of Rocks and Granite Pass. Thus, the "viewshed", or the extent of the views seen from the two emigrant trails, is a significant feature of the Natural Historic Landmark.

There are many other historic properties which not only serve as examples of significant themes in the historic continuum of the National Reserve, but also contribute to the ambience of the Reserve's historic rural setting. The scenic quality of the American West is therefore considered a significant cultural resource to be preserved within City of Rocks National Reserve.

Archeological surveys and testing carried out over the past four

years have revealed more than forty prehistoric sites associated with a variety of subsistence and hunting activities within the Reserve's boundaries.

The importance of City of Rocks to Native American groups, beyond known food gathering activities, can be neither supported or dismissed at this time. Research is continuing with an ethnographic overview funded by the National Park Service, beginning in 1995. The study may provide information on whether Native American groups relate spiritual values to City of Rocks and prominent features, such as Twin Sisters.

VISITOR USE LEVELS

The statistics for City of Rocks National Reserve show that visitation has grown from approximately 39,000 visitors in 1988, 98,000 in 1992, to approximately 105,000 in 1994. Most of use of the Reserve occurs from May through October, with June typically being the busiest month.

Based on a study conducted by the Bureau of Land Management in 1987 and a visitor use survey conducted by the Cooperative Park Studies Unit at the University of Idaho in 1991, the heaviest visitation occurs on the weekends. Visitors during the week are usually climbers. These studies also revealed that rock climbers represent the highest percentage of the Reserve's recreational users.

In addition to rock climbing, City of Rocks encompasses a number of other uses. These include sightseeing, camping, hiking, picnicking, photography, outdoor education, horseback riding, mountain biking, motor-cycling, cross-country skiing, snowmobiling, livestock grazing, and hunting.

CLIMBING HISTORY

The history of climbing at City of Rocks is best understood in the context of the national and international trends in the development of climbing purposes and methods. Documented climbing in America stems from the early 1800's. The earliest climbs were typically associated with the exploration of the west, primarily for mapping and scientific purposes. Pioneers using the California Trail were probably the City's first non-Indian climbers.

Climbing for recreational purposes became established in the United States around 1905 in the form of mountaineering: the ascent of summits. By the early 1930's, the sport diverged to create a sub-sport, rock climbing - the ascent of rock faces. After World War II, pitons were the primary means of protection, and routes were mostly limited to cracks. Hand-placed expansion bolts were also used during the post-war years, mostly to protect blank sections between discontinuous cracks.

By 1960, there were an estimated 2000 "active climbers" (experienced climbers who climb regularly) in the United States and climbing had evolved a clear, but informal, set of stylistic and ethical "rules" which were widely accepted. The rules dictated that an ascent of a "line" - the particular crack or weakness system in the rock - be started from the ground. During first ascents, routes were "cleaned", meaning that loose rock,

dirt, and vegetation were removed for safety reasons. The questionable security of pitons and other hardware placed for the climber's protection meant that falls should be avoided. It was widely thought that any weighing of the rope invalidated the ascent. Bolts, though occasionally used, were labor intensive to install and thought to detract from the "adventure" of the climb.

During the early 1960's, the first recorded roped climbing occurred at the City of Rocks, primarily by a small group of climbers from northern Utah. A climbing club, known as "The Steinfelds", and members of the Lowe family and their friends, began to visit the "City" regularly. The routes these climbers established typically followed cracks and were protected by pitons and occasionally bolts. Although there were few climbers visiting the City during this time, the Utah group was very active, establishing at least 200 routes.

By 1970, there were about 5000 active climbers in the United States. By 1985, this number had increased to about 50,000. Over this period rock climbing areas were established in nearly every state, and climbing-related businesses evolved into a \$20 million/year industry.

In the early 1970's, artificial chockstones were introduced, which quickly replaced pitons as the standard form of protection. Pitons were more difficult to use and caused much greater damage to the rock.

In reference to the rating system commonly used in the United States (5.0 being the easiest), typical active climbers in 1970 were climbing at a standard of technical difficulty of 5.7-5.8. By 1985 they were climbing 5.9-5.10. The highest rating in existence jumped from 5.11 in the early 1970's to 5.13 in the mid-1980's.

Between 1970 and 1985 there was also a slow shift in style and ethics, further contributing to the advancement in climbing difficulty. Falling became more acceptable in the 1970's, although a no-fall ascent was still considered superior. Bolts also became more accepted during this period as climbers increasingly looked to crackless rock faces for first ascents. This occurred, in part, because most cracks in popular climbing areas had been climbed by the early 1980's.

During the 1970-1985 period, climbing at City of Rocks mirrored the changes seen in climbing nationally. The number of climbers visiting the "City" grew at a corresponding pace. Initially, climbers from the local region dominated the climbing activity but by the mid-1980's, visitors from outside the region started to out-number local climbers. Up to 20 new routes were established each year between 1975 - 1985, and as in the rest of the country, the use of bolts began to gain popularity. In 1985,

a climbing guide to the area was published describing nearly 300 routes, and several articles appeared in national climbing magazines.

During the 1970's, European rock climbers began to develop different types of equipment, techniques, and "rules" in an effort to climb more physically difficult routes. By the mid-1980's, this had evolved into a sub-sport marked by three differences from the traditional American methods. First was the acceptance of rappel-placed bolts prior to the first ascent. Second was the use of battery-driven power drills to place bolts, which was unheard of in the U.S. Third was the acceptance of a new "rule" that allowed a climber to practice individual moves with tension from the rope prior to the free climbing attempt.

These developments eliminated the risk associated with placing protection on lead and increased the efficiency of practicing moves to overcome difficult sections of the route. Consequently, by the mid-to late 1980's, Europe was known for the best climbers and the hardest routes in the world.

Stimulated by competition, some Americans began to practice the European methods (which became known as "sport climbing") in the mid-1980's. Many American climbers preferred the traditional American methods (commonly referred to as "traditional climbing"). In several climbing areas across the country, some traditional climbers reacted violently to routes established on rappel by removing or destroying the rappel-placed bolts. Over the last few years, these types of confrontations have subsided, and sport climbing has become more accepted in America. Many climbers participate in both sport and traditional climbing, but there are climbers who identify exclusively with one or the other. Consequently, there is still controversy.

A fourth practice developed in the mid-80's which has caused considerable controversy in the climbing community. This is the practice of deliberately altering the rock to facilitate new climbs. Occasionally, climbers attempt to justify varying degrees of rock modification to allow for continued new route exploration, particularly on routes of a high level of difficulty. These alterations range from smoothing or filing sharp rock edges to "manufacturing" complete holds with power drills and chisels. Alterations commonly involve enlarging existing holds, using epoxy to reinforce loose holds, or creating new holds to connect existing features. Rock alteration is condemned by most traditional and sport climbers and is illegal in all National Park areas. Consequently, it occurs sporadically and usually secretly. A small but growing number of climbers practice rock alteration and some have begun to advocate it openly.

With the advent of sport climbing in the U.S., the number of

climbers and new routes soared, due, to a large extent, to the increased safety and convenience associated with sport climbing. Since 1990, hundreds of indoor climbing gyms have been constructed near urban areas, increasing the number of climbers and the popularity of professional climbing competitions. Indoors, dedicated athletes train for difficult rock routes on artificial holds while other people sample a facsimile of rock climbing for the first time. While there were an estimated 40-50,000 active climbers in 1985, there are now an estimated 300-400,000 active climbers nation-wide. The increased number of climbers supports four climbing magazines with a combined circulation of approximately 100,000 and an industry grossing well over \$30 million/year.

Events at City of Rocks since 1985 largely reflect these national and international trends. In 1986, climbers began rappel-placing bolts using power drills to establish sport routes. Power drills were also used to replace old, smaller bolts that had been placed on lead. On many new and old routes, chain anchors were installed on top to accommodate high levels of use. Over 300 new routes were established in 1988 and 1989, mostly protected by rappel-placed bolts. In 1991, it was estimated that approximately 3000 bolts were in place at City of Rocks (including rappel anchors). A Cassia County ordinance restricted the use of power drills at the City of Rocks in 1991. As a result, the number of new routes and new permanent anchors diminished sharply. As the "City" received increased media attention for its sport routes and quality of climbing and camping experience, the area's popularity exploded. The City of Rocks is now visited by climbers from throughout the world.

THE CURRENT SITUATION AT CITY OF ROCKS NATIONAL RESERVE

Much of the recreational use of the City of Rocks is climbing-related. Currently, those who climb at City of Rocks range from local individuals and families (from Southern Idaho/Northern Utah) to foreign climbers touring the United States. Presently, there are four professional rock climbing schools with State of Idaho Special Use Permits to instruct and guide in the Reserve. Permittees are required by State law to be licensed by the Idaho Outfitters and Guides Association, and these licenses include insurance requirements, CPR certified staff, and other stipulations. In addition, local schools, youth and safety groups use City of Rocks as a training ground. There is also a significant amount of scrambling on the more accessible rocks by non-technical climbers. Climbing at City of Rocks is attracting a greater diversity of people than ever before.

Today, 600+ established technical routes exist in the Reserve. Most climbing is concentrated on popular crags near roads. The

majority of technical climbing routes are rated 5.7 to 5.11 (Yosemite decimal system). While many routes which are primarily protected by removable hardware are also done, the principal style of climbing is on bolt protected faces. There is little climbing activity in less accessible areas of the Reserve though some exploration continues.

Though there has been concern over climbing ethics at City of Rocks, there have been very few actual conflicts between climbers. Practices such as "retro-bolting", route "chopping" and chipping of holds have been generally unacceptable to the local climbing community. Most of the bolts on climbing routes were placed on rappel, using power drills, to create technically difficult routes and to increase safety. Gymnastic chalk is widely used.

City of Rocks has been recognized as having some of the country's most difficult climbing routes. In 1990 and 1991, new route development decreased dramatically, due largely to the restriction on power drilling. All climbing-related activity at City of Rocks seems to have reached a plateau in the last few years. This change may be due, in part, to the discovery of new climbing areas located in the Southern Idaho and Northern Utah region. The shift may also be a reaction to increased regulation, limits and fees on camping or a more crowded environment than climbers experienced in the past. Some local climbers now choose to visit City of Rocks just for the day, instead of competing for the campsites now available within the Reserve. Though the perceived crowding is only a fraction of that experienced at many climbing areas, many feel that it affects the solitary nature of the City of Rocks experience.

There are significant concerns over unauthorized public use of private property and increased visitor presence at the National Reserve. Less than one third of the approximately 14,300 acres within the Reserve boundary is in private ownership. Several significant climbing rocks are on private property where access is currently prohibited. Many of the historic rocks possessing signatures of early travelers along the California Trail are also on private property. Several of these "signature rocks" also possess notable climbing routes.

The most obvious factor affecting climbing at "The City" is the increased visitor use due to knowledge of City of Rocks outside of the local area. Some of the consequences of this publicity are competition for campsites and increased erosion on trails from foot traffic.

Regulations which restrict power-drilling and rock alteration are in effect at City of Rocks. Another restriction includes seasonal closures which are annually imposed on some crags in the Reserve to protect nesting raptors. The Reserve managers have

designated and rehabilitated campsites, and many of the trails to popular formations have been stabilized or reconstructed.

As expressed during the Comprehensive Management Planning process, members of the historic preservation community, other members of the public, and agency officials from the State of Idaho Department of Parks and Recreation, the Idaho State Historic Preservation Officer, and the National Park Service consider climbing to be inappropriate activity to ensure the long term protection of particular formations associated with the California Trail, and have called for a climbing prohibition on some of the rock features, including inscription rocks and the Twin Sisters formation.

For these reasons, climbing use in these areas was recommended to be prohibited within the Foreground of the California Trail Subzone, which was established to protect resources related to the California Trail. The Twin Sisters formation is located within the California Trail Subzone. While the majority of this subzone is defined as being within the visual foreground, which is 1/4 mile on either side of the California Trail prism, because of its prominence and historical relationship to the Trail itself, the Twin Sisters formation was included within the California Trail Subzone even though the formation is physically just outside the 1/4 mile distance from the Trail prism.

There have been positive, proactive measures taken by climbers to protect and restore the environment and to protect historic inscriptions. These have been largely successful, however, more effort is needed. At City of Rocks, cooperative efforts have been made among the climbing community, the Access Fund (a national climber's coalition), and City of Rocks National Reserve managers to mitigate climbing-related impacts. Support by The Access Fund and volunteer work by climbers has contributed to trail stabilization and trailhead improvements. Several new restrooms have been constructed, and climbing information such as trail signing, safety advisories, and an information bulletin board have been established. Members of the climbing community and other Reserve users also assisted in the development of this climbing management plan for City of Rocks National Reserve. Reserve management at City of Rocks encourages an active role by climbers in resource stewardship, along with all other visitor who enjoy various recreational activities within the Reserve.

SAFETY

There are a number of safety risks associated with rock climbing. Among the causes of accidents are climber error, equipment failure and environmental conditions, such as rockfall and adverse weather. While most of the accidents are minor and go

unreported, over the past four years, there has been a yearly average of four technical climbing accidents resulting in serious injury.

In comparison to other popular areas, there have been very few rock climbing accidents at City of Rocks. This is due, in part, to the presence of large, closely spaced bolt anchors, short climbs and solid rock. Risk is an inherent aspect of climbing which climbers seek to varying degrees. Some climbers feel that closely spaced anchors detract from the feeling of challenge and risk that they prefer. The level of risk and benefit to the climber are similar to that sought by participants of other forms of risk recreation.

Climber error is the greatest cause of accidents in rock climbing. Contributing factors include inexperience and carelessness. The risk of possible human error applies to technical rock climbers as well as other Reserve users who scramble on the rocks.

First ascents or attempts with no prior knowledge of a climb usually pose higher risks. In most cases, climbers attempting new routes are very experienced. Accurate reporting of routes reduces the risks associated with the unknown on previously climbed routes.

No instances of bolt failure have been recorded at City of Rocks, although the potential will increase as fixed anchors age, or are subjected to repeated use-induced stress. The responsibility for maintaining fixed protection continues to rest on the climbing community. There has been some proactive interest by a few climbers to establish an anchor maintenance program and to establish a fund for replacement hardware. Within the guidelines enumerated in this plan, the Reserve allows the replacement of existing anchors by a group or individuals.

Both the National Park Service and Idaho Department of Parks and Recreation, who cooperatively manage City of Rocks National Reserve, recognize that climbing poses personal risk to the participants and that climbers bear the sole responsibility for their own safety while pursuing the activity. It is not the intent of this plan, nor of the implementation of any climbing management program at the Reserve, to attempt to judge or physically control safety as it relates to rock climbing, rock climbing equipment, or conditions present on any climbing routes within the Reserve. Management does have the authority, however, to close areas to the public due to specific hazardous circumstances.

**ISSUES AND IMPACTS RELATING TO CLIMBING ACTIVITIES AT
CITY OF ROCKS NATIONAL RESERVE**

Most of the climbing routes at City of Rocks are less than half a mile from a trailhead. This accessibility tends to intermingle climbers with other types of visitors. In most of the following categories, climbers, presently one of the largest populations of recreational users, appear to be causing a substantial amount of the human impact on the natural environment. As use patterns change, however, changes to the condition of the resource may become more (or less) attributable to other user groups. The mitigation of climbing-related impacts is only one facet of visitor use management at City of Rocks.

The identification of climbing-related issues and impacts in this section is based on research conducted at City of Rocks as well as some correlation to research conducted elsewhere. References to trends in the changing condition of resources at City of Rocks are primarily based on field observations and data collected since 1990. The Twin Sisters Resource Study provides baseline data and a methodology for continued resource monitoring to detect tangible climbing-related impacts on the natural resources in the Reserve. (See Appendix F)

Disturbance of Wildlife

Human presence may stress or displace wildlife during breeding, feeding or resting. Because climbers and cliff-dwelling birds use some of the same vertical space, climbing may specifically affect swallows, raptors and other birds and mammal species. The behavior of cliff-nesting birds has been shown to be affected by human presence when activity is in close proximity to nest sites, above nest sites, or of significant duration. Temporary displacement from nest sites and territorial displays have been observed at City of Rocks in response to unwelcome human presence. In response to this potential conflict, Reserve management has the discretion to invoke seasonal closures of certain rock formations to prevent human disturbance of raptors during sensitive periods, including nesting season.

Threatened and Endangered Wildlife Species

There are no federally listed threatened or endangered wildlife species in the City of Rocks area. The two candidate species of hawk may be susceptible to disturbance from the presence of climbers on the rock. The bobcat and kit fox, the two sensitive species recognized by BLM and IDFG, could also be effected by human presence and travel corridors could be interrupted. This potential impact could be attributed to the occurrence of all types of human activities in the Reserve. This includes climbing activity and climbers hiking to the routes. Currently, the

occurrence of the third candidate; Townsend's big-eared bat, has not been confirmed in the Reserve.

Disturbance of Vegetation/Erosion/Water Quality Impacts (off the rock)

Human activities in the non-developed areas of the Reserve cause a myriad of interrelated impacts including erosion, vegetation loss, and the derogation of water quality. Erosion, vegetation loss, and soil compaction are evident near roads, on trails, in camping areas, and at the bases of rock climbing routes. In some cases, the condition is severe and restoration is needed.

Climbers and other hikers in the Reserve originally used trails established by domestic stock. The trail system has been expanded by climbers for access to the rocks. Trail stabilization and rerouting have helped to mitigate the problems caused by increased use. Currently, all major trails at City of Rocks have received some degree of maintenance and a trail plan is being developed to identify future trail construction and stabilization needs.

Though most vegetation loss is caused by foot travel or livestock, in some instances, plants or trees have been unlawfully broken, chopped or sawed at the base of climbs to provide climbers easier access to routes. Reserve trail crews have also impacted vegetation in the both the establishment and maintenance of non-motorized trails within the Reserve.

Wetlands and Floodplains

Wetlands and floodplains are not effected by climbing activity specifically. The consequences of summer flooding may be more severe in some areas due to trail erosion and slope instability caused by use from various types of visitors, including climbers. The consequences may also be diminished due to trail realignment, design, and the installation of erosion control structures in areas of high recreational use.

Disturbance of Vegetation/Erosion (on the rock)

When a new climbing route is established, rock flakes, dirt, lichen, mosses and other vegetation are often intentionally removed from the rock surface along the route. Loose rock is commonly removed by climbers when it is perceived to cause a safety hazard. Route "cleaning", as it is known, is normally done by the first ascent party. In most cases, this is when the most substantial erosion or vegetation loss occurs on the rock. Through repeated ascents of a route and a climber's hands, shoes, and climbing rope coming in contact with the rock, some additional erosion and vegetation disturbance will occur, however, the rate at which this occurs has not been determined.

New route development has decreased from approximately 300 new climbs in 1988 and 1989 to less than 10 per year since 1990. As a result, route "cleaning" and associated impacts have also subsided, yet the effects on previously established routes continue to accumulate.

In some cases, during the development of a new route, rock has been purposely chipped or drilled to provide finger or toe holds. In other cases at City of Rocks, epoxy has been applied for the purpose of reinforcing holds either during or after the development of a new route. In 1991, an estimated 2% of the established routes at City of Rocks are reported to possess deliberately modified holds. These practices are prohibited in the Reserve.

Visual Impacts

The presence of a person or any article that visibly contrasts with the natural or historic scene may be considered a visual impact.

At City of Rocks, visual impacts relating specifically to climbing may include nylon slings, bolts, chains, chalk residue, or any other item left on the rock which has been abandoned or left in place to facilitate future climbing. The visual impacts of fixed equipment varies depending on location, position, color, type, etc. Most of the fixed climbing equipment at City of Rocks is not camouflaged in any way, but is generally unnoticeable to the casual observer. The presence of climbers or scramblers on the rocks may also be perceived as a visual impact to some observers.

In the interest of protecting the scenic qualities of the Reserve as well as the historic viewshed of the California Trail, a study was conducted on the Twin Sisters formation to determine the visibility of climbing and the visual impact on the appreciation of these specific values. It was found that climbers on the Twin Sisters were not immediately discernable from the California Trail corridor when the Twin Sisters were positioned in the middle ground and background from the Trail. Therefore, in terms of visual impacts, it is only the management of foreground viewsheds which will be addressed in the climbing management plan. The foreground view, as identified in the City of Rocks Comprehensive Management Plan, was determined as that which is visible within 1/4 mile on either side of the identified route of the California Trail.

Noise

At City of Rocks, excessive noise is typically attributed to low flying military aircraft, car stereos, or human voices. In climbing, noise is produced during new route development when

either hand or power drills are used to install fixed protection. Standard climbing signals are periodically called back and forth between climbing partners for reasons of safety. Noise created by groups of climbers is most common at popular crags during busy weekends. In 1991, a county ordinance was adopted which prohibits the operation of a motor vehicle, motorized toy or audio device which makes unreasonable noise considering the particular time, place, and conditions in the Reserve.

Hardware

Climbers use many different types of hardware. These can be categorized as either removable protection (i.e. nuts, cams) or fixed (permanent) protection (i.e. bolts, rappel anchors). Pitons, while no longer widely used, may be either removed or left in place on climbs.

The majority of climbs at City of Rocks are face climbs which are equipped with bolts. Rappel anchors at City of Rocks are typically two chains, 4" to 6" in length, attached to bolts. Nylon webbing is also used on rappel anchors, though not as frequently.

Bolted anchors are placed by drilling a hole and inserting an expansion bolt with a metal hanger attached. The bolt holes are usually drilled with portable battery operated drills. Currently, holes drilled to accommodate bolts are up to 1/2" in diameter and up to 4" deep.

The hardware used on climbing routes is installed and used exclusively by technical climbers. Fixed hardware is installed by the person establishing a new route and may be used (but not removed or replaced) by all subsequent climbers. Removable protection is placed and removed during each ascent. The long-term, cumulative environmental affects of using bolts and of replacing them is not known.

It is recognized that a fixed anchor is, in some cases, an essential component of the climber's safety system; in many cases, it is necessary to the pursuit of the activity. Each bolt represents a small impact to the resource. It is, however, the proliferation of bolts, facilitated by the use of power drills, and the associated impacts of new route development which has presented the greatest climbing-related threats to the natural and cultural resources and values at the City of Rocks.

Use of Power Drills

The use of power drills has permitted the relatively quick and easy placement of approximately 3000 bolts at City of Rocks since 1985.

In 1991, a Cassia County ordinance was enacted which prohibits the use of power drills without permission on public and private property in non-developed areas within City of Rocks National Reserve. This has proven highly effective in controlling the proliferation of new bolts and climbing routes. It has also provided a workable mechanism to allow the managed use of power drills for the maintenance and replacement of existing bolts, and the screening of new route proposals for resource evaluations.

Litter

Litter may cause undesirable affects on scenic qualities, human health, water quality, and wildlife. At City of Rocks, most users are sensitive to the problem of litter. Since 1990, the installation of trash receptacles in camping and day use areas has helped to curb littering. Roadside litter is still common. Litter associated specifically with climbers typically includes athletic tape and spilled gymnastic chalk.

Chalk (magnesium carbonate)

Gymnastic chalk is used while climbing to dry sweaty hands. At City of Rocks, chalk is used by nearly all technical climbers. White chalk is more difficult to detect on the light colored granitic rock, though on the darker, case hardened surfaces it can be quite visible. Natural weathering appears to remove most of the chalk except in overhanging and/or protected areas. Some studies suggest that chalk may have a negative affect on the lichen and cause a change in pH.

Human Waste

Uncontained human waste and toilet paper cause unsanitary and unsightly conditions. The problem is attributed to many types of dispersed visitor uses, including climbing. Human waste is sometimes deposited near campsites, trails, and climbing areas. As a result of the addition of new toilet facilities in the Reserve, the problem has decreased.

Special Area Designations

The responsibility of managing areas of special designation requires that the purposes, resources and values for the designation be protected. At City of Rocks, special designations have been assigned both to areas of national significance and scientific interest. Climbing, like all other uses in the Reserve, must be managed to assure the protection of these exceptional areas.

Impacts on Special Natural Areas

The National Natural Landmark boundary extends outside of the

National Reserve boundary but encompasses virtually all of the rock climbing areas at City of Rocks. While climbing in general does not appear to be threatening the resources or values for which the area was designated, monitoring of use levels and trends, as well as the natural resource conditions, is warranted.

The other issues and impacts identified elsewhere in this section must be addressed in the context of appropriate protection of the National Natural Landmark.

The Research Natural Area is managed exclusively for non-manipulative research. Climbing and all other public use is excluded unless a permit is issued for an activity which is being conducted in the interest of geologic or floristic research or education. This exclusion precludes any environmental impacts from occurring due to rock climbing, or any other recreational activity.

Impacts on the National Historic Landmark

The National Historic Landmark incorporates all but a small northern segment of the National Reserve and includes all of the components of the Reserve's cultural resources. Technical rock climbing and scrambling currently occur on some of the named features in the Landmark designation. Of critical importance, in terms of historic preservation, are the rock formations within the California Trail corridor. Some of these have only recently come into public ownership but with this acquisition, visitors now have the opportunity to walk around some of the register rocks and closely view the historic inscriptions.

Of the 13 register rocks bearing emigrant inscriptions, 10 also possess established climbing routes. Through cooperative efforts with the climbing community and the diminished popularity of the particular climbs, very little climbing currently occurs on the inscriptions rocks, though climbing and scrambling on the rocks, over the years, has resulted in cumulative adverse impacts. A few inscriptions have been damaged due to climbing traffic. Permanent climbing hardware and residual chalk are noticeable where visitors now make interpretive stops to take a close look at the emigrant names. In the particular case of the register rocks, there is the greatest potential for conflict of interpretative and recreational uses and continued damage to the historic features. Through the implementation of the Comprehensive Management Plan, climbing and scrambling will be prohibited on all inscription rocks on public land within the Reserve.

The Twin Sisters formation is another of the significant historic features associated with the California Trail within City of Rocks. It was the single most frequently identified landmark within the City of Rocks called out by California Trail emigrants

in their diaries and reminiscences, and remains a symbol of the City of Rocks to contemporary local residents. Along with the Register Rocks, the formation is one of the most important components within the Reserve's California trail corridor, which has been set aside as a separate management zone in the Comprehensive Management Plan to preserve the opportunity to experience a segment of the trail in a setting which retains the feelings and association of the original migration era. The Plan recommends that the California Trail management zone be managed exclusively to protect these cultural values, and be closed to climbing and other active recreational uses which would impact these values. This recommendation is consistent with comments of the Idaho State Historic Preservation Officer and the Advisory Council on Historic Preservation, which supported the establishment of the California Trail management zone, and the incorporation of Twin Sisters within the zone, during the consultation process conducted by the National Park Service as required under Section 106 of the National Historic Preservation Act.

The California Trail segment through the City of Rocks offers a rare opportunity to preserve a sense of the historic scene as it was experienced by the mid-19th century emigrants. It has long been a focus of preservation efforts, initially to obtain designation as a National Park System. The presence of these qualities of association and feeling were important attributes of the City of Rocks in meeting the criteria for establishing the integrity of sites proposed for designation as National Historic Landmarks. Preservation of these intangible qualities is as critical to protecting the integrity of the landmark as preserving its actual physical features.

A literature search of historic journal accounts of trail emigrants passing through City of Rocks, conducted through the Oregon/California Trail Association's COED program, identified 98 diaries in which key words associated with City of Rocks and the Twin Sisters formation appeared. Of these entries, 61 contained references associated with the Twin Sisters formation. The importance of Twin Sisters as a landmark to the emigrants approaching from either the California Trail through the City of Rocks, or from the Salt Lake cutoff, is underscored by these references. Today, the Twin Sisters continues to be viewed as a symbol of the City of Rocks by both the local community and visitors intent on recapturing the experiences of the migrants. Thus, while the Twin Sisters Resource Study found that natural and visual impacts from rock climbing and other forms of visitor recreation use on and around Twin Sisters were not significant and could be addressed through mitigation and use of various resource management techniques, comments received during the public review of the Draft Comprehensive Management Plan from the Idaho State Historic Preservation Office, the Advisory Council on Historic Preservation, the Oregon/California Trails Association,

and members of the general public strongly supported including the formation within the proposed California Trail Subzone. The foreground of the California Trail Subzone precludes climbing, camping, picnicking and other forms of active recreational use, and emphasizes the importance of preserving both the physical and experiential features of the trail experience. Establishment of this Subzone, and inclusion of the Twin Sisters, is consistent with the National Park Service's responsibility under Section 110 of the National Historic Preservation Act to preserve and protect the Significant cultural properties within its jurisdiction.

Social and Socio-Economic Impacts

A social impact is something that influences the way a person or group interacts with others or it may affect a personal experience. At City of Rocks, there have been very few user surveys and no specific sociological studies are available. Numerous public meetings regarding the Reserve have disclosed that social impacts are of great concern to most of the users and landowners. All are currently affected by the period of transition in the management and use of the City of Rocks and most of the issues involve a great deal of emotion. With the demands from increased visitation comes an economic effect on the region, county, and surrounding rural communities.

The following is a partial list of those who may be affected by climbing related activities or the management of them:

1) Private Landowners - As of February, 1995, approximately 4,500 acres of the land in City of Rocks National Reserve was privately owned, including some of the historic inscription rocks and most of the California Trail that is within the boundaries of the Reserve. Consequently, private property owners have a number of significant concerns relating to public use of the Reserve, including trespassing, liability, and destruction of property. There is a pressing need for consistent communication and cooperation between government agencies, user groups and the owners of private lands within the Reserve.

In addition to some of the impacts discussed elsewhere in this document, landowners have identified the following problems associated with visitor use of CIRO:

- * Damage to fences, vegetation and water sources has occurred.
- * Visitors' dogs have chased cattle.
- * No Trespassing signs frequently are not obeyed.
- * Dealing with increased visitation and government agencies causes anxiety, stress, and the need to seek legal advice.
- * Gates have been left open, necessitating the addition of locks.
- * Trail erosion is a greater concern due to increased visitor

traffic.

Landowners note these problems specific to scrambling, climbing, and new route development:

- * Climbing on some of the inscription rocks has accelerated deterioration of inscriptions. An example is on the Chicken/Pagoda/Elephant Head rock complex.
- * Concern over liability has prompted some individual land owners to consider banning climbing on their property.
- * Bolts, slings, (etc.) and rock damage are visual impacts.

2) Area Residents - Residents of the surrounding communities are inter-acting with large numbers of climbers (American and foreign) from outside of the area and are faced with a new demand for goods and services.

3) Climbers - Diverse in climbing techniques and perspectives, some find themselves with philosophical differences which affect experiences and inter-action among members of the user group. Perceived crowding and anxiety over future management of the Reserve are key social issues.

4) Commercial Operations - Climbing schools are experiencing an increase in demand for instruction and guiding. The increase in activity affects not only the client(s) and guide(s) but also other climbers. At City of Rocks, guides are now required to comply with applicable laws governing commercial operations.

5) Other Users - Other visitors have been forced to adjust to the increased number of climbers present. Visitors that have not traveled to the Reserve to climb can be faced with competing for recreational opportunities such as primitive camping and solitude within the Reserve.

6) Reserve Managers - Planning and implementing climbing management, including public participation, and managing the effects on other users, will require a commitment of resources and funding. Staffing, training, and equipment for search and rescue and emergency medical services also increases the demands on Reserve staff.

THE TWIN SISTERS RESOURCE STUDY

Introduction

The Twin Sisters Resource Study was initiated in March of 1993 in response to concerns regarding technical rock climbing activities on the two prominent rock spires located in the southern portion of City of Rocks National Reserve. Twin Sisters is not only an attractive rock climbing area but it is also one of the important

features of the area's National Historic Landmark designation due to its association with the California Trail. With this special status comes the responsibility of assuring that public use will not derogate the natural features and cultural value of Twin Sisters.

Project Summary

The purpose of the Twin Sisters Resource Study was to evaluate the effects of rock climbing on and immediately adjacent to the formation and to make a determination of what effect, if any, climbing has had on the natural and cultural values of the feature. As stated in a March 24, 1993 memorandum from Regional Director Odegaard, the study "will form the basis for a long-term management decision as to whether climbing and other recreational impacts warrant the permanent closure of the Twin Sisters to climbing, or allow such use with certain conditions and restrictions". Components of the resource study were:

- 1) an evaluation of the natural resource significance of the feature
- 2) an evaluation of the cultural resource significance of the feature
- 3) an assessment of any resource degradation caused by past and present climbing use
- 4) recommendations concerning actions that may be taken by park management to mitigate or minimize future climbing impacts on the Twin Sisters

During the 1993 field season, the baseline condition of Twin Sisters was documented, a photographic analysis was conducted, and a climbing history was compiled. The comprehensive nature of the Twin Sisters Resource Study provided an excellent opportunity to develop and refine a methodology for monitoring natural resource conditions of the formation. The study provides a model for future climbing-related resource monitoring at City of Rocks.

By July 1994, the study tasks were accomplished. The findings and recommendations were presented to the NPS Pacific Northwest Regional Director and the Idaho Department of Parks and Recreation Director for a decision, which would be incorporated into the City of Rocks National Reserve Comprehensive Management Plan. The conclusions of the study are summarized below:

- 1) An evaluation of the natural resource significance of the feature revealed that, while the two spires are vastly different in age and geology, their characteristics are not unique to City of Rocks or the region. It is the juxtaposed position of the two

contrasting pinnacles which provides significant geologic interest. The natural resource significance associated with Twin Sisters has not been affected by climbing activity on the formation.

2) The assessment of natural resource impacts caused by climbing use did not reveal any trends which suggest eventual impairment of the natural state of Twin Sisters if rock climbing were to continue on the formation. The presence of climbers or climbing equipment was found to have no significant visual impact in the middle ground or background when viewed from the California Trail.

3) An evaluation of the cultural resource significance, based primarily on existing studies, including the National Historic Landmark documentation, revealed that the Twin Sisters formation is one of the most important features of the California Trail within City of Rocks. It has documented historic significance and potential ethnographic significance. It is one of the components which provide the unique opportunity to experience a segment of the California Trail in a setting which retains the feelings and association of the original migration era. Through research conducted in association with the Twin Sisters study, 61 emigrant journal entries were found which refer to Twin Sisters or its vicinity.

In order to preserve the significant elements which define the Reserve's integrity as a Historic Landmark, it was recommended that Twin Sisters be closed to climbing and all recreational use and be managed exclusively to protect its cultural value. This recommendation took into account the comments provided by the Idaho State Historic Preservation Officer and the Advisory Council on Historic Preservation. The comments of these two offices were provided through the consultation process required under section 106 of the National Historic Preservation Act.

A summary of the Twin Sisters Resource Study can be found in appendix F. A summary of historic references to Twin Sisters can be found in Appendix G.

GENERAL MANAGEMENT ZONING
FOR CITY OF ROCKS NATIONAL RESERVE

All units of the national park system are required to divide the unit into management zones to provide guidance to park managers concerning resource protection and management, visitor use management, and development.

Congress directed that the Comprehensive Management Plan (CMP) for City of Rocks National Reserve should identify those areas or zones that would most appropriately be devoted to historic and natural preservation, public use and development, and private use, in keeping with the protection of the historic rural setting.

Strategies for managing climbing activities at City of Rocks must support the management zoning delineated and defined in the Comprehensive Management Plan. The zones, subzones and areas are listed below, with selected excerpts from the CMP's description of the zones, which provided guidance for the development of climbing management alternatives outlined in this plan. Statements from the CMP with particular reference to the management of recreation or, more specifically, climbing, are shown in italics (emphasis added).

Historic and Natural Preservation Zone

1. California Trail Subzone: Emphasis on preserving and interpreting outstanding features (major landmarks, trail remnants, inscription rocks, encampment area, California Trail corridor).

Recreation uses not directly associated with the access or the enjoyment and interpretation of the California Trail would generally be precluded within the foreground viewshed of the California Trail. This would eliminate climbing opportunities where the activity would be visible from approximately 1/4 mile of each side of the California Trail. To protect outstanding features, climbing and scrambling would be prohibited on historic inscription rocks, Twin Sisters formation, Pinnacle Pass and other features that have cultural significance.

2. Natural Area Subzone: Emphasis on preserving exceptional natural resource values and providing recreational opportunities where appropriate. Three management areas were identified:

a. **Research Natural Area:** *Activities restricted to non-manipulative research, education, and other activities that would not detract from the area's research values*

(as per NPS-77 guidelines). Public use excluded except by permit.

b. General Natural Area: Protect natural resource values and provide for a level of public and private use that does not degrade the natural qualities of the area. The area would be subject to more intense natural resource monitoring and management than other areas to ensure that sensitive habitats were not degraded.

c. Natural and Recreational Resource Area: Emphasis on balancing recreational use with the protection of natural resources. Opportunities for more intense resource-based day recreation would be provided in the western arm of the rock crescent which contains many of the most popular areas for rock climbing, hiking, picnicking and camping.

Historic Rural Setting Zone

The intent would be to preserve the historic rural setting and to perpetuate ongoing ranching activities that captured the rural character of the Reserve at the time of its establishment.

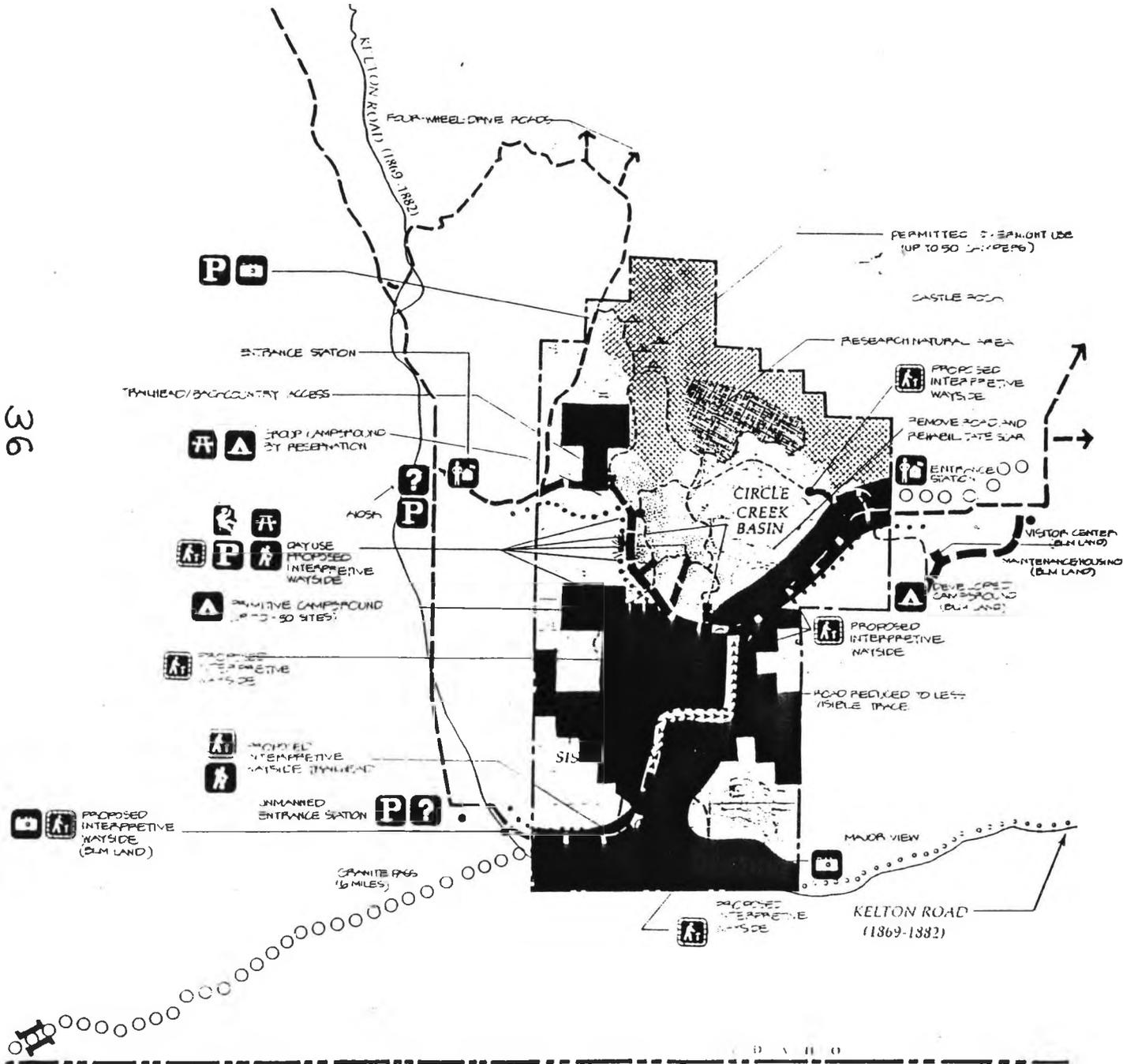
Appropriate recreation, including day uses, such as hiking, informal picnicking, photography, nature viewing and climbing would be permitted. Since much of this zone is in private ownership, the public would be directed to seek the owner's permission prior to entering private land.

Public Use and Development

Only those modest facilities essential to visitor enjoyment of resources, such as access roads, parking pull-offs, trails, picnic sites, primitive campsites and toilet facilities would be included in the Reserve.

MANAGEMENT ZONING
CITY OF ROCKS NATIONAL RECREATION AREA
 United States Department of the Interior
 National Park Service
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HISTORIC AND NATURAL PRESERVATION ZONE

CALIFORNIA TRAIL SUBZONE

- FOREGROUND OF CALIFORNIA TRAIL
- GENERAL USE

NATURAL AREA SUBZONE

- RESEARCH NATURAL AREA
- GENERAL NATURAL AREA
- NATURAL AND RECREATIONAL RESOURCE

HISTORIC RURAL SETTING ZONE

- PRIVATE LAND
- PUBLIC LAND

PUBLIC USE AND DEVELOPMENT ZONE

- GRAVEL ROAD (PROPOSED)
- RANCH ROAD
- MINOR ROAD
- TRAIL

EXISTING FEATURES

- CALIFORNIA TRAIL CORRIDOR
- LIVESTOCK TRAILING CORRIDOR
- SALT LAKE ALTERNATE TRAIL
- BEST PRESERVED WAGON RUT REMNANT
- PASSES ON TRAIL
- NATIONAL RESERVE BOUNDARY



MANAGEMENT ALTERNATIVES AND ENVIRONMENTAL IMPACTS

Four alternatives were considered for managing rock climbing at City of Rocks, and are outlined in this section. The proposed action, Alternative D, is presented last. A discussion and impact analysis accompany each alternative.

During the identification of issues and impacts of each alternative considered, it was determined that climbing activities would not impact any threatened or endangered species at City of Rocks nor any wetlands or floodplains. Climbing would not impact the National Natural Landmark status of the Reserve, and is a generally precluded use in the Research Natural Area. These issues are common to each alternative and are, therefore, omitted from the assessment of environmental consequences of the management alternatives. However, the effects on cultural resources and the protection of the National Historic Landmark are included in assessment of actual and potential impacts.

ALTERNATIVES FOR MANAGING TWIN SISTERS

The determination of whether climbing will continue to be allowed on Twin Sisters has become an issue of public interest and concern to both the climbing and historic preservation communities.

Based on the findings of the Twin Sisters Resource Study and consultation with the Idaho State Historic Preservation Office and the Advisory Council on Historic Preservation, a recommendation to close Twin Sisters to all recreational use was incorporated into the proposed action of the Comprehensive Management Plan (CMP). Consequently, the recommended closure is also included in the proposed action (Alternative D).

In order to assess the consequences of various management proposals on the use and preservation of Twin Sisters, and to provide for the public's involvement in the decision process, options for managing climbing on Twin Sisters are incorporated into the range of management alternatives presented in this section. They are:

- (1) Unrestricted Climbing on Twin Sisters
see Alternative A, the No Action Alternative
- (2) Restricted Climbing on Twin Sisters
see Alternative B, the Permit System Alternative
- (3) Prohibit Climbing on Twin Sisters
see Alternatives C and D, the Regulatory Alternative
and the Proposed Action

Alternative A: TEMPORARY RESTRICTIONS (NO ACTION) ALTERNATIVE
AND ENVIRONMENTAL IMPACTS

Under this no action alternative, climbing in the Reserve would be managed as it was prior to the initiation of any resource monitoring or management programs established to address the long-term mitigation of climbing impacts. This alternative would seek to mitigate impacts on a site or area specific basis. Temporary restrictions would be applied only when and where climbing-related impacts became apparent, regardless of management zones in the Reserve. Under this approach, resource monitoring would involve casual field observations and education would be the principal approach to preventing resource derogation and user conflicts.

The following are examples of site-specific actions which could be applied if there was a demonstrated need:

- 1) Seasonal closures may be imposed to protect sensitive wildlife species during critical periods.
- 2) Site-specific trail closures may be imposed for rehabilitation or during periods of heavy precipitation.
- 3) Site specific closures may be imposed in specific areas on certain days of the week or during particular events to reduce conflicts with other users.
- 4) Chalk may be prohibited or clean-up/removal may be conducted where chalk is a visual impact.

Discussion: This alternative presents a reactive, rather than proactive approach to managing climbing-related impacts and does not address long-term solutions. Virtually all of the obvious environmental impacts could be beneficially affected by restricting the type and amount of use causing the degradation, if the source is known. In most cases, without adequate resource monitoring, trends in resource conditions resulting from climbing activities would not be detected until the impact became severe. Under the "No Action" alternative, climbing on Twin Sisters would be unregulated, reflecting the status before initiating the Twin Sisters Resource Study and the associated climber registration system.

ENVIRONMENTAL IMPACTS:

Imposing temporary restrictions in the event of obvious derogation, or significant threat to resources, would result in:

Natural

- increased potential for subtle resource degradation trends to go undetected (i.e. deterioration of water quality, loss of fragile vegetation)
- potential for irreversible loss of resources and values (i.e. displacement of wildlife, destruction of habitat) due to lack of resource monitoring
- increased probability of raptor nesting and fledgling success due to seasonal closures

Cultural

- increased potential for subtle trends in historic resource degradation to go undetected
- high potential for irreversible damage to physical cultural resources due to lack of proactive protective measures
- adverse impact on the historic interpretive experience of visitors with climbing allowed to occur on all historic features (i.e. inscription rocks)
- adverse impact on the integrity of Twin Sisters and the historic foreground views from the California Trail due to continuation of unrestricted climbing in the California Trail subzone
- mitigated impact on interpretive experience and potential use conflicts avoided if time and use limits were imposed

Socio-economic

- reduced visibility of chalk residue on climbing routes
- negative reaction from some local landowners and government representatives for lack of adequate resource protection
- negative reaction from some members of the environmental and historic preservation communities for lack of adequate resource protection
- positive reaction from some climbers based on lack of restrictions and lax management approach
- provides opportunity for beneficial partnership with climbing community due to emphasis on education
- potential increase in cost of stabilization projects due to magnitude of impacts prior to initiating management actions

USE RESTRICTIONS ON TWIN SISTERS

In order to avoid potential conflicts with the Reserve visitors who wish to experience and appreciate the historic resources of the California Trail, climbing on Twin Sisters would be restricted to weekdays when there is little visitation to the historic corridor of the Reserve. The use restriction would reduce climbing use on Twin Sisters by an estimated 40%. Climbing would also be temporarily prohibited during historic

commemorative events. Site-specific restrictions could be applied to delineate approach and descent routes. This would segregate recreational and historic interpretation uses and would also minimize the natural resource and visual impacts which are associated with trails.

ENVIRONMENTAL IMPACTS OF THE TWIN SISTERS ALTERNATIVE:

Natural

Weekend restrictions would considerably diminish climbing use resulting in:

- decreased trail erosion and vegetation damage attributed to foot traffic
- reduction of soil, vegetation and visual impacts attributed to trail braiding near the base of the rocks due to designation of approach and descent routes
- opportunity for long-term natural revegetation of climbing impacted areas on and off the rock due to the reduction in use

Cultural

- reduces potential impacts from climbing-related activities on the historic interpretive experience of visitors during periods of heaviest visitation
- greatly reduces potential of any impact to the historic resource due to reduction in climbing use
- reduces adverse impact to the integrity of Twin Sisters caused by recreational use of the formation
- beneficial impact of providing educational opportunity for promoting cultural resource sensitivity and compatible climbing practices in a historic setting

Socio-economic

- decreased potential to see or hear climbers on Twin Sisters (may have positive and negative impacts)
- decreased potential for climbers to detect traces of other climbers
- increased administration and enforcement functions and costs due to weekend restrictions
- negative reaction from some climbers for limitations on use
- negative reaction from some historic preservationists for allowance of any recreational use
- positive reaction from some climbers for climbing opportunity
- provides opportunity for beneficial partnership with climbing community in addressing management of recreational use in concert with historic preservation Reserve-wide

Alternative B: PERMIT SYSTEM ALTERNATIVE
AND ENVIRONMENTAL IMPACTS

This alternative would establish a permit system for climbing activities at City of Rocks as a means of controlling or monitoring use and related impacts. The system could be applied either Reserve-wide, or to specific management zones within the Reserve based upon different criteria and limits for each management zone defined by the Comprehensive Management Plan. The permit system would be designed from the range of options listed below. An approach to managing climbing on Twin Sisters by restricting use through a permit system is also included in this alternative.

- 1) Permits could be required for:
 - a) all recreational climbing
 - b) climbing in specific zones, subzones or areas
 - c) climber's trailhead parking
 - d) all new route development
 - e) installation of new fixed protection only
 - f) replacement or maintenance of existing anchors
 - g) use of battery-powered rock drills
 - h) combination of items (b-g) above

- 2) Permits could be issued by:
 - a) lottery
 - b) first come/first serve
 - c) reservation
 - d) unlimited

- 3) Number of permits issued could be based on:
 - a) reserve-wide limit
 - b) zone, subzone or area limit
 - c) trailhead parking capacity
 - d) area-specific evaluation of impacts and use
 - e) demand (unlimited)

Discussion: A permit system could provide a mechanism to measure the amount of climbing use, gather baseline information on resource condition, and to monitor the changes in use and changes in resource conditions. A permit system could also be used to control the extent or location of climbing use, which could then be adjusted as appropriate based on information obtained through a monitoring program. This latter approach would likely result in some resistance from the climbing community if climbers were the only type of day-use visitor required to comply with a permit system, especially if permit requirements were widespread throughout the Reserve and monitoring evidence did not substantiate the need for controlling use. If a permit system were integrated into a climbing management program which included

an active resource monitoring component, and there was good compliance with the permit requirements, protection of targeted resources and values could be effective. Whether a permit system is manageable and enforceable would depend on the availability of qualified staff and program funding. The environmental consequences of a permit system would need to be evaluated based on the system's particular organizational structure, and its application and purpose. One such assessment is presented below, as an alternative for managing Twin Sisters. Though the alternative specifically addresses climbing by permit, other recreational uses, such as walking and photography within the otherwise closed area would be subject to similar permit standards and restrictions.

TWIN SISTERS PERMIT SYSTEM

Under this alternative, a permit system would be established to allow for certain limited or restricted climbing use of the Twin Sisters formation, as determined by the Superintendent. It would include the following provisions:

- a) permits required to climb the South or North Sister
- b) no more than 2 Twin Sisters permits issued per day
- c) no more than 1 party on a route per day
- d) maximum group size is three climbers per permit
- e) permits issued for summit-bound routes only
- f) permits issued on weekdays only (reservations accepted)
- g) no permits issued during commemorative trail or other historical events

Discussion: Because of the historic significance of Twin Sisters as a navigational landmark along the California Trail, climbing activities must be managed so as not to threaten its integrity; physically or culturally. A permit system provides a means of controlling or restricting climbing use on the formation in order to protect the experience and ambience of the historic setting without prohibiting its use entirely. The alternative provides a flexible way to modify permit requirements based upon the results of monitoring climbing use and any associated resource impacts. This alternative also provides a mechanism for educating prospective climbers about the significance and resource sensitivities associated with climbing use on the Twin Sisters. The proposed permit system provides a framework for a unique opportunity to educate one of the Reserves' largest recreational user groups in conducting their activities under the theme of historic preservation and appreciation.

The permit system would also allow the continuation of resource monitoring to supplement the baseline condition and use data previously gathered as part of the Twin Sisters Resource Study.

It is projected that the limits imposed by the permit system would reduce climbing use on Twin Sisters by approximately 75% over recent use levels. Whether or not the level of resource protection afforded by such a permit system is ample to provide protection of the resource, given the significant status of Twin Sisters, must be evaluated by the National Park Service in consultation with the Idaho State Historic Preservation Officer and the Advisory Council for Historic Preservation as required under section 106 of the National Historic Preservation Act.

ENVIRONMENTAL IMPACTS OF THE TWIN SISTERS ALTERNATIVE:

Natural

Controlling the amount and location of use would result in:

- decreased potential for trail erosion and vegetation damage caused by foot traffic
- long-term natural revegetation of impacted areas on and off the rock is likely to occur with the reduction in use

Cultural

- reduces any potential impact from climbing related activities to the historic interpretive experience of visitors during periods of heaviest visitation and during special trail events
- greatly reduces potential of any impact to the historic resource due to limits on use
- greatly reduces impacts to the integrity of the historic resource due to conditions of use and permit limits
- beneficial impact of providing educational opportunity for promoting cultural resource sensitivity and compatible climbing practices in a historic setting
- allows for some limited climbing use on formation which may continue to impact the "association and feeling" attributes of the historical feature

Socio-economic

- decreased potential to see or hear climbers on Twin Sisters (may have positive and negative impacts)
- reduced use is beneficial affect on permitted users who seek greater solitude in their experience and fewer traces of other climbers due to dispersal and limitations on use
- increased administration and patrol responsibilities and costs due to permit system operation
- negative reaction from some climbers for imposition of use limits
- negative reaction from some historic preservationists for

- allowance of any recreational use on formation
- positive reaction from some climbers for climbing opportunity
 - provides opportunities for cooperation between climbing and historic preservation community regarding climbing and other recreational uses and the protection of historic/cultural resources.

Alternative C: REGULATORY ALTERNATIVE
AND ENVIRONMENTAL IMPACTS

This alternative would place emphasis upon a regulatory approach to protect Reserve resources and to control climbing and other recreational uses. As opposed to the permit system approach listed in Alternative B which restricts use levels, the regulatory approach would focus upon restrictions in climbing procedures. This regulatory approach would also seek to mitigate climbing-related impacts by restricting specific climbing activities equally throughout the Reserve. Areas identified through management zoning applications in the Comprehensive Management Plan that either preclude or restrict climbing and other recreational uses would be protected by the enforcement of these regulations. The strict enforcement of the following uses would be necessary to implement this alternative.

- 1) The use of motorized power drills would be prohibited except by permit for the sole purpose of replacing pre-existing anchors, as allowed within areas enumerated in this plan.
- 2) The use of tools for "cleaning" (i.e. wire brushes, hammers, etc.) or for any other modification or alteration of the rock would be prohibited.
- 3) Installation of new fixed protection would be prohibited. Only new routes which accommodate removable climbing protection would be allowed.
- 4) Permits could be issued for the installation of common rappel anchors when no reasonable or safe descent was available. Rappel anchors would be positioned and camouflaged so as not to be easily seen by the casual viewer. The number of rappel anchors would be limited to one per rock whenever possible.
- 5) Climbing on and in the immediate vicinity of any identified historic resources and within protected zones, including the California Trail Subzone, would be prohibited. Pre-existing fixed anchors would be removed and the rock would be restored when visible signs of anchors remained. Closed areas would be posted and patrolled.
- 6) The use of chalk would be prohibited.

Discussion: This alternative would seek to mitigate Reserve-wide climbing-related impacts by restricting new route development activities, reducing visual impacts and protecting historic

resources. Regulations would be conspicuously posted and user education programs would stress compliance with climbing and other visitor regulations. Implementation of this alternative would rely heavily on the enforcement of regulations by Reserve staff. Enforcement could be expected to have negative social impacts upon the recreating public depending on the techniques utilized by staff to enforce regulations. Regulation enforcement could also pose an increased patrol and law enforcement burden on Reserve staff.

By prohibiting the installation of new fixed climbing hardware (by hand or power drill) and prohibiting tools used for cleaning or rock altering, new route development would be expected to decrease and possibly cease entirely. Provisions would be made for climber safety by permitting the installation of hardware in certain, narrow conditions.

ENVIRONMENTAL IMPACTS:

Natural

Strict regulation of route development would:

- reduces potential for soil and vegetation loss attributed to the establishment of social trails to new climbs
- eliminates potential for disturbance of rock and vegetation where new route development was not possible without fixed anchors
- reduces impact to rock caused by new installation of hardware, or alteration from creating or improving holds

Climbing prohibition on and near historic resources would result in:

- long-term natural revegetation of climbing impacted areas on and off the rock
- slowed soil erosion and decreased vegetation damage attributed to climbing
- potential increase in soil compaction and vegetation damage near rocks, attributed to historic interpretation visitation
- increased potential for establishment of raptor nesting sites
- potential rock damage from removal of existing fixed anchors

Cultural

- Provides protection of all identified historic resources from any actual or potential impacts from climbing activities.
- Twin Sisters, like all other historic formations, would be closed to all climbing and other recreational use, and therefore protected from any actual or potential impacts from climbing activities.

Socio-economic

- reduces frequency of occasional noise impacts from power drills or hammers, due to strict regulation of route development
- eliminates visual impact associated with residual chalk marks and obvious rappel anchors
- decreased visibility of climbers and equipment on the rocks due to climbing prohibition on and near historic resources
- enforcement emphasis would have the potential to create negative, adversarial relations with the public
- requires increased staff, funding and other resources for patrols and regulatory enforcement
- alternative is not conducive to partnership approaches
- limits potential of future of new climbing activity/use
- reduces potential for conflicts between various types of users in historic zones
- potential safety issues present for climbers with a ban on chalk use

Alternative D: THE PROPOSED ACTION

AND ENVIRONMENTAL IMPACTS

The proposed management scheme would integrate certain elements from alternatives B and C, with the principles of the Reserve's general management zoning, as defined in the City of Rocks Comprehensive Management Plan. By adopting this approach, climbing would be managed with the primary intent being to protect the resources and values of the Reserve, while providing for an appropriate levels of public recreational climbing use.

Resource monitoring and protection, public education, communication, and the strengthening of partnerships, would be important components of the City of Rocks climbing management program. This approach would provide the mechanisms to accomplish the goals and objectives set forth in this plan, and fully meet the intent of the Comprehensive Management Plan.

General Management

* Resource monitoring would be the foundation of this management program to ensure that objectives were being met and would indicate when changes in the management approach were warranted. Resource monitoring would be consistent with the objectives and strategies defined in the City of Rocks Resource Management Plan and would focus on the condition of the resources and social factors, rather than emphasizing climbing-related studies. Exceptions may be for scientific research or in instances where the cause of resource derogation is suspected to be activity-specific.

* Implementation of the climbing management program would warrant the continued staffing of a climbing ranger at City of Rocks. Climbing program coordination would also involve resource management, maintenance, interpretation, visitor protection, and emergency services functions. A work plan would be prepared annually to define short-term climbing management priorities.

* Current regulatory authorities are considered adequate for the implementation of this program. This strategy does not propose new climbing-specific regulations at City of Rocks. Long-term closures or restrictions of specific areas (i.e. Twin Sisters, RNA) would be addressed through regulations pertaining to all recreational use. Any new federal regulations or National Park Service directives pertaining to climbing activities would be applied at City of Rocks.

* The effectiveness of this proposal would rely, in part, on a comprehensive climber education program and the strengthening of partnerships between the Reserve management, private landowners,

as well as individual members and organizations from the climbing, environmental and historic preservation communities, and other interested parties. Education is a critical component of any visitor use management program. In many cases, resources and values are negatively impacted due to a lack of understanding regarding appropriate uses of an area. At City of Rocks, climbers, managers, and other interested parties could all benefit from a shared knowledge of the activity, the area and resources involved, climber's concerns and perceptions, and management's objectives and constraints. Therefore, visitor education can be an important tool in helping to achieve voluntary compliance with the resource protection and visitor experience goals of the Reserve. Suggested aspects of the education component are outlined in appendix B and will also be integrated into a Reserve-wide Interpretive Prospectus.

* The Climbing Management Plan for City of Rocks National Reserve is intended to be a dynamic document. A review to determine the need for any potential revisions would be initially conducted two years after the approval of the Climbing Management Plan. Subsequent reviews and revisions to the plan would be made as needed.

Climbing-related Activities Prohibited Through Existing Provisions

* The use of power drills (and other types of power equipment) is prohibited without permission from the City of Rocks National Reserve Manager, or appropriate private landowner. (See appendix D)

* Gluing or chipping rock, gluing or otherwise affixing artificial holds on rock, or any other damaging practices, such as forcibly prying off rock or destroying vegetation to enhance a route, is prohibited.

* Removal of existing fixed anchors, which results in disturbance or damage to the rock or vegetation, is prohibited.

* Guiding, instructing, or other commercial activities without an Idaho Outfitter and Guides License AND an Incidental Business Permit issued by City of Rocks National Reserve is prohibited. (see appendix C)

Climbing-related Provisions by General Management Zones

(See map of general management zones and definitions of management zones on pages _____.

See also Appendix A for list of climbing rocks in each zone)

California Trail Subzone

Climbing within the Subzone is prohibited as follows:

* Climbing (or scrambling) on any surface of inscription rocks is prohibited. Fixed anchors would be removed from signature rocks unless removal would result in damage to the rock. Where it was not possible to remove anchors, remaining hardware would be camouflaged.

* Climbing (and other recreational use) within the foreground viewshed of the California Trail is prohibited. The foreground of the California Trail area is approximately .5 miles wide along most of the trail corridor but also includes the Twin Sisters formation.

* Climbing (and all recreational use) is prohibited on the two spires of the Twin Sisters formation. The closure would be posted, and may be delineated by the proposed livestock enclosure near the base of the formation.

The establishment of new climbing routes within the California Trail Subzone would be prohibited.

Research Natural Area

Climbing (and all other use) is prohibited, unless a permit is obtained for an activity consistent with the area's purpose of being managed for non-manipulative geologic or floristic research and education.

General Natural Area

Climbing is allowed.

Resource monitoring will be conducted in the interest of maintaining sensitive habitats. The management of climbing (and other public use) could be affected by the findings of resource studies and the need to maintain or restore particular natural resource qualities in this area.

Natural and Recreational Resource Area

Climbing is allowed.

Resource monitoring will be conducted in the interest of maintaining sensitive habitats. The management of climbing (and other public use) could be affected by the findings of resource studies and the need to maintain or restore particular natural resource qualities in this area.

Maintenance standards for trails and facilities near popular climbing areas would be increased. Opportunities for cooperative projects would be available. Signage and climber information would be increased.

Historic Rural Setting

Climbing is allowed on public land.

Climbing on private property is subject to landowner's permission.

ENVIRONMENTAL IMPACTS:

Natural

- Monitoring of the natural resources within the General Natural Area would be intensified. Resources determined to be vulnerable to adverse impacts by climbing activities would be protected.
- Potential natural resource impacts to historic features (inscription rocks, Twin Sisters) would be avoided due to closures.
- Soil erosion and vegetation damage on and near Twin Sisters, due to climbing use, would subside. In many cases, areas would naturally revegetate.
- Soil erosion and vegetation damage near inscription rocks may increase due to an increase in visitors viewing the inscriptions.
- Care must be taken to prevent damage to rock surfaces when fixed anchors are removed from inscription rocks.
- The direct and indirect impacts associated with additional bolt proliferation would be avoided due to restrictions on the use of power drills (rock damage, soil and vegetation disturbance on and off rock, aesthetic and experiential impacts, etc.)
- Direct and indirect impacts relating to route development and bolt removal may be reduced by reaffirming existing regulations (rock damage, soil and vegetation disturbance on and off rock, aesthetic and experiential impacts, etc.)
- Soil erosion, vegetation damage and associated water quality degradation should be reduced due to higher maintenance standards in the Natural and Recreational Resource Area
- Potential or existing natural resource impacts may be reduced Reserve-wide due to the commitment to a climber education program.

Cultural

- Significant features included in the National Historic Landmark would be protected from any potential direct or indirect impact from rock climbing (i.e. physical, aesthetic or experiential

impacts).

- The preservation of the historic inscriptions and the integrity of the register rocks would benefit from the elimination of climbing and the removal or camouflaging of remaining hardware
- The foreground views of the California Trail would be protected from the potential visual impact of viewing climbers in the historic scene
- Impacts to the cultural integrity of the Twin Sisters formation, attributed to rock climbing activities on the two spires, would be eliminated by prohibiting climbing

Socio-economic

- Fixed climbing anchors would remain on Twin Sisters but would continue to be unnoticeable to other visitors in the historic zone.
- Camouflaging would reduce visual impact of hardware on the register rocks.
- Chalk residue on Twin Sisters and the inscription rocks would disappear due to natural weathering.
- The potential impact of seeing climbers in the California Trail zone would be avoided due to restrictions in the foreground viewshed and the prohibition of climbing on inscription rocks
- Continued funding and staffing for climbing management would be necessary to successfully implement this action
- Increased funding and resources would be necessary to provide monitoring, trail maintenance, facilities, signing and educational materials as proposed.
- Special conditions for commercial guiding could have beneficial effects by requiring that environmental education and climbing safety be integrated into every guiding or instructional session.
- Action would benefit relations with private landowners by clarifying areas of public land ownership and reaffirming the prohibition of entering private property, unless waived by the private landowner.
- Prohibition of climbing on Twin Sisters would adversely affect the climbing community. A lack of understanding of the source and severity of impacts to the historic resource by most recreational visitors and their broad disapproval of the closure could result in the disbanding of existing partnerships and the undermining of future relations and project support at City of Rocks.

MANAGEMENT ALTERNATIVES CONSIDERED BUT REJECTED

In addition to the alternatives presented, six other approaches were considered but rejected. Two alternatives which were dismissed due to their inconsistency with National Park Service Management Policies and guidelines were (1) No Climbing and (2) Unmanaged Climbing. The National Park Service and the Idaho Department of Parks and Recreation generally support rock climbing as a legitimate recreational use of park lands. The Comprehensive Management Plan also recognizes the importance of City of Rocks as a recreational resource and directs that the "climbing management plan would propose ways to accommodate climbing activities, while protecting the key resources and interpretive values of the Reserve". In section 201 (a) of the Act establishing City of Rocks National Reserve as a unit of the National Park Service, one of the primary stated purposes of the area is to "manage recreational use." Unmanaged climbing would not meet this legislative mandate. Thus, neither the "No Climbing" nor the "Unmanaged Climbing" alternatives, applied Reserve-wide, were considered.

A third rejected alternative considered a fee system as a possible method of managing climbing and mitigating associated impacts. The alternative was dismissed as an unnecessary and burdensome management option for the Reserve. The cost effectiveness and environmental benefits of implementing various types of fee systems were not fully explored.

A fourth alternative would have provided for "self-regulated" climbing use through development of a user education program rather than through regulatory or any other direct management actions. This concept would have involved an aggressive education program within the Reserve centering on climbing and minimum impact practices. An education program alone does not ensure that climbing use could be adequately managed within the Reserve. No management strategy would be in place if there was insufficient public response to "self regulated" programs. However, public education regarding climbing and other visitor activities is certainly important. Therefore, important educational concepts related to climbing use have been incorporated into the proposed action, and climber education programs have been recommended for integration within the overall visitor interpretive and education program of the Reserve.

A fifth alternative considered would have retained the status quo (minimal restrictions), but established a long-term resource monitoring program to identify resources impacts, define thresholds of acceptable change, and to impose appropriate restrictions necessary to keep use from exceeding thresholds. Resource studies concerning Reserve resources and many forms of visitor activities, including climbing, is an important component

of the Reserve resource management program. This alternative was rejected because the retention of status quo conditions did not provide adequate protection of Reserve resources. While important for the information it provides, resource monitoring does not replace resource management, and should be viewed as an information tool for decision-making, not an end in itself.

A sixth and final alternative that was considered but rejected would restricted all climbing use to one intensive-use recreation zone within the Reserve. This alternative was rejected because the proposed action already provides for the protection of important historical and natural features of the Reserve in accord with the Comprehensive Management Plan and the management zoning scheme proposed by the plan. Also, this alternative would place large portions of the Reserve off-limits to climbing use, and would deny legitimate recreational use in areas of the Reserve that remain appropriate for managed climbing activities.

CLIMBING MANAGEMENT PLAN

LIST OF PERSONS AND AGENCIES CONSULTED

The Public Working Group:

"The Interim Climbing Management Plan", 1991

Dave Bingham - Author of City of Rocks, Idaho - A Climber's Guide. Long-time City of Rocks climber and route developer, climbing guide and outdoor program instructor, founding member of "Friends of City of Rocks, inc.", City of Rocks V.I.P. ranger (1987), climbing experience in North America, Australia, Europe and Asia, 25 years climbing experience

Dave Daams - Park Ranger, Idaho Department of Parks and Recreation, City of Rocks National Reserve.

Bob Dunnagan - Assistant Superintendent for natural resources planning at Mount Rainier National Park, 33 year veteran of the National Park Service having worked in many western mountain parks and central offices, active climber/mountaineer and park ranger involved with climbing activities for more than 20 years of his career.

Jean Elwell - Private landowner within City of Rocks National Reserve, member of the Nicholson family whose history includes almost 60 years of ranching in the City of Rocks and who owns many popular climbing rocks including "The Dolphin", currently writing a book on History of City of Rocks.

Mead Hargis - M.S. degree candidate in environmental planning, USU, Utah, B.S. degree in biology, UC Berkeley, CA, currently conducting research into policy to resolve climbing/resource conflicts on public lands, climber, and former NPS ranger in Yosemite for 12 years dealing with climbing and resource management, former Litigation Coordinator on the Mono Lake Committee, former Director of the Mono Lake Foundation.

Carol Kotchek - City of Rocks climber for 13 years, established new climbing routes, climbing experience throughout the western U.S. and in Europe, organized 1989 City of Rocks climber's meeting which adopted voluntary climber's code and self-regulation.

Maura Longden - ICMP Chairperson/Facilitator, City of Rocks National Reserve Climbing Ranger, Park Ranger for 17 years, climber for 20 years, international guide, climbing experience in U.S., Canada, France, Switzerland, Asia, Argentina and New Zealand.

Dean Sangrey - Executive Director of Idaho Outfitters and Guides

Licensing Board, involved in the licensing and evaluation of commercial guiding activity at City of Rocks National Reserve as well as throughout the state of Idaho.

John Steiger - Representative of The Access Fund and member of The Access Fund's National Advisory Council, attorney specializing in public land law, 21 years of climbing experience, six at City of Rocks, former Assistant Editor of Climbing magazine.

Dr. Merle Wells - Retired Idaho State Historical Society Historian, recognized authority on the California Trail history, transportation routes, ranching history, and historical preservation, involved in historic resources investigations at City of Rocks for more than 30 years, involved in review of federal actions which may affect National Historic Landmark designation.

Anna Witesman - Freelance writer and editor, hiker/climber (Rocky Mountains, Western U.S. and Alaska), present focus: outdoor activity with children including several trips each year to City of Rocks. First climbed at City of Rocks in 1971, strong interest in geology, botany, and local history.

Fred Witesman - Active rock climber and mountaineer since 1969, City of Rocks climber since 1983, climbing experience in North America, United Kingdom, Alaska, European Alps and Asia, MRA search and rescue team member, mountaineering and avalanche instructor.

Steve Wolper - Representative of the Idaho Conservation League, member of The Wilderness Society, 29 years of climbing experience, first climbed at City of Rocks in 1967, Ketchum resident for 17 years.

The Twin Sisters Resource Study:

John Barstow -	Photographic Documentation
Marsha Davis -	Geologic Significance Study
Keith Dunbar -	Planning, Project Coordination
Michael Forkash -	Wildlife Inventory
	Hardware and Route Inventory
Steve Gibbons -	National Natural Landmark Review
Joseph Hawkins -	Vegetation Study
	Hardware and Route Inventory
	Climber Registration Statistics
Maura Longden -	Natural Resource Study, Project Coordinator
Stephanie Toothman-	Cultural Significance Study
Charles Unsworth -	Geology Study
Victoria Witesman -	Climbing History
	Report Editor

Others Consulted:

Advisory Council on Historic Preservation

Sam Davidson - The Access Fund

Yvonne Ferrell, Director, Idaho Dept. of Parks and Recreation

John Hill - Idaho State Historic Preservation Officer

Ned Jackson - Park Manager, Idaho Dept. of Parks & Recreation

Larry Jones - Idaho Historical Society

Kathy Joep - Chief of Natural Resources Division, NPS-PNR

Michael Nicholson - Private landowner, City of Rocks N.R.

Oregon and California Trail Association

Dave Pugh - Superintendent, National Park Service

Bob Rosso - Idaho Outfitters and Guides Licensing Board

Allen Sanderson - The Access Fund

Scott Tyson - ISU Outdoor Program & Friends of City of Rocks

Other Land Managers Consulted:

National Park Service, Div. of Ranger Activities, Washington, DC

Rocky Mountain National Park, CO

Pinnacles National Monument, CA

Joshua Tree National Monument, CA

Devil's Tower National Monument, WY

Yosemite National Park, CA

Eldorado State Park, CO

Boulder Mountain Parks, CO

APPENDIX A

LIST OF KNOWN CLIMBING FORMATIONS BY MANAGEMENT ZONE

ROCKS OPEN TO CLIMBING

A. NATURAL AND RECREATIONAL RESOURCE AREA

Upper City/Breadloaves Area:

Finger Rock	Go West
Upper Breadloaves	Lower Breadloaves
Owl Rock	King On The Throne
The Mall	The Camel
Eric Wood	

Parking Lot Rock Area:

Parking Lot Rock	The Anteater
Morning Glory/Incisor	Creekside/Office etc.
Peter Pan Boulder	Bad Boy
Turkey Vulture Rocks	Rabbit Rock
Buzzard Perch	Blockhead
The Real Rabbit Rock	Window Rock
Animal Cracker Dome	Hangdog Dome
The Clamshell	Drilling Fields/Lost World

Center City Area:

The Wart	Bath Rock
Obvious Wall	Out to Pasture
Elephant Rock (South 1/2 Private)	Lookout Rock
Practice Rock	

Inner City Area:

Flaming Rock	Slabbage Patch
Bumblie Wall	The Transformer
California Corridor	Puzzle Rock

Circle Creek Basin:

Odyssey Wall	The Boxtop
Lost Arrow	No Start Wall
Mushroom Rock	Orange Wall
Stripe Rock	Slash Rock
Heartbreaker	The Laboratory

ROCKS CLOSED TO CLIMBING (Continued)

INSCRIPTION ROCKS

City Limits
Elephant Head
Monkey Head
Treasure Rock
Register Rock

Chicken Rock
Camp Rock
Kaiser's Helmet
Devil's Bedstead
The Dome

HISTORIC ROCKS

South Sister

Higher Sister (Eberhorn)

APPENDIX B

THE EDUCATION COMPONENT OF THE PROPOSED ACTION

The effectiveness of the proposed action would rely, in part, on a comprehensive climber education program and the strengthening of partnerships between the Reserve management, private landowners, as well as individual members and organizations from the climbing, environmental and historic preservation communities, and other interested parties. Suggested elements of the educational program are outlined here and would also be integrated into an Interpretive Prospectus developed for the educational and interpretive needs throughout the Reserve.

Education Topics

- * Minimum Impact Climbing
 - Discourage proliferation of fixed anchors
 - Minimize use of chalk
 - Encourage use of neutral colored equipment
 - Encourage minimum impact climbing techniques throughout the Reserve.

- * Reserve Guidelines/Regulations
 - Communicate zoning boundaries/restrictions/guidelines
 - Communicate safety and other use information
 - Communicate pertinent Reserve regulations

- * Respect for Private Property
 - Educate public on public & private property boundaries
 - Educate public on standards of behavior around stock and fenced rangeland
 - Encourage communication with private property owners prior to using or crossing private land

- * Natural Resource Protection
 - Promote pack it in/pack it out philosophy
 - Protect wildlife from disturbance by recognizing defensive behavior and respecting closures
 - Protect vegetation and prevent erosion by using established trails, roads and campsites
 - Protect water sources from litter and human waste
 - Camp in designated sites. Use existing restrooms and fire rings. Purchase wood or bring from outside Reserve

- * Respect for other Reserve Users
 - (- i.e. climbers, sightseers, history buffs, private landowners, hikers, bikers, etc.)

*** Conflict Resolution**

- Address user group conflicts, landowner/user group conflicts, management of Reserve policies and their effect on user groups, through communication

*** Interpretive Programs**

- Provide historical information
- Provide natural resources education
- Provide climbing information and education

Methods of Providing Education

*** Signage**

- In locations such as private property, Reserve entrances, camping and picnic facilities, outhouses, parking areas, visitor's center etc.

*** Employee Contacts**

- Formal presentations.
- Proactive contact between rangers and public
- Correspondence with potential user groups
- Phone contacts

*** Audio-Visual**

- Formal presentations in Visitor's Center
- Formal presentations available to groups prior to use of Reserve

*** External Contacts**

- Climbing publications - magazines, guidebooks
- Climbing organizations - national and local
- Commercial organizations - guides, retailers, schools, gyms, etc.
- Non-Profit organizations - Scouts, church groups, public safety groups

*** Climbing Information Forum**

- Member make-up similar to Interim Climbing Management Plan Team (ICMPT)
- Conflict resolution forum
- Communication/education forum
- Review/advisory forum on effectiveness of climbing policy
- Forum for cooperative projects within the Reserve

APPENDIX C

SPECIAL CONDITIONS FOR COMMERCIAL GUIDING

AT CITY OF ROCKS NATIONAL RESERVE

Commercial operations for rock climbing activities in City of Rocks National Reserve are authorized under an Incidental Business Permit (IBP), issued by the Superintendent at City of Rocks National Reserve, acting on behalf of the National Park Service, and in cooperation with the Idaho Outfitter and Guides Licensing Board. Acquisition of a state license is required prior to the issuance of the IBP. The renewal of the permit and the license will be based on a coordinated review by both agencies.

In addition to the general provisions of the IBP (contained in article IV of the NPS-IDP&R Memorandum of Understanding), the following special conditions shall apply to all commercial licensees who are guiding or instructing rock climbing activities in the Reserve:

Camping is restricted to designated campsites, available on a first come, first serve basis. Large groups are encouraged to camp in areas which can accommodate the group size without damaging the resource and must not exceed the number of campers allowed per campsite. During certain high-use periods, this may necessitate that a group camps outside the Reserve.

Wheeled vehicles are restricted to existing roads and parking areas.

Campfires are discouraged but if used, they are to be restricted to established fire rings and grates.

Firewood must be purchased or brought in from outside the Reserve.

The licensee is required to obtain the permission of the landowner to use or cross private property.

Intentional alteration of the rock or the injury or removal of vegetation is prohibited.

The use of existing permanent climbing protection is based on the judgement of the licensee or the licensee's agent.

The installation of any permanent hardware (i.e. bolts or pitons) is prohibited without the permission of City of Rocks managers.

Chalk use in class situations is prohibited.

All webbing shall be removed from anchors after use. If it becomes necessary to leave webbing in place for a descent, it shall be of a neutral color and positioned so as not to be easily seen by the casual viewer.

Safety equipment is to be used by all clients and guides when on the rock or in the drop zone. The condition and correct use of the equipment is subject to inspection by City of Rocks National Reserve's representative.

It is the responsibility of the licensee to ensure that other people are not endangered due to the activities being conducted under the IBP.

Minimum impact climbing practices and an awareness of the environmental values in the National Reserve are to be conveyed to all clients of the licensee when operating in City of Rocks National Reserve.

The licensee is responsible for ensuring that commercial operations are conducted in accordance with regulations for City of Rocks National Reserve and within the guidelines of the Climbing Management Plan.

Operations under the IBP License are subject to inspection by a representative of City of Rocks National Reserve. Any deficiencies observed or violations of the terms of the IBP will be documented and the licensee will be notified in writing. A copy of the notification will also be furnished to the Idaho Outfitter and Guides Licensing Board. The licensee will have 10 days to address the deficiencies and take corrective action.

APPENDIX D

REQUEST FOR PERMISSION TO USE A POWER DRILL

City of Rocks National Reserve

I. Applicant Information

Applicant's Name _____

Mailing Address _____

Date of Birth _____

Telephone number (work) _____ (home) _____

II. Proposal

Purpose of Request (check one)

New Route ____ Bolt Replacement ____ Bolt Addition ____

Location of Route (map attached ____)

Area _____ Formation _____ Route _____

If new route, describe location as specifically as possible.

Drill Use Requested

Estimated Time Required _____ Number of days _____

Total Number of holes to be drilled ____ Size ____ x ____

Equipment to be installed _____

Equipment (other than drill) to be used _____

III. Map and/or Illustration

A request for the use of a power drill must be accompanied by a diagram or photograph which clearly illustrates the applicant's proposal. A map should also be included if the area is difficult to locate. The diagram must include the numbers and locations of holes to be drilled.

Applicant's Signature _____ Date _____

FIELD EVALUATION WORKSHEET

Date of Field Review	
Land Ownership Involved	
Management Zone	
Type & Level of Use in Area	
Type & Level of Use of Route	
Proximity to Other Climbs	
Route Features & Length	
Trailhead & Route Proximity	
Approach Trail	
Staging Area	
Descent Route	
Existing Fixed Anchors	
Potential for Removable Pro	
Geology & Surface Condition	
Vegetation Present & Condition	
Wildlife Habitat or Presence	
Area Slope, Soils, Erodability	
Conflicting Uses or Values	
Existing Resource Impacts	
Impact Mitigation Needs	

Notes:

Recommendation:

Prepared By: _____ Date: _____

Title: _____

REQUEST FOR PERMISSION TO USE A POWER DRILL

City of Rocks National Reserve

Pursuant to Cassia County Ordinance 91-10-1, the use of a power rock drill is prohibited within City of Rocks National Reserve without the written permission of the managing agency of the land or the appropriate private property owner.

An individual requesting permission to use a rock drill for the purpose of installing new bolts or replacing existing bolts for use as rock climbing anchors on public lands within the Reserve, must submit a request in writing and abide by all of the terms and conditions specified herein. Once a request is received, a field review will be conducted by a member of the City of Rocks Staff, or a representative, and a determination will be made within 30 days. If permission is granted, the applicant will have 30 days to utilize the permit, as specified.

The management of City of Rocks National Reserve recognizes that, in some instances, the use of a power drill may be appropriate in the interest of resource protection and public safety. However, it is management's intent to prevent further proliferation of bolts and climbing routes at City of Rocks National Reserve, as well as the associated impacts resulting from them. Requests for the use of power drills will be closely scrutinized to assure the careful management of resources, values and visitor opportunities.

A record of the field evaluation, providing the basis for approval or denial for each request, is on file in this office. A copy is available at the applicant's request.

Terms and Conditions:

- 1) Permission is granted to _____ exclusively.
- 2) Permission applies only to those sites specifically listed here and described in the request dated _____.
- 3) The date and time for using a power rock drill must be scheduled in advance with the Reserve Manager at City of Rocks National Reserve and must be completed within 30 days of this notice.
- 4) Postponement or cancellation of this privilege must be reported to the City of Rocks Reserve Manager.
- 5) No drilling will be allowed when other visitors are on or near the rock formation named in the site descriptions.
- 6) Every effort should be made to limit the number of holes drilled. Locations and numbers of holes to be drilled must be determined prior to initiating any drilling. The number of holes drilled may not exceed the amount specified here without submitting a new request.
- 7) Only camouflaged hardware may be installed at the site. Hardware color should be gray to blend with the natural color of the rock.
- 8) Gluing or chipping rock to create, augment, or reinforce holds, or other damaging practices such as forcibly prying off rock or destroying vegetation to enhance a route are prohibited.
- 9) Permission to use a power rock drill may be revoked at any time should circumstances arise which indicate the need for reevaluation or rescheduling.

It is to be expressly understood that neither the National Park Service, Idaho Department of Parks and Recreation, the private landowners within City of Rocks National Reserve nor any agents of the entities mentioned are to be held responsible for the soundness or serviceability of any hardware installed on the rock; the quality or location of any hole drilled to accommodate such hardware; the natural or manmade hazards which may be present at any of the sites; or the future inspection or maintenance of the climbing routes or associated hardware.

The permission granted here applies only to the use of a rock drill and not to the quality of holes to be created or to the quality of route to be established. The permission to use a drill at the specified sites is based on the finding that the effect of the activity will not result in significant impact to the cultural, or natural resources or values within the National Reserve.

Waiver and Acknowledgement of Risk:

I understand that rock climbing activities are inherently hazardous. While exercising the privilege which as been granted by the City of Rocks National Reserve, my heir and I agree to release from liability and hold harmless the National Park Service, Idaho Department of Parks and Recreation, all private property owners within City of Rocks National Reserve and all agents of the entities mentioned, from any accidental injury or death that I may incur while exercising the privilege.

I wish to make it expressly understood that my request for permission to use a power rock drill was based on my own desire and I will not be carrying out the activity as an agent of the state or federal government. I understand that though I have been granted permission to operate a power rock drill, I am not obligated to exercise this privilege.

Signed,

Permittee

Date

APPENDIX E

GLOSSARY OF CLIMBING TERMS

"Anchors." See "Protection."

"Belay" or "belaying" refers to the method by which one climber secures the rope should the other climber fall. Typically, one climber (the "belayer") remains on the ground and "belay" the other climber (the "leader") while he or she ascends the rock and places protection. Once the leader reaches the top, he or she then belays the other climber up the route. The rope which serves as a safety line while climbing, is usually fed through a device controlled by the belayer and which provides friction needed to "catch a fall"

"Bolts" or "bolting." See "Expansion bolts."

"Cammings devices" are mechanical devices, typically spring-loaded, used for protection. They are designed to expand once placed in a crack and are removed by manually retracting the spring. "Friends" and "Camalots" are brand-names of certain camming devices.

"Carabiners" are aluminum-alloy snap-links used to connect protection to the climber's rope.

"Chains" See "Slings"

"Chalk" typically consists of white-colored magnesium carbonate that is used by climbers to dry sweaty hands and increase adhesion. It is pulverized and carried in a hand-sized bag which is carried during the climb. The residue depends on the climate, type of rock, and other environmental factors.

"Chockstones" or "nuts" are typically made of aluminum alloy in various shapes, the most common being a trapezoid, with sizes ranging from 1/16th of an inch to eight inches in width. A chockstone is attached to a sling or cable capable of accommodating a carabiner. Chockstones are designed to be placed and removed by hand in the natural constrictions formed by cracks with irregular widths. Because chockstones are manipulated by hand, there is usually no damage to the rock in their use unless the rock is fragile.

"Clean Climbing" is a climbing method which uses no fixed protection to ascend a route. Only removable protection such as nuts and camming devices are used and then removed. Clean climbing causes little or no impact to the rock.

"Climbing community" refers to all climbers in general

"Expansion bolts" are two- to four-inch-long metal rods that are typically threaded on one end and machined on the other end so that the end expands with great force when the rod is either twisted or hammered into a drilled hole. The installation of these devices is known as "bolting". After the bolt is placed in a hole in this fashion, a "hanger" can be secured to the threaded end by use of a nut. Some varieties of bolts have hangers or eyes that are permanently pre-attached.

"Fixed protection" or "fixed anchor" is permanently placed protection, typically a bolt or a piton intended to be left in place for use by other climbers. (ie."fixed piton").

"Free climbing" is the sole use of the body and physical power to ascend; rope and equipment are used only as a backup should the climber fall.

"Free-Solo climbing" or free soloing is the ascent of a route without a rope or other means of protecting a climber in the event of a fall.

"Hand-placement" of bolts typically involves the use of a masonry bit set in a hand-sized holder and a hammer. The climber uses one hand to hold and twist the holder and bit while hitting the end of the holder with a hammer held by the other hand. The hole is created by percussion, and consequently may take up to an hour to drill.

"Hanger" is an "L" shaped piece of metal that is attached to a bolt and which bears an eye or hole capable of accommodating a carabiner. A hanger attached to a placed bolt is usually considered to be as permanent as the bolt.

"Hold Manufacturing" see "Rock Alteration"

"Leading" refers to the act of a climber ("The leader") ascending a route, placing or clipping into protection as he or she ascends and belayed from below by the second climber. The term is used to distinguish a climber ascending a route belayed from above, which involves relatively little risk.

"Natural Protection" is protection that uses the natural attributes of the rock, such as chickenheads. Natural protection does not include any devices which require a hammer to place, such as bolts or pitons. See also "Clean Climbing".

"Nuts." See "Chockstones."

"Pitch" is the distance a lead climber ascends before stopping to belay the second climber's ascent. The distance of a pitch is limited by the length of the rope used and the location of ledges and anchor stations.

"Pitons" are variously sized iron alloy spikes with an eye or hole in which a "carabiner" can be clipped. Pitons are placed in naturally occurring cracks with repeated blows from a hammer. They usually can be removed by hammering the piton from side to side until enough of the surrounding rock is pulverized to allow withdrawal. Pitons are now considered to be permanently placed or "fixed" when placed and used for free climbing.

"Protection" or "anchors" indicate the various devices which a climber places in or on the rock for safety or to descend. The term includes chockstones, camming devices, pitons, and hangers/bolts.

"Rappel" is the method by which a climber descends a rope, usually by using a mechanical device which allows a controlled descent with little effort.

"Rappel-placement" is the placement of protection on rappel from the top of the cliff prior to the first ascent. The term rappel-placed bolts refers to bolts placed in this manner.

"Rating" or "standard of difficulty" is a numerical index used to indicate the difficulty of free climbing a particular route. The rating or standard is set by the first ascensionist then revised by subsequent parties if necessary. The index ranges from 5.0 to a current maximum of 5.14. (the "5" indicates that the type of climbing is technical free climbing.) Whereas virtually any able-bodied person can climb 5.0 with little practice, only Olympic-caliber trained athletes can climb 5.14.

"Retro-bolting" is the practice of bolting an existing route after the first ascent to make it safer or more convenient to lead.

"Rock Alteration" involves the physical modification of the rock surface and may include filing off rough edges, reinforcing loose hand and foot holds with epoxy, or creating new holds by using tools such as chisels, hammers, or power drills.

Route" is the vertical path on the rock face which a climber ascends. A route is created when it is first climbed and is usually given a name by the first ascensionist, which is recorded in a guidebook for other climbers to use to find and identify the route.

"Route chopping" is the removal or destruction of fixed protection, typically rappel-placed bolts, on a particular route so that the route no longer can be led. Though chopping occurs infrequently, the motive is usually based on the style or environmental ethical differences between climbers.

"Slings" are knotted loops of nylon webbing that are usually left behind when a climber descends from the top of a route (typically by rappelling or being lowered off by the belayer). Sometimes metal chains are used for the same purpose rather than slings because chains are easier to use once in place and last longer than slings.

"Sport climbing" is a style of climbing typically involving short (less than a rope length) routes with fixed bolt protection. Previewing and practicing a climb is common and the emphasis is on technical difficulty rather than adventure. Climbs tend to involve less physical risk and rarely continue to summits. Routes generally end at top fixed anchors where the sustained difficulty of the climb lessens or the character of the rock changes.

"Technical" refers to the need for a rope and protection devices to ascend a route (5th class climbing). "Technical" is meant to distinguish from climbing in which a rope is needed but protection devices are not (4th class climbing) or climbing in which a rope and protection devices are not needed (3rd class climbing).

"Traditional climbing" is a style of climbing where protection is typically placed by the leader with value placed on unpracticed ascents and higher degrees of personal risk than in sport climbing. The ascents are normally done from the ground to the top of the route and any fall or weighting of the rope generally dictates that the climber be lowered to the ground or stance to restart the climb. Traditional climbing routes are typically protected by artificial chockstones, although in areas with few cracks, belts placed by hand by the leader during the ascent are considered acceptable. Traditional climbs are generally multi-pitch climbs and summits are common objectives.

APPENDIX F

A SUMMARY OF THE TWIN SISTERS RESOURCE STUDY

December 1993

The following is a summary of the Twin Sisters Resource Study which includes detailed reports and supporting data of the information provided here.

Introduction

The Twin Sisters Resource Study was initiated in March of 1993 in response to concerns regarding technical rock climbing activities on the two prominent rock spires located in the southern portion of City of Rocks National Reserve. Twin Sisters is not only an attractive rock climbing area but it is also one of the important features in the area's National Historic Landmark description due to its association with the California Trail. With this special status comes the responsibility of assuring that public use will not derogate the natural features and historic value of Twin Sisters.

Project Summary

The purpose of the Twin Sisters Resource Study is to evaluate the effects of rock climbing on and immediately adjacent to the formation and to make a determination of what effect, if any, climbing has on the natural and cultural values of the feature. As stated in a March 24, 1993 memorandum from Regional Director Odegaard, the final study report "will form the basis for a long-term management decision as to whether climbing and other recreational impacts warrant the permanent closure of the Twin Sisters to climbing, or allow such use with certain conditions and restrictions". Components of the resource study are:

- 1) an evaluation of the natural and cultural resource significance of the feature
- 2) an assessment of any resource degradation caused by past and present climbing use
- 3) recommendations concerning actions that may be taken by park management to mitigate or minimize future climbing impacts on the Twin Sisters

Project Background and Issues

Twin Sisters was an important, recognizable point of reference, observable in the background and middle-ground views of the emigrants travelling along the California Trail. The impressive feature was mentioned in journals and on maps of the early

travelers and is specifically listed and located within the National Historic Landmark. The significant natural qualities of the Twin Sisters is based on geologic diversity and morphology. The two spires vary in age from 25 million years old to 2.5 billion years old. While the older (south) formation is not unique by its age or composition at City of Rocks, it is the contrast in age and geology to the "Sister" formation to the north, and its close proximity to it, that provides considerable geologic interest.

During the development of the draft Comprehensive Management Plan (CMP) for the City of Rocks National Reserve, it became apparent that there were differences of opinion among planning team members, management, regional staff and members of the resource preservation community about how to provide for the use, protection and management of Twin Sisters. Once a determination was made concerning appropriate uses and functions, a management zoning designation could be applied. The principal issue at Twin Sisters is the appropriate level of climbing and associated impacts that should be permitted on the feature.

Climbing Twin Sisters is a popular recreational activity. The monoliths are popular with the climbing public because the feature offers technical climbers good-quality, multi-pitch climbs which cannot be found on other rock formations within the Reserve. Given the proximity of the road, parking lot and picnic area, other types of public use has also caused impacts in the vicinity of the Twin Sisters formation. The focus of this study is on rock climbing related impacts and therefore, to the greatest extent possible, the study is limited to areas used specifically by climbers.

The issue to be resolved by the resource study is whether impacts to the significant cultural and natural values of Twin Sisters warrants prohibition or restriction of rock climbing on the spires. Also to be reviewed is the level of significance of the Twin Sisters feature itself; both as a cultural and natural resource. The latter point requires an assessment of the feature for its relative significance in comparison to other formations in the reserve, and recognition of its value within the broader context of the reserve's National Natural and National Historic Landmark status.

For these reasons, the March 24, 1993 memorandum from the Regional Director called for a moratorium on public climbing and prohibiting any but incidental recreational use of Twin Sisters. The moratorium is in effect and will be in place until findings of the resource study are available. The Regional Director's memorandum further instructed that the CMP's zoning designation for the formation will either be changed or retained pursuant to the decision based on the outcome of the Twin Sisters Resource Study.

The Study Tasks

The directive for the Twin Sisters study identified numerous tasks to be completed by park and regional NPS staff with the assistance of consultants and researchers. The field tasks were accomplished from May through December 1993 by staff and assistants at City of Rocks, and the entire study was completed in July 1994. The following study tasks were accomplished:

- * Task directive and study coordination with Idaho Department of Parks and Recreation
- * Task directive and study coordination with Idaho State Historic Preservation Officer
- * Examination of Geological Significance of Twin Sisters
- * Review of National Natural Landmark designation
- * Examination of Historical/Ethnographic Significance
- * Development of methodology to evaluate climbing impacts
- * Documentation of written and oral history of climbing on Twin Sisters
- * Documentation of field baseline condition of the Twin Sisters formation
- * Photographic analysis of current visual impacts of climbing taken from various viewpoints toward Twin Sisters, and at different times of day
- * Documentation of visible past and present impacts of climbing activity on the rock
- * Documentation of visual impacts of climbing hardware, with supporting photographs
- * Identification and documentation of any conflicts between climbers and other user groups
- * Preparation of a written report with accompanying photographs, documenting impacts
- * Recommendations on future management of Twin Sisters and evaluation of potential impacts of study recommendations on visitor experience and resource protection

Detailed reports and supporting data for the tasks listed above are compiled in the project report entitled "The Twin Sisters Resource Study" and are summarized in this document.

NPS Policies, Practices and Guidelines

Twin Sisters lies within City of Rocks National Reserve which is a unit of the National Park System. As such, NPS policies, guidelines and philosophies apply to the management of its use and preservation.

NPS policies and practices have long recognized and allowed rock climbing as a legitimate recreational activity (NPS Management Policies, 8:2). As with any human activity, however, climbing will have impacts on park resources and values (1:3). The impacts however may not necessarily entail impairment of park resources. The objective of management is not simply to prevent any human-induced change from occurring, but to determine how much change will be allowed to occur without such impairment (Natural Resources Management Guidelines, (NPS-77), 5/91; 3:74). The protection of park resources - natural, cultural and aesthetic - is the primary goal of park management. Uses of the parks may be allowed which do not impair those resources. The application of these principals must be applied to climbing.

According to NPS policies and guidelines, management actions should be implemented on a graduated scale from indirect (i.e. education) to direct (i.e. closures), and be the minimum necessary to protect park resources (NPS-77, 3:75; 8:2). If it is uncertain whether an activity will result in impairment or not, the activity will be managed to assure no impairment until the doubt is resolved.

The objective of the Twin Sisters Resource Study and the institution of a moratorium on climbing pending a management determination based on the evaluation of data and mitigation options is in keeping with NPS guidelines and policies.

Rock Climbing on Twin Sisters

The rock climbing opportunities on Twin Sisters are unique at City of Rocks. The higher, northern most spire, known to climbers as "The Eberhorn", offers superb multi-pitch climbing routes involving traditional ("clean climbing") style, through roofs and up classic crack climbing routes to "summit" at 6,838 feet. Descent also employs down-climbing and route-finding skills, likening an ascent of The Eberhorn to alpine climbing or mountaineering. The convenience to the road eliminates the commitment involved in true mountaineering, but the summit objective, teamwork required and isolation experienced on a climb of Twin Sisters is unparalleled at City of Rocks.

The first known technical rock climbing at City of Rocks dates back to the early 1960's. Twin Sisters received some of earliest ascents in the area. The South Face route on the north Sister, climbed in 1962, was the first reported route. The classic Lowe Route, first climbed in 1964, still remains the most popular route on the Twin Sisters. The climbs established during the

60s, 70s and 80s were not just of the attractive cracks and roofs, but also of the high quality rock faces. During the early days of climbing on Twin Sisters, when pitons were still used for protection in the cracks, bolts were placed for protection on face climbs using a hand drill while the climber was leading the route. Installation of fixed anchors (bolts, pitons, etc.) was labor intensive and this permanent hardware was placed sparingly. The spacious distance between bolts and the boldness required to climb some of the routes, is in sharp contrast to the well-protected modern "sport climbs" where bolt protection has been placed on rappel with the ease of a power drill. Modern sport climbs of great difficulty do exist on lower faces of Twin Sisters, but still, it is the longer, traditional crack and face climbs which most people are seeking when they climb the Sisters.

Climbing occurs primarily on the north spire of Twin Sisters: The Eberhorn. The climbing routes are located on the north, south and east aspects and descent generally follows the northeast shoulder or the south face. There are several long, classic, summit-bound routes on the rock, as well as a half dozen single pitch (less than 150 feet) sport climbs which are located on the southeast and east sides. Presently, 17 routes have been documented on The Eberhorn and of those, six of the climbs receive the vast majority of climbing use on Twin Sisters. The quality of the climbs on The Eberhorn is excellent and difficulty ratings range from an easy 5.5 to a very difficult 5.12b.

On the lower South Sister, there are a hand-full of climbing routes on its south, and southwest sides. A few of the routes are long, traditional climbs which have not been climbed in many years. Four other routes are short (80 feet), bolt-protected sport climbs, concentrated in one area at the base of the south face. The rock on the South Sister is not the same high quality as that of the north spire and consequently, these routes receive very little use. In general, climbing activity on the southeast Sister occurs infrequently.

Twin Sisters does not presently receive the high level of use which formations like "Elephant Rock", "Parking Lot Rock" or "The Breadloaves" receive. This is partially because of the type of climbing and the fact that the Sisters is removed from other climbing and camping areas in the reserve. Fortunately, the emphasis on very accessible areas with a concentration of short climbs has allowed Twin Sisters to retain its traditional quality.

A History of Rock Climbing on Twin Sisters

Twin Sisters has several of the longest climbing routes in the Reserve and are less frequently climbed than the smaller formations in the central City area. Since 1985, the majority of new routes on or near the Sisters have been on the smaller domes, boulders and corridors in the vicinity rather than on the larger formation.

Bold scramblers can reach the summits without technical climbing. It is reasonable to assume that pioneers, cattlemen, and Native Americans over the preceding centuries may have climbed one or both of the spires, as they are much higher than the surrounding rocks, and offer clear views in all directions. The first documented climbing routes on the Sisters were established in 1962.

The reported history of technical rock climbing at City of Rocks began in 1962. The Ogden, Utah, climbing club, known as "The Steinfelds", and members of the Lowe family and their friends, began to visit the City regularly.

Over the next five years, all of the major formations in City of Rocks were climbed by one or more routes. The Lowes chose not to name routes or publish information about them. They felt the sense of adventure and discovery of a first ascent could thus be extended to subsequent climbers. As a result, any history of technical climbing on the Twin Sisters is dependant on the memories of the participants.

The South Face of The Eberhorn is reported to have been the first climbing route on Twin Sisters and was established in 1962. It has a difficulty rating of 5.5. The popular "Lowe Route" was pioneered in 1964. The first route on the older formation, the South Sister, was Tenny's Route, rated 5.9R (run-out) and was established in 1967. First ascents by other routes on both Sisters followed. Climbers of the early routes utilized the rock's natural attributes and pitons placed in cracks for the climber's protection.

Word of the unique climbing opportunities at City of Rocks circulated among Utah and Idaho climbers. By 1969, groups from Rexburg, Idaho Falls, and Pocatello, Idaho; and Ogden and Salt Lake City, Utah, were visiting City of Rocks regularly. In addition, groups of sport rappellers climbed the Twin Sisters in order to rappel off them.

As visitation increased, the City of Rocks began to be mentioned in climbing magazines in the U.S. and England. In 1985, when the first climber's guide to the City of Rocks was published, there were five climbs listed for The Eberhorn; and three on the South Sister's west face. Of these eight, all but the Balcony Route on The Eberhorn had been pioneered by the Lowe group.

In the 1991 edition of the guidebook, there are twenty-five named routes on the Twin Sisters. Since 1990, no new climbing routes have been added to the Twin Sisters but ascents of the existing routes remain popular and unique.

Summary:

The Twin Sisters offer a variety of high quality multi-pitch climbs as well as challenging sport climbs in a scenic location.

Reported technical climbs on Twin Sisters began in 1962. Over the past three decades, technical climbing has occurred primarily on the South and East faces of The Eberhorn and on the West face of South Sister, with some short climbs on the lower East face. Most routes are not visible to the casual observer, and some are not obvious even to a climber on the rock. Some climbers utilize routes previously established in the 1960's and '70s. The Lowe Route, established thirty years ago, is still the most popular climbing route on Twin Sisters.

Climber Registration

On June 28th, climber registration boxes were installed at the base of both the north and south climber approach trails to The Eberhorn. The registration requirement remained in effect until November 1st, though the weather curtailed climbing activity on Twin Sisters at the beginning of October. Available information indicated that most of the climbers voluntarily registered before climbing on the formation, though some did not provide all of the requested information. It should be noted that no climbs were recorded on the South Sister and it is estimated that, other than researchers, only one or two other parties climbed on the formation during the season. Shorter sport climbs on the lower east face are the only climbs on the South Sister which have received use in recent years, though very infrequently.

The following is a summary of the registration data collected June 28 through October 31, 1993:

Registration Box		# of parties	# of climbers
1) North Approach	Total	52	125
	July	19	
	August	14	
	September	13	
	October	6	
2) South Approach	Total	106	258
	July	47	
	August	29	
	September	21	
	October	9	
<u>Total Registered</u>		<u>158</u>	<u>383</u>
Average party size = 2-3 people			2.42

(Note: 20 parties registered for south aspect climbs at the north registration station. A trail which traverses between north and south approach trails has been used by those starting up the wrong trail.)

Climbs Recorded	Number of parties
Low Route	52
S.E. Face Routes (Safecracker, Straight Edge)	34
Guides Route	18
South Face	14
Balcony Route	11
N.E. Shoulder	1
Other Climbs (not on either Sister)	13

Descents Recorded	Number of parties
South Face	75
Rappel (1 pitch S.E. Face Routes)	33
N.E. Shoulder	6
Static Cling	4

Demographics

Origin and number of parties

Utah	39	Alabama	1
Idaho	32	Kentucky	1
California	12	Nevada	1
Colorado	10	New Hampshire	1
Wyoming	8	Pennsylvania	1
Oregon	7	Arkansas	1
Washington	7	Ohio	1
New York	3	Germany	9
Texas	2	England	5
Montana	2	Switzerland	4
Massachusetts	2	France	2
		Canada	2

Climbing Route Inventory

An inventory of established climbing routes on Twin Sisters was conducted in September and October 1993. The inventory consisted of examining each route listed in the climber's guide to City of Rocks, Idaho; Dave Bingham, 1991 edition. Routes were surveyed for fixed protection in the form of pitons, bolts, bolt and chain top anchors, and slings. Routes were measured for width and length. Visible chalk on routes was recorded, as were variations of the routes, and probable descent routes.

Photographic Documentation

Over 300 pictures were taken and cataloged as part of the documentation for the Twin Sisters Resource Study. Pictures were taken of all aspects of Twin Sisters and in various lighting and different times of day. The photography was done by a professional photographer under contract as well as by

researchers during the process of conducting field work.

In order to be consistent with the historic perspectives photographed for the City of Rocks draft Comprehensive Management Plan, a map of the photo-points and copy of CMP slides were provided by the Denver Service Center's Landscape Architect. The pictures were re-shot at various times of day.

The photographic subject matter is as follows:

- 1) Historic perspectives as seen from the California Trail

- 2) Views of each aspect of each formation
 - from vantage points of other users
 - from approach trails
 - from vantages to view each climbing route

- 3) Pictures with climbers on routes
 - in foreground, middle ground and background views

- 4) Photographic journal of an ascent (start to finish)

- 5) Trail system

- 6) On Rock
 - visible impacts (fixed anchors, chalk..)
 - views of California Trail from the rock

- 7) Twin Sisters Resource Study project pictures
 - vegetation study
 - wildlife study
 - geology study
 - route inventories

- 8) Other uses/users at Twin Sisters

All slides are included in a supplemental notebook, as shown in the project report appendix listed in the Table of Contents.

Selection of Study Sites

Prior to initiating the field work on the rock, seven climbing routes were selected as study sites. This enabled the geology, vegetation and wildlife field studies to be conducted on the same routes. The seven study sites are representative of the broad spectrum of route types which are present on Twin Sisters. They vary in length, aspect, exposure, slope, surface and rock features. They also vary in popularity, difficulty and climbing methods employed. The seven study sites are listed as follows:

Route	Spire	1st Ascent	Aspect	Pitches	Rating	Type
S.Face	N	1962	S	2	5.5	face usual rappel
Lowe Rt	N	1964	SE	3	5.9	crack/ face/roof
Safecracker	N	1989	SE	1	5.10d	face
Static Cling	N	1984	E	3	5.11c	crack/ face
Balcony Rt	N	1969	N	3	5.10b	crack/ roof
NE Shoulder	N	unk	NE	2-3	rappel	route
Milky Way	S	1990	E	1	5.11a	face

The geology, vegetation and wildlife studies used comparison of sites as part of the analysis of disturbance. The climbed areas along the routes are referred to as experimental sites. The vegetation and wildlife studies used sample plots along the "experimental sites" and "control sites" with the control sites being unclimbed areas adjacent to the route. In the wildlife study, "distant control sites" were also used which were unclimbed areas not located on Twin Sisters but as similar as possible in terms of aspect, rock type, ledges and other features. During the geology study, the seven routes were used as experimental sites and two frequently climbed routes in other areas of the reserve were used as distant control sites.

It must be recognized that an analysis of disturbance in this study relates to the cumulative effects of climbing over time and under various circumstances. In some cases, the data collected on particular climbing routes reflect the impact of an unquantifiable amount of ascents over thirty years. In other cases, detectable disturbances probably occurred during the establishment of the route, rather than during subsequent ascents. The data collected during this study provides baseline information to monitor future changes over time. It is impossible to determine the rate of change which has already occurred on Twin Sisters without previous monitoring.

The Effects of Climbing on the Geologic Integrity of Twin Sisters

The purpose of this study was to evaluate and document the geologic impact from rock climbing on Twin Sisters.

The seven sample climbing routes were examined either on ascent or rappel. A strip map, at the scale of 1 inch to 10 feet, was used to note the locations of geologic features, climbing hardware, and photograph sites. The rock was closely inspected where fixed anchors on each of the routes are present. Unclimbed

areas adjacent to the routes were examined for comparison. Because no significant disturbance was noted on the climbing routes, two of the most frequently climbed routes in the reserve were chosen as baseline sites. By using frequently climbed routes as baseline sites, the potential for future geologic impact to Twin Sisters from climbing can be determined.

The two juxtaposed pinnacles of Twin Sisters have significant geologic differences, but similar mineralogy and weathering characteristics. The northernmost spire is part of the Tertiary Almo pluton while the other is a strongly foliated megacrystic Archean gneiss. The Sisters have both "fresh" and "hardened" surface textures and both possess Aplite dikes, as well as exfoliation jointing.

In general, there was no observable difference between the surface of a route and the unclimbed surface to either side of the route. Rock surfaces around climbing hardware show no signs of increased weathering or cracking due to increased frost wedging. Where erosion channels are present, no apparent differences in surface texture can be seen between the surface in the channel and the surrounding rock. Where there are closely spaced exfoliation joints, no signs of damage are present. This suggests that erosion has not increased due to traffic in the channel. No wear or unusual weathering occurs around the slings left at belay stations on the rock for repeated use.

On the Balcony Route, lichen cover is so pervasive over the last 120 feet of the climb that the rock surface is not observable. None of the small exfoliation cracks show signs of freshly broken edges or damage due to climbing.

On "Static Cling", some minor damage was detected on the rock surrounding a bent bolt. A few polished patches have developed on frequently used holds. At a belay stance, where a pair of bolts with chains attached are present, a slight amount of wear has developed on the hardened surface beneath one of the bolts.

The granitic and gneissic rocks of Twin Sisters are apparently very resistant to erosion and damage. The only detectable impact to the geology due to wear were some slightly polished hand and foot holds. This polish is only slightly more apparent on the heavily used climbs chosen as control sites. Potential for impact on the geologic integrity of Twin Sisters due to recreational rock climbing is very slight.

Assessment of Impact to Vegetation

The purpose of this study was to evaluate and document cumulative impacts that rock climbing and its related activities have had on the vegetation communities on and around the Twin Sisters rock formation.

The vegetation study had three primary objectives:

- 1) inventory and map the vascular flora of the Twin Sisters area and identify the presence of sensitive or introduced species
- 2) assess vegetation disturbance in the areas used to hike up to the various climbing routes as well as at the staging areas at the base of the routes where climbers prepare for ascents
- 3) assess vegetation disturbance on the rock surface from rock climbing or route establishment activities

The plant list was completed for the Twin Sisters area and incorporates data from a reserve-wide vascular plant inventory which has been compiled over the past three years. The vegetation map was developed using multi-spectral videography from remote sensing data collected via aircraft on June 19, 1993. The map was then correlated with the vegetation on the ground.

All primary and secondary approach trails in the Twin Sisters area were mapped in 1992. Additionally, the primary trails were measured in 1993 and a trail diagram was overlaid onto the vegetation map. Area disturbance was also measured at the various staging areas where climbers prepare for ascents.

In order to assess vegetation disturbance on the rock, a comparative study was conducted using pairs of plots at random intervals along the seven sampled climbing routes. The paired plots included an experimental plot located on the climbed area, and a control plot in an unclimbed area adjacent to the route, each .5 meters by .1 meters in size. Within each plot the lichen genera was identified and the percent cover of each genera was recorded.

On the rock, no trends were found in species distribution. There was no significant variance in the distribution or composition between experimental plots and the control plots. Measurable differences were found, however, in total coverage between most paired plots. There was usually less lichen cover in the experimental plots than in the control plots. On two of the sampled climbing routes; "Milky Way" on the South Sister and "Safecracker" on The Eberhorn, the opposite was true, however.

Aspect, slope and texture may also be factor in the amount of lichen cover found. The patina/course and patina variables showed no significant differences while the course and weathered/course variables possessed a greater amount of lichen cover in the control plots.

Conclusion:

There are no threatened or endangered plant species which are vulnerable to disturbance by climbing activity on Twin Sisters. Trails approaching the base of climbs meander and need to be consolidated and stabilized in certain sections. Staging areas are primarily on rock and are not expected to expand greatly or be significantly detrimental to vegetation. Established climbing routes generally possess less lichen coverage than unclimbed routes. Rock texture is also a factor in the vegetation coverage. While there is a measurable reduction in vegetation on the routes, it has not been so severe as to have eliminated lichen cover on any of the routes. Species distribution and composition do not seem to have been effected by climbing traffic.

It is beyond the scope of this study to distinguish between the amount of lichen removal which occurred at the time which the route was established and how much has occurred due to subsequent climbing or at what rate.

The Twin Sisters Wildlife Study

The objective of this study is to inventory the vertebrate and invertebrate species found on or near the Twin Sisters and to evaluate the effects of climbing and human presence on them.

The field work was conducted in September and October. The information presented here does not reflect complete baseline data. This aspect of the Twin Sisters Resource Study must be continued during the spring and summer in order to record observations during the raptor breeding and nesting seasons. Critical information regarding nest selection, effects of human presence on and off of the rock, and fledgling success is still needed.

The seven study routes and three unclimbed areas were surveyed. The sampled experimental sites on the seven study routes and adjacent paired control sites were identical to those used during the vegetation study. A total of 69 pairs of study plots were sampled. The three unclimbed "distant control sites" were remote from any climbing activity and similar to the experimental sites in terms of aspect, rock type, ledges and crevices.

Each study plot was searched once for wildlife or traces of wildlife on the rock. This included insects, spiders, bats and other vertebrates and invertebrates. During the on-rock survey, observations of birds in flight were also recorded as well as characteristics of the site at which the observations were made. The survey was conducted while either climbing or on rappel.

Once every two weeks, binoculars were employed to search the rock faces. Any bird sightings within 50 yards of Twin Sisters and bird behavior were recorded. Surveys lasted one hour and were conducted before 11:00 a.m.

During the survey, no threatened or endangered species were discovered and no extraordinary observations were made. Species observed on the rock were commonly found insects (Silverfish, Mud Dauber Wasp, Grass Spider...). Traces such as Swallow nests and bird droppings were also seen. Of the birds observed, one raptor; a Red-tailed Hawk was observed flying over the Twin Sisters. One observation worth monitoring was a raptor nest on the northwest shoulder of the South Sister. While the nest does not appear to have been recently active, it is easily seen from The Eberhorn's South Face descent route and could warrant a seasonal closure of that route during nest selection and if the nest became occupied. It should also be mentioned that earlier in the season, a Golden Eagle was seen perched near the picnic area. Golden Eagle's have been known to nest farther out on the "Twin Sister's ridge" in the vicinity of "Weather Wall".

As previously mentioned, additional baseline gathering is needed next spring and summer. Studies on the effects of human presence on specific species have been conducted elsewhere and should be used, depending on raptor species observed. The need for spring and summer monitoring should not delay the development of Resource Study recommendations, however. Seasonal closures of climbs or faces for raptor protection is commonly done and has been highly successful at City of Rocks and other National Park areas.

Conflicts Between Climbers and Other Reserve Users

Twin Sisters has a higher potential for conflicts between climbers (or other visitors) and private landowners. Gates on public land which control cattle are used to access campsites and climbing approach trails on public land at Twin Sisters. Gates are occasionally left open. Visitors at campsites or parking areas who are picnicking or approaching the rock to climb have had a few conflicts when domestic animals cross paths with livestock. The private land adjacent to Twin Sisters is off limits to all visitors, yet the current climbing guide has publicized climbs on that land for many years. This sometimes misleads visitors. During the 1993 season, no problems were reported between climbers and private property owners or other users at Twin Sisters.

Assessment of the Cultural Significance of Twin Sisters

Background:

This briefing summarizes the current status of research on the cultural significance of the Twin Sisters Formation at City of

Rocks. It is intended to provide a context for evaluating the appropriateness of climbing and other recreational activities on and surrounding the Twin Sisters.

Historical Significance:

City of Rocks was designated as a National Historic Landmark because of its significance as a major landmark on and a well-preserved segment of the California Trail. The National Reserve was specifically established to protect this nationally significant cultural resource, as well as the geological resources which have been recognized by designation as National Natural Landmark. The Twin Sisters formation is widely acknowledged to be the symbol of the National Historic Landmark. For the California and Oregon-bound emigrants traveling south along the California Trail, as well as for those who chose to follow the Salt Lake Cutoff, the Twin Sisters were a beacon, marking the junction of the two trails and pointing the way to Granite Pass and beyond to California. The importance of the Twin Sisters, also known to some as Steeple Rocks, is underscored by the numerous entries found in emigrant diaries which describe the unique features of City of Rocks and the Twin Sisters in particular. None of these diary references describe climbing on the Twin Sisters by the emigrants.

Ethnographic Significance:

In contrast to the wealth of information available to document the historic significance of the Twin Sisters, there is little concrete data at this time to either support or dismiss the significance of Twin Sisters to Native American groups. It is known that several Shoshoni bands utilized the area to gather a variety of resources, including pinion nuts which were an important staple in their diets. It is also known that this practice extends back into prehistory and continued at least up through the 1950s for some contemporary groups of Shoshoni. This information has been gathered through oral interviews, secondary sources, and consultation initiated with Shoshoni groups at the Fort Hall, Wind River, and Duck Valley reservation, as well as with members of the Northwestern Shoshoni band.

Beyond the importance of the area for food resources, however there is little known about the spiritual values that City of Rocks, and Twin Sisters in particular, may hold for Native Americans. References to the importance of the area in scattered remarks made by tribal members, experience in working with Native American peoples to try to understand their perspective on their environment and its components, suggest that these spiritual values may indeed be present, particularly for such a unique area. Thus, at this point in time, we can neither conclusively identify or rule out Twin Sisters as an important ethnographic resource. It is the historians recommendation that ethnographic research continue as planned (an ethnographic overview of the area is currently funded) and that the Twin Sisters formation be

treated as a potential ethnographic resource until it can be conclusively proven otherwise.

Contemporary Significance:

When a property is being evaluated for National Historic Landmark status, the National Register criteria of integrity must be met without compromise. Two of the seven criteria are "association" and "feeling". City of Rocks is considered to be exceptionally significant as a remnant of the California Trail by contemporary historians because of the opportunity it presents to experience the passage through the City of Rocks, untrammelled by modern intrusions, much as the 19th century emigrants did. The views of Twin Sisters seen while traveling northwest along the Salt Lake Cutoff, south along the California Trail, or from standing atop Bath Rock are all considered essential elements of this experience. The preservation groups who have worked so long to preserve and protect this experience have clearly stated that rock climbing on Twin Sisters is an inappropriate activity that compromises this important experience.

Recommendation:

The Twin Sisters formation is one of the most important features of the California Trail within City of Rocks. Its well-documented historic significance, its potential ethnographic significance, and the unique opportunity to experience a segment of the California Trail in a setting that retains the feeling and association of the original migration era, are all excellent reasons to protect this resource from what some consider to be optional, inappropriate uses such as climbing. It is recommended that the boundaries of the California Trail Sub-zone, which delineates the area meriting the highest level of resource protection in the Comprehensive Management Plan, be redrawn to incorporate the Twin Sisters formation.

(Note: The study recommendation to include the Twin Sisters formation in the California Trail Subzone was incorporated into the final Comprehensive Management Plan in 1994.)

Resource Study Conclusion:

1) The assessment of natural resource impacts caused by climbing use did not reveal any trends which suggest eventual impairment of the natural state of Twin Sisters if rock climbing were to continue on the formation. The presence of climbers or climbing equipment was found to have no significant visual impact in the middle ground or background when viewed from the California Trail.

2) An evaluation of the cultural resource significance revealed that the Twin Sisters formation is one of the most important features of the California Trail within City of Rocks. It has well-documented historic significance and potential ethnographic

significance, and provides a unique opportunity to experience a segment of the California Trail in a setting which retains the feelings and association of the original migration era. Based on these findings, it was recommended that Twin Sisters be closed to climbing and all public use.

3) An evaluation of the natural resource significance of the feature revealed that, while the two spires are vastly different in age and geology, their characteristics are not unique to City of Rocks or the region. It is the juxtaposed position of the two contrasting pinnacles which provides significant geologic interest. The natural resource significance associated with Twin Sisters has not been affected by climbing activity on the formation.

The recommendation, based on the findings of the resource study, prohibits all public use, including climbing, on and in the immediate vicinity of the two spires known as Twin Sisters. This level of protection is necessary due to its association with the California Trail and status as an outstanding feature of the National Historic Landmark.

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APPENDIX G

HISTORICAL REFERENCES TO TWIN SISTERS

Through research conducted in association with the Twin Sisters Resource Study, 61 emigrant journal entries were found which referred to Twin Sisters or its vicinity.

The Oregon-California Trail Association provided summaries of 98 diaries that had references to the City of Rocks area, based on a word search of their COED program using the following key words:

Twin Mounds
Steeple Rocks
Two Large Mounds
Twin Mounts
Steeple Rock
Steple or City Rocks
Twin Mountains
Steeple Rocks or ..City Rocks
Steple Rocks
Steeple or City Rocks
Twin Buttes
Two Dome Mountains
Steeple or Castel Rocks
Two Buttes
Henney's Cut-off
Steples Rock
Sisters
Steple Rock
Steeple Rock Valley
Hensleys cut off
Twin Butes
Twin Pyramids at Gate
Twin Mouns
Sisters Valley
Cutoff from Salt Lake

Using as a guideline references that clearly referred to the Twin Sisters or referred to the formation as approached from the Salt Lake Cutoff, 61 of the 98 journals, or approximately 2/3 referred to the Twin Sisters and vicinity.

Individual diarists include: Pierre Barlow ('48), Philip Badman ('49) John Benson ('49) B.R. Biddle ('49) Dr. Wakeman Bryarly (49) Philip F. Castleman (49) Sterling Clark (49)

Cornelius Cole (49) Capt. David DeWolf (49) Simon Doyle (49)
Isaac Foster (49) Robert Green (49) Israel F. Hale (49)
James M. Hutchings (49) John Thompson Kinkade (49) Alexander
Love (49) Dr. Joseph Middleton (49) Joseph Sedgley (49)
Terrence Sheridan (49) Nelson Slater (49) David Jackson
Staples (49) Jaems Tolles (49) James Bennett (50) Peter
Branstetter (50) George Washington Brouster (50) Andrew Child
(50) Sarah Davis (50) John W. Ellis (50) Orange Gaylord (50)
John Grindell (50) Dr. Warren Hough (50) Eleanor Stillman
Ingalls (50) Dr. Mendall Jewett (50) Joseph Keck (50)
William Kilgore (50) Franklin Langworthy (50) Micjah
Littleton (50) Cyrus Loveland (50) William David MacLure
(50) James Mason (50) Lemuel Clarke McKeeby (50) Daniel
Millington (50) Silas Newcomb (50) Wellman Packard (50)
Lucena Parson (50) William Tell Parker (50) Lorenzon Sawyer
(50) Dr. J.S. Shepher (50) Shoemaker (50) Clavin Taylor (50)
Dr. A.H. Thomasson (50) William P. Thompson (50) Edward
Alexander Tompkins (50) William Turner (50) George Nelson
Wheeler (50) Lucian McClenathan Wolcott (50) Harriet Talcott
Buckingham (51) Samuel Heald (51) John Pratt Welsh (51)
Lucia Loraine Williams (51) Dr. W.W. Wixom (51) Angeline
Jackson Ashley (52) William B. Baker (52) Lewis Francis
Beers (52) John Clark (52) Mariett Foster Cummings (52) Dr.
John E. Dalton (52) J. M. Daughters (52) B.G. Ferris (52)
Richard Owen Hickman (52) William H.A. Johnston (52) Richard
Keen (52) Solomon Kingery (52) Charles O. Loomis (52) John
McKieran (52) Francis Sawyer (52) Charles G. Schneider (52)
Robert Lee Sharp (52) Thomas Turnbull (52) Isaiah William
Bryant (53) Samuel Hansaker (53) Andrew McClure (53) Catherin
Washburn (53) John Pratt Welsh (53) Simon Doyle (54) AJ
Molhersead (55) Kirk Anderson (58) James B. Brown (59)
Elphalet Crandall (59) Horace Greeley (59) William G.
McPherson (59) Lafayette Fish (60) Lavinia Porter (60)
Albert Wakefield (52)

Other journals:

Dan Carpenter's Journal (April 1850: Idaho State Historical
Society Library)

Dr. J.R. Bradway (March 1853: ISHS)

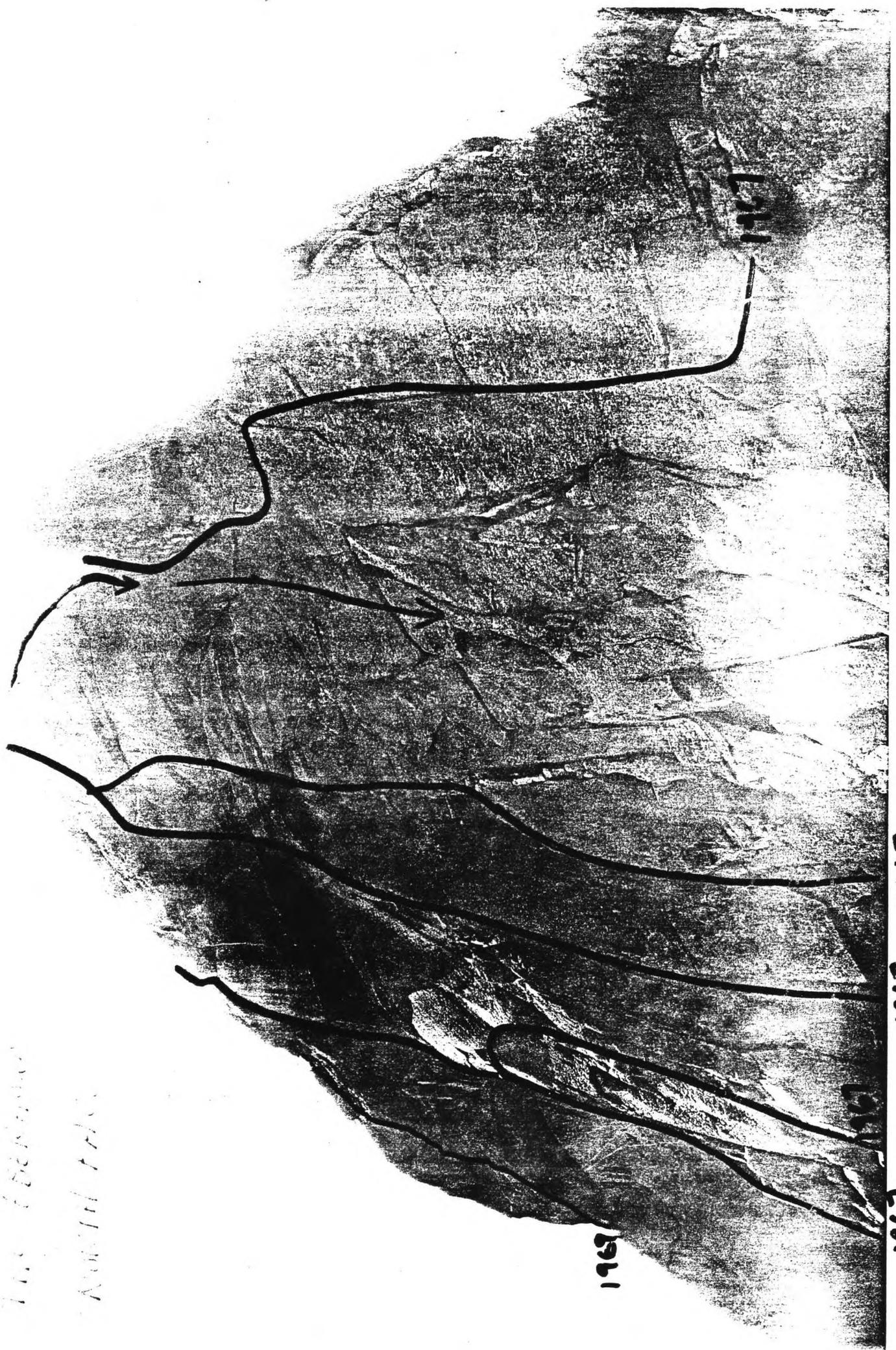
Prairie Schooner Lady: The Journal of Harriet Sherrill Ward,
1853: (IDHA)

James Evans (1860: (IDHS))

J. Roderic Korns (1851: IDHS)

John Clark (1852 : (IDHS)

THE FOREMAN
NORTH PAC



1967

1967

1967

1967

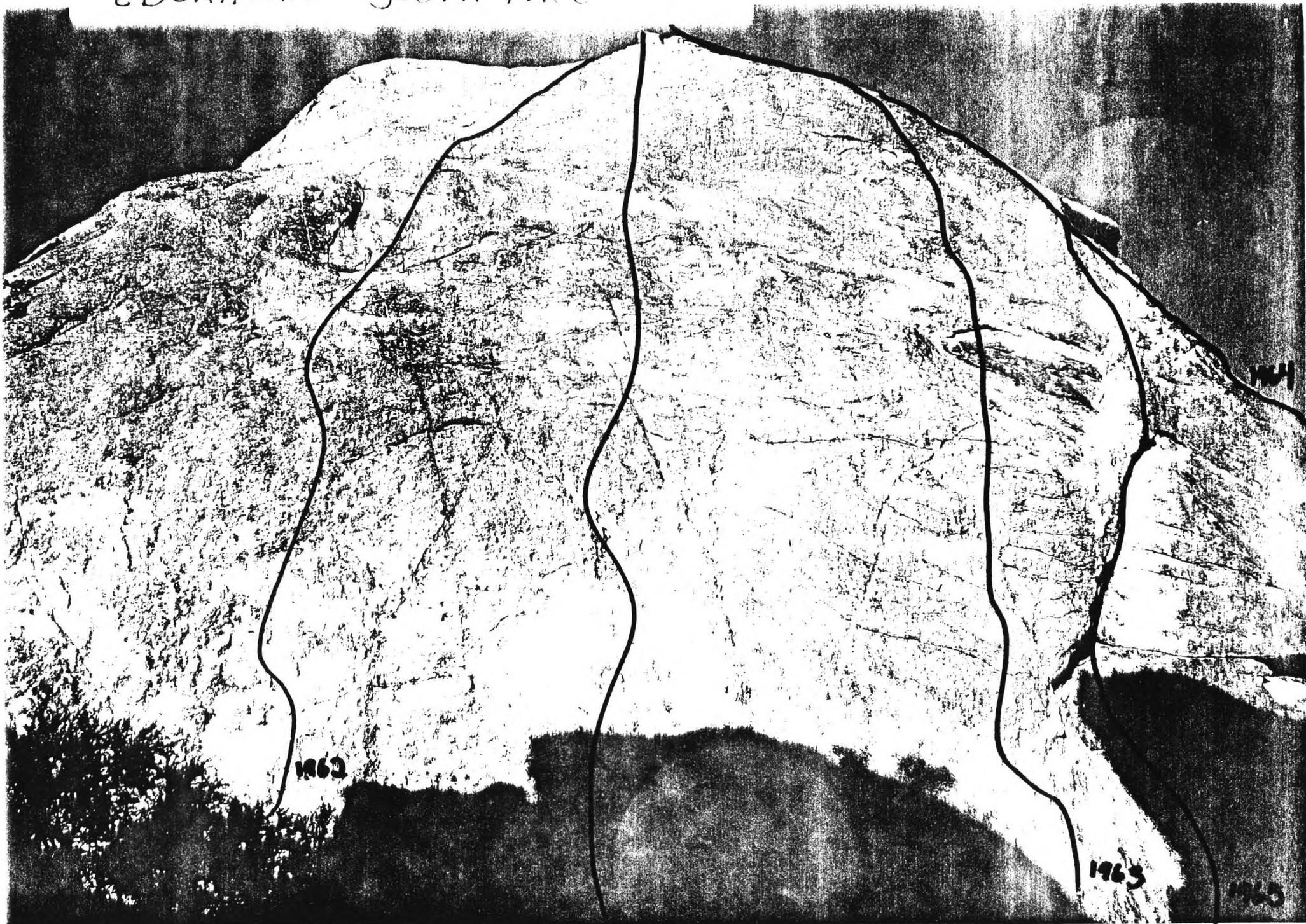
1967



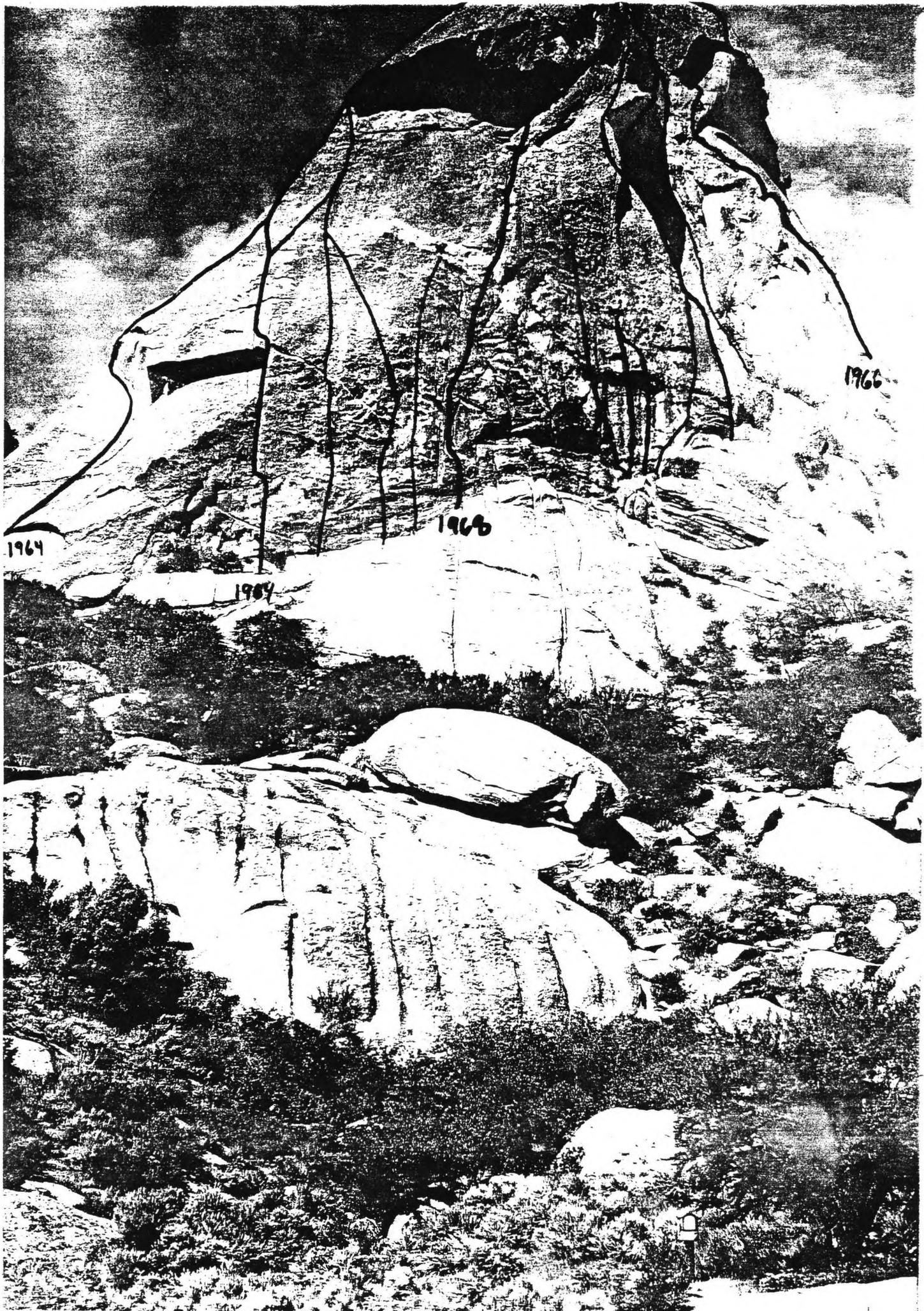
— EBERHORN

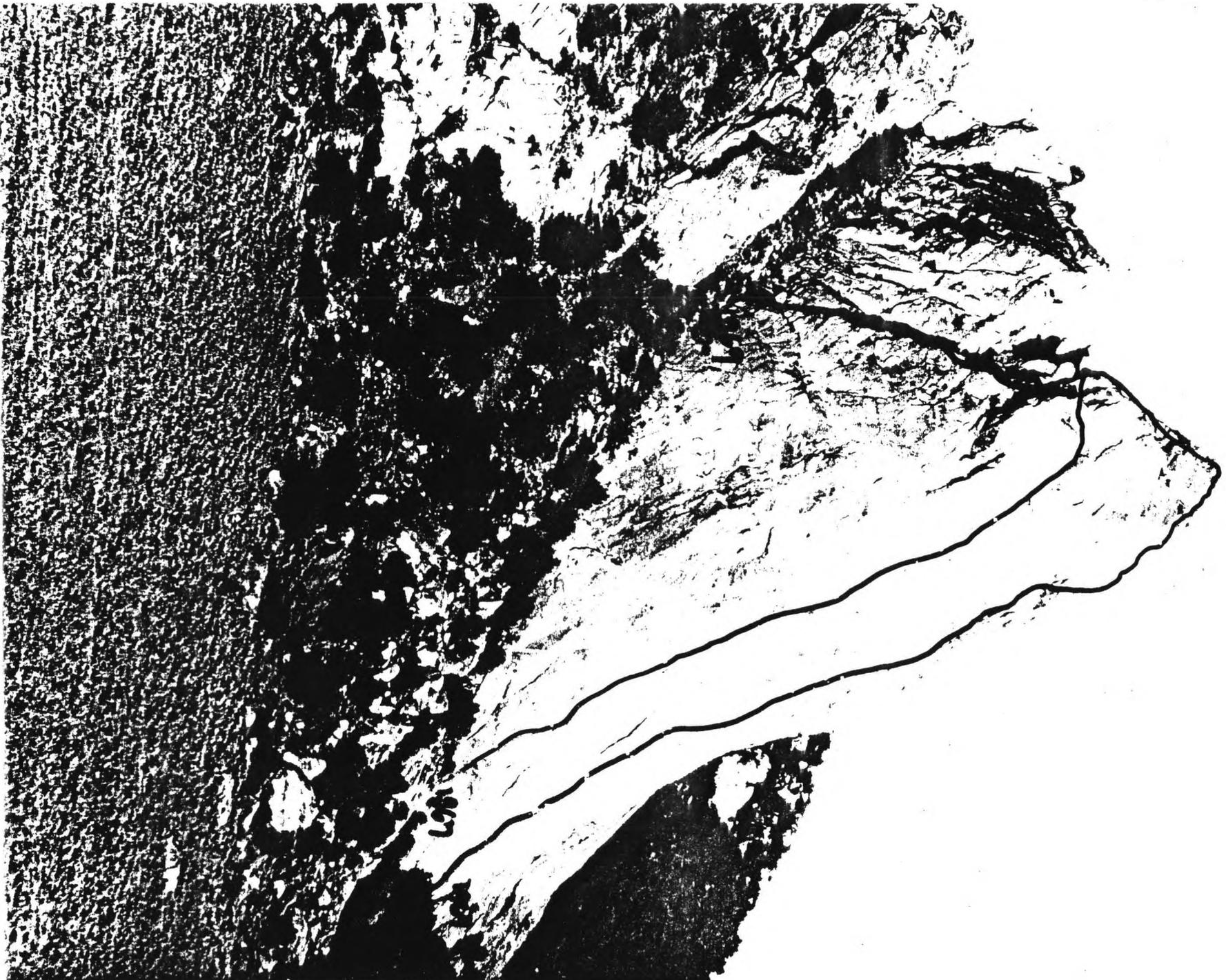
— WEST FACE

EBERHORN SOUTH FACE



EBERHARN. EAST FACE

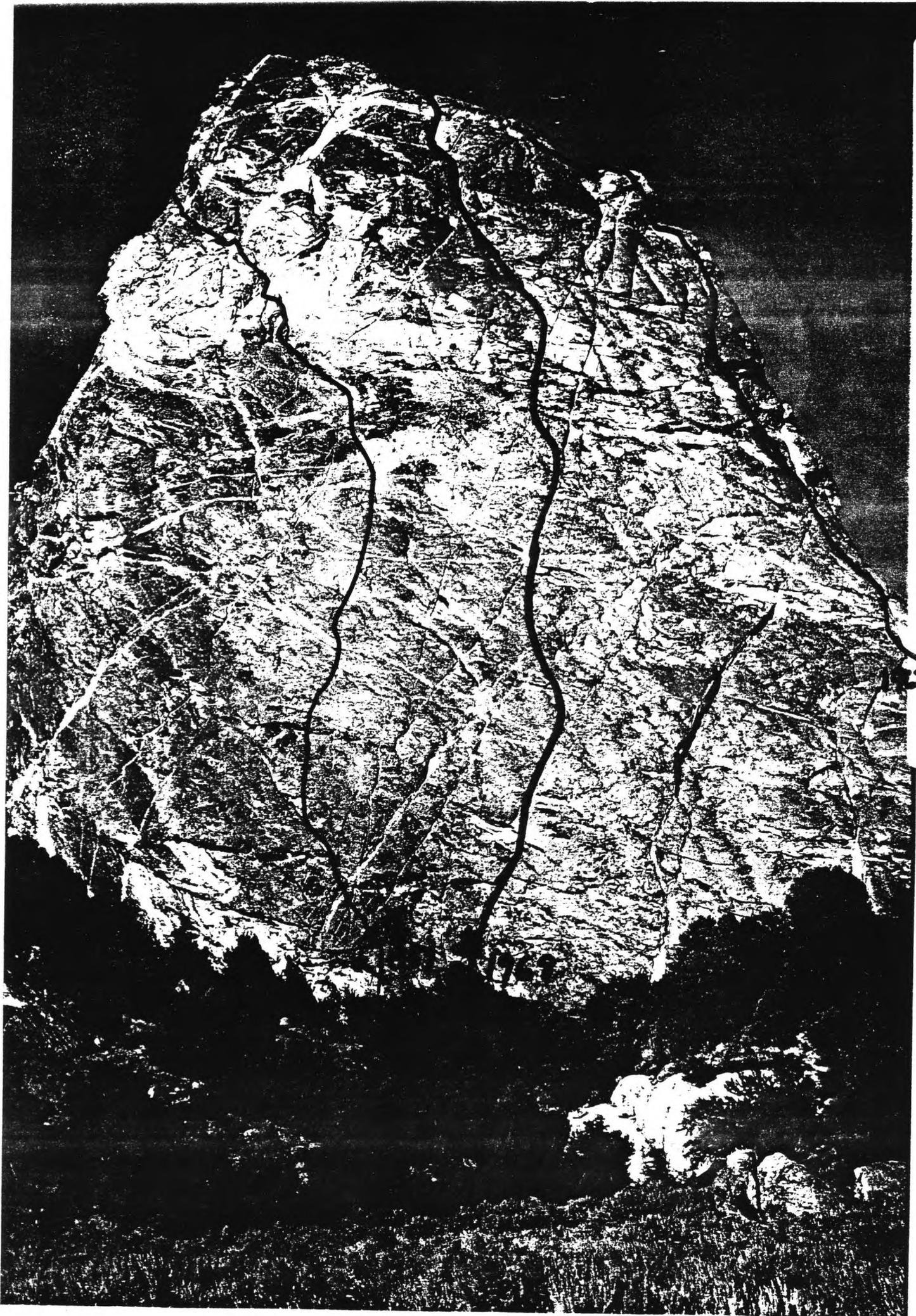




SOUTH SISTER - W. FACE



— SOUTH SIDE OF SOUTH FACE —



1967

South of



1967

1961

1964

1961

1962

1965