

COMPLETED

DRAFT

# CLIMBING MANAGEMENT PLAN and ENVIRONMENTAL ASSESSMENT

July 1994

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Devils Tower National Monument  
Wyoming

U.S. Department of Interior

National Park Service

Rocky Mountain Region

Draft  
Climbing Management Plan  
Environmental Assessment

Devils Tower National Monument  
Wyoming

This Draft Climbing Management Plan and Environmental Assessment presents a preferred alternative and five other alternatives for the management of rock climbing at Devils Tower National Monument. The preferred alternative calls for new emphases in the management and interpretation of the butte known as Devils Tower. The National Park Service proposes to manage Devils Tower as primarily a crack climbing site in such a way that will be more compatible with the butte's geology, soils, vegetation, nesting raptors, visual appearance, and natural quiet. No new bolts would be permitted on the tower, though replacement of existing bolts would be allowed.

In respect for the reverence many American Indians hold for Devils Tower as a sacred site, rock climbers will be asked to voluntarily refrain from climbing on Devils Tower during the culturally significant month of June. During this time, American Indians visiting the monument may conduct traditional cultural ceremonies without the distraction of climbers ascending the sacred butte. The monument's staff will begin interpreting the cultural significance of Devils Tower to American Indians for all visitors along with the more traditional themes of natural history and rock climbing.

The environmental consequences of the preferred alternative would include increased protection for natural resources. No critical habitat for listed species would be negatively affected. Visitor experience would be enhanced by a more diverse and balanced interpretive program. In turn, improved communication and understanding among the monument's user groups would lead to greater respect and tolerance of differing perspectives.

In addition to the preferred alternative, the alternatives under consideration include a no change alternative, another that phases in a voluntary June closure to climbing over three years, one that includes a mandatory June closure to climbing, one that closes the tower to all climbing year around, and one that allows for virtually unlimited and unrestricted year around climbing.

The review period for this document ends October 31, 1994. All comments must be received by this date and should be addressed to:

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United States Department of the Interior • National Park Service

U.S. DEPARTMENT OF INTERIOR  
NATIONAL PARK SERVICE

DRAFT CLIMBING MANAGEMENT PLAN AND ENVIRONMENTAL ASSESSMENT  
DEVILS TOWER NATIONAL MONUMENT  
CROOK COUNTY, WYOMING

SUMMARY

The unique geological formation known as Devils Tower annually draws nearly half a million visitors. Most visitors enjoy photographing the butte, hiking area trails, camping, picnicking, and wildlife viewing. A few thousand technical rock climbers annually travel from across the country and the world to scale the butte's nearly vertical cracks and columns. Devils Tower also is a sacred site to several American Indian peoples of the northern plains. Increasingly, American Indian groups travel to the monument to perform traditional cultural practices. Devils Tower is highly regarded as having significant values that make it worthy of inclusion to the National Register of Historic Places.

Recreational climbing at Devils Tower has increased dramatically from 312 climbers in 1973 to over 6,000 per year since 1992. New route development in the last ten years has led to increasing numbers of bolts on the tower. Approximately 580 metal bolts are currently embedded in the rock. Devils Tower is world famous for its crack climbing, which depends primarily on removable protection placed by climbers in cracks.

Activities performed by the numerous climbers on the tower during the spring through fall climbing season has affected nesting raptors, soil, vegetation, the integrity of the rock, the area's natural quiet, and the rock's physical appearance. American Indians have complained that the presence of climbers on the sacred butte and the placement of bolts in the rock has adversely impacted their traditional activities and seriously impaired the spiritual quality of the site.

The preferred alternative and five other alternatives address the monument's objectives to: 1) preserve and protect the monument's natural and cultural resources for present and future generations, 2) manage recreational climbing on the tower, 3) increase visitor awareness of American Indian beliefs and traditional cultural practices at Devils Tower, and 4) provide the monument with a guide for managing climbing use that is consistent with National Park Service management policies and other management plans at Devils Tower National Monument.

The **No Change Alternative** and five other alternatives, including the preferred alternative, are analyzed in this document. The anticipated effects of the alternatives will inform management and the public of the potential impacts of different strategies. The no change alternative is described in detail to provide a baseline from which the reader may respond to the issues and proposals. The other alternatives provide different management options that would answer the above listed objectives with varying levels of success.

All alternatives propose some common elements including: 1) developing a long-term resources monitoring program that will include conducting a Visitor Education and Resource Protection plan, 2) improving education and information on all historic uses of the monument including American Indian traditional cultural practices, rock climbing, and ranching, 3) revising the climber registration cards, 4) promoting responsible and ethical climbing practices, and 5) completing the identification, evaluation, and nomination procedures for significant cultural resources.

**Alternative A** offers essentially unregulated climbing on the tower and allows the greatest variety of climbing activities among all the alternatives. Climbers would be able to drill and hammer new bolts and pitons wherever and whenever they please. Mandatory climber registration would end. Both crack and face climbing use would likely continue to grow. All types and colors of climber equipment would be permitted on the rock. Only routes near raptor nest sites would be closed during the nesting season and only after climbers report finding the nest. Climbers would now be able to camp overnight on the tower.

**Alternative B** is the no change alternative. It would be a continuation of the status quo in climbing management at Devils Tower. Climbers would continue to climb year around by simply registering with the monument. Unlimited drilling of bolts and hammering of new pitons would continue. Both crack and face climbing use would continue to grow. All types and colors of climbing equipment would be allowed on the butte. Only routes near raptor nest sites would be closed during the nesting season and only after climbers report finding the nest. Camping on the tower would still be prohibited. Devils Tower National Monument would incorporate the service-wide climbing regulations recently adopted by the NPS.

**Alternative C** contains many of the same elements as alternative D with the following exceptions. Under alternative C, climbers would be asked to voluntarily refrain from climbing on Devils Tower during the month of June. During the first year the voluntary closure would last one week. During the second year the closure would last two weeks. Not until the third year (1997) would the voluntary closure persist through the whole month of June. Placement of bolts on the tower would require separate registration or a permit. In order to better allow for free raptor nest site selection, climbing levels in March and April would not exceed

current levels. Once climbers report a raptor nest, routes within 50 meters of the confirmed raptor nest would be closed for the duration of the nesting season.

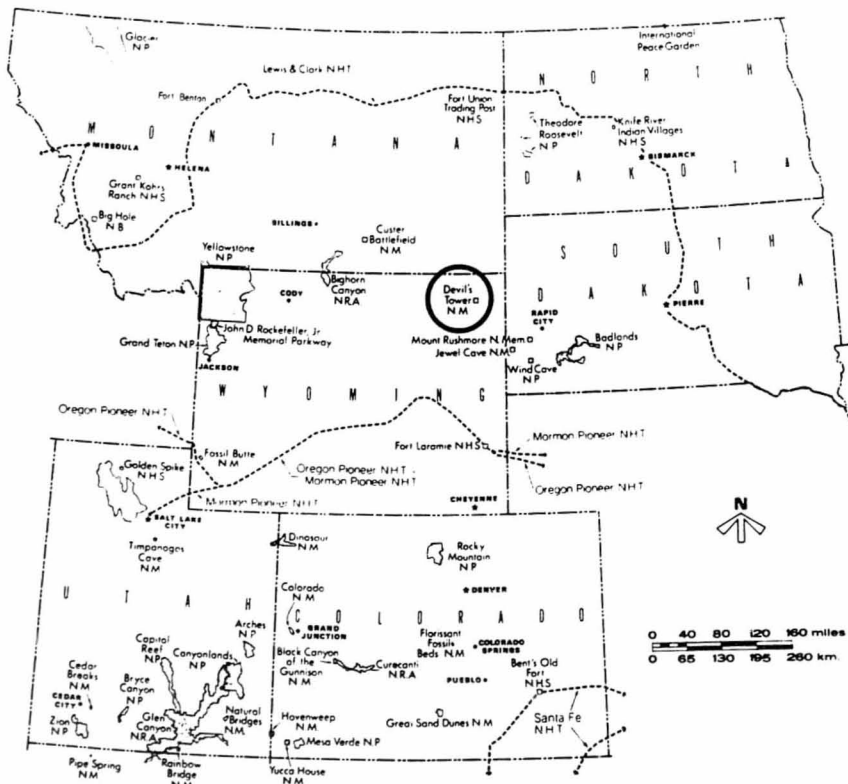
**Alternative D** is the preferred alternative. Under the preferred alternative, the voluntary June closure to climbing on Devils Tower also would begin in 1995, but the closure would immediately last the whole month of June. The 30-day closure would become mandatory if judged not successful. The determination of success would take place after an evaluation period. No new bolts would be allowed on the tower, though replacement of existing bolts could occur through a registration system. Rehabilitation of access trails and summit trails would help mitigate damage to soil and vegetation. Use of camouflaged climbing equipment would be encouraged and the leaving of slings on the tower would be discouraged. In order to allow for free raptor nest site selection, March and April climbing levels would not exceed current levels. NPS personnel would identify the nest site early in spring. Climbing routes within 50 meters of the raptor nest site would be closed for the duration of the nesting season.

**Alternative E** would require a mandatory June closure to climbing on Devils Tower beginning in 1995. No new bolts or the replacement of existing bolts would be permitted. Approach trails to the tower would be developed, signed, and maintained. No ropes would be allowed to be left on the tower. All other equipment would be well camouflaged. The use of chalk and rosin by climbers would be prohibited. Devils Tower also would be closed to climbing in March and April or until NPS employees locate raptor nest sites. Once a nest is located, all climbing routes within 100 meters of the nest would remain closed through the remainder of the nesting season.

**Alternative F** would permanently close Devils Tower to all climbing beginning in 1995. All bolts, pitons, and other climbing gear would be removed from the tower. All trails to and on the tower would be rehabilitated to a more natural condition.

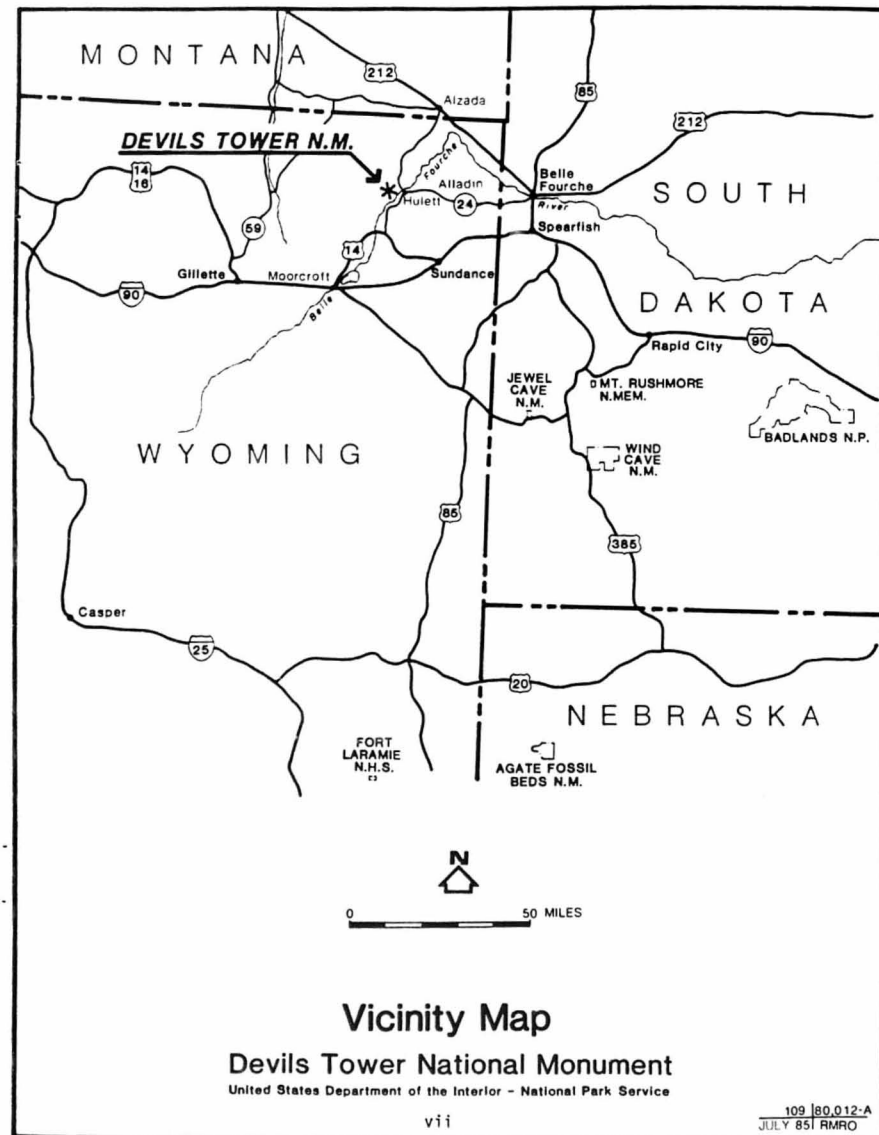
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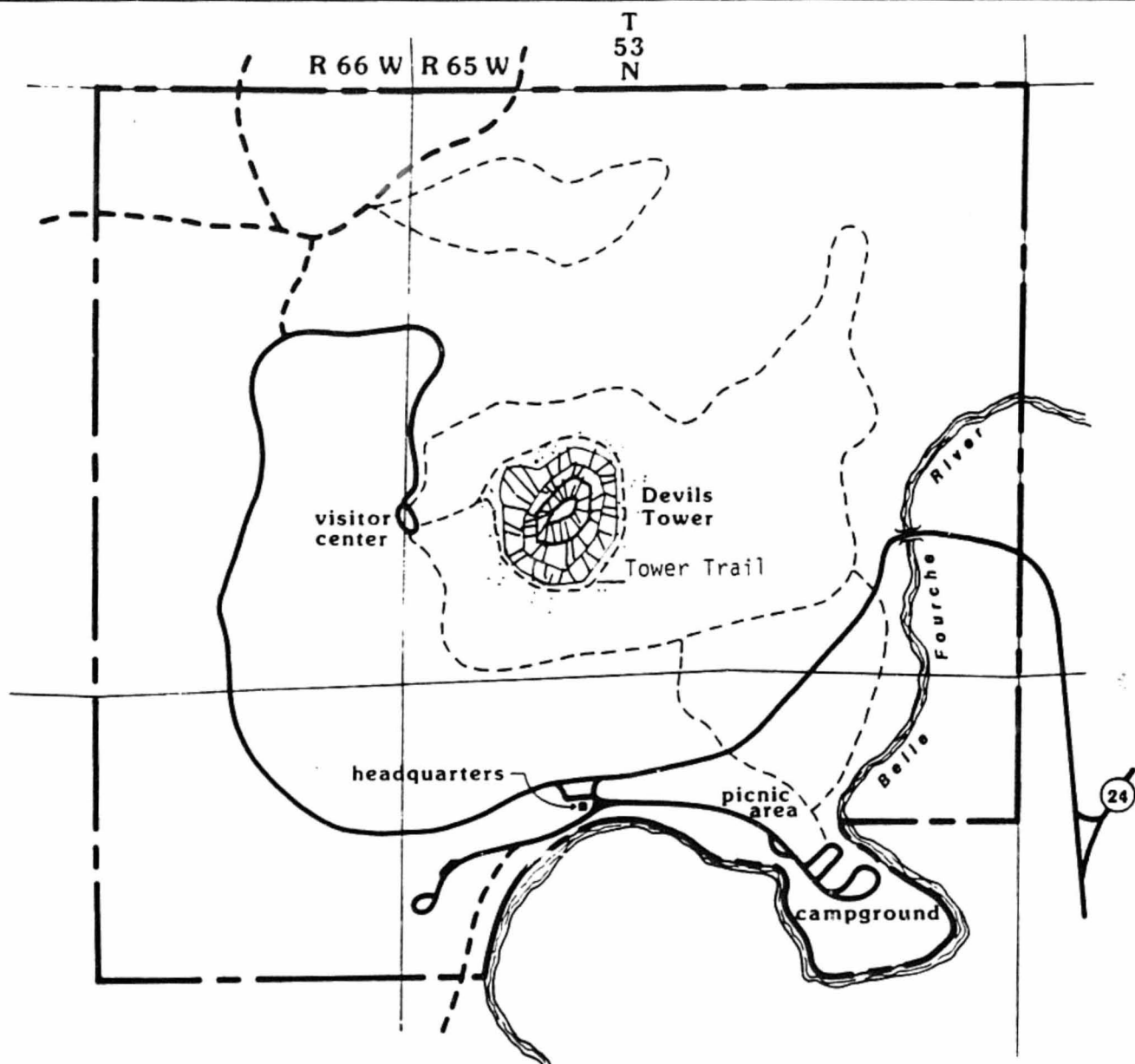


## ROCKY MOUNTAIN REGION





National Park Service  
United States Department of the Interior







### legend

-  national monument boundary
-  paved road
-  unpaved road
-  trail

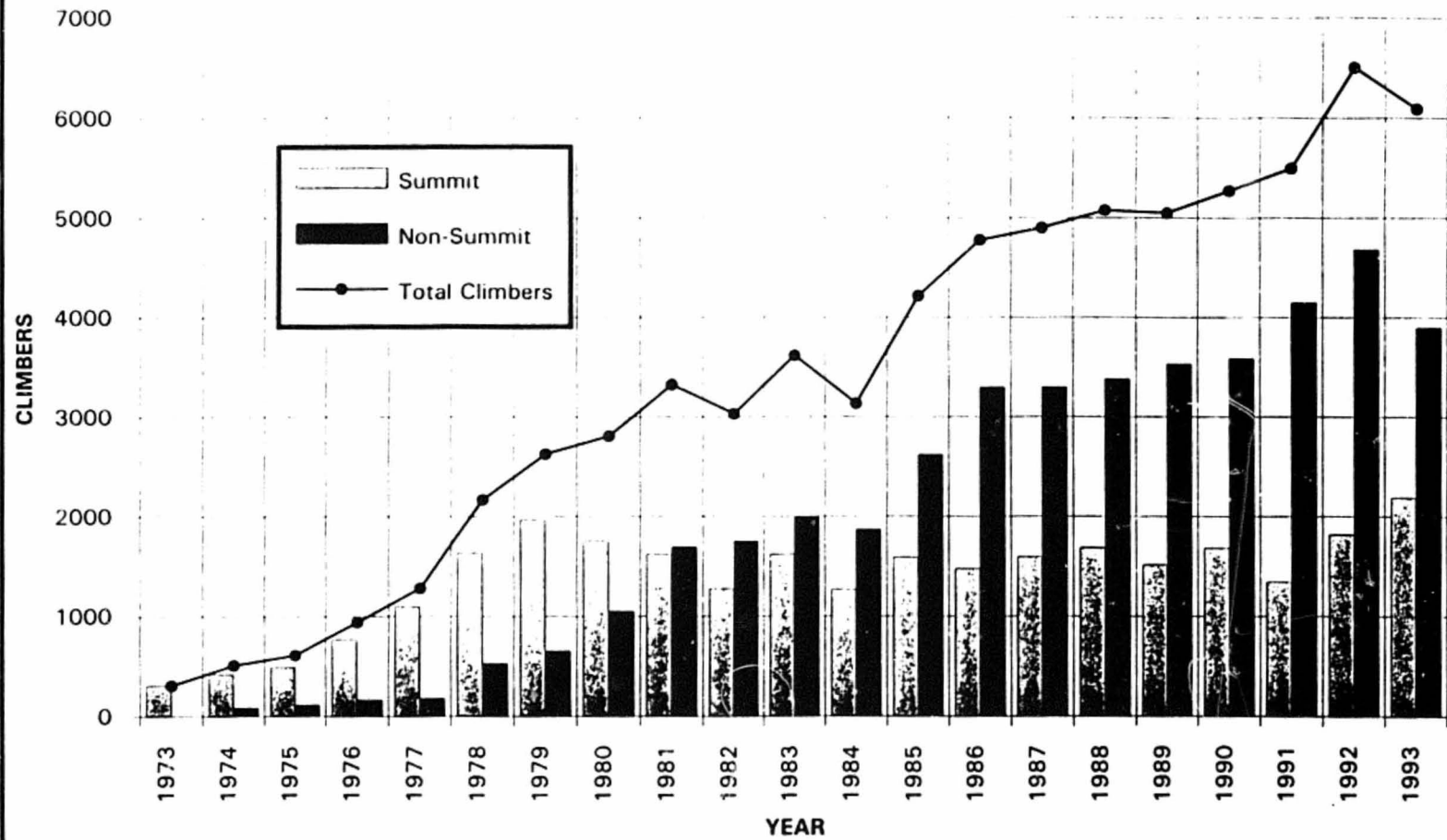


0 1/4 1/2 mile

## Boundary Map Devils Tower National Monument

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# DEVILS TOWER NATIONAL MONUMENT ANNUAL NUMBER OF CLIMBERS 1973 - 1993



## PURPOSE AND NEED FOR THE PLAN

### INTRODUCTION

(Refer to appendix B: a glossary with definitions of terms used in this document)

There is a long history of recreational climbing activity on the tower at Devils Tower National Monument. The first known recorded climb occurred in 1893 by William Rogers and Willard Ripley, who built a stake ladder up one of the tower cracks. In 1937 the first free climb was made. By 1993 the tower had 184 established free routes and 26 aid routes. Climbing on the tower has increased from three climbers in 1937 to a high of 6,505 climbers in 1992.

This increase in activity, coupled with new direction in National Park Service (NPS) policy, prompted the preparation of this draft climbing management plan (CMP) and an environmental assessment (EA) to analyze the effects of alternatives considered. The NPS at Devils Tower began the planning process for the development of a CMP in September of 1992 by contacting representatives from American Indian, climbing, environmental, and county interests to assemble a work group. This work group, monument and regional office staff, and the general public provided input to the CMP/EA.

### LEGAL AND ADMINISTRATIVE CONSIDERATIONS

The 1,347-acre Devils Tower National Monument, located in Crook County, Wyoming in the northeast corner of the state (see location map), was established under Presidential Proclamation No. 658, Stat. 3236 on September 24, 1906. The proclamation states

...the lofty and isolated rock known as 'Devils Tower', situated upon the public lands owned and controlled by the United States is such an extraordinary example of the effect of erosion in the higher mountains as to be a natural wonder and an object of historic and great scientific interest and it appears that the public good would be promoted by reserving this tower as a National Monument...

...warning is hereby expressly given to all unauthorized persons not to appropriate, injure or destroy any feature of the natural tower...

Further guidance can be found in the Act of 1916 establishing the National Park Service. That act identified the overall purpose for parks, monuments, and reservations:

... which is to conserve the scenery and the natural and historic objects and the wild life [sic] therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations. (16 U.S.C. §1)

That purpose was later expanded as follows:

...That authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values for which these various areas have been established...(16 U.S.C. §1a-1)

National Park Service *Management Policies* recognize rock climbing as a legitimate recreational and historical activity in the park system (NPS 1988). The policies also provide that the activities may be regulated by restrictions and that activities will not be allowed if they involve or result in:

inconsistency with the park's enabling legislation or proclamation, or derogation of the values or purposes for which the park was established

unacceptable impacts on visitor enjoyment due to interference or conflict with other visitor use activities

consumptive use of park resources (does not apply to certain traditional activities specifically authorized by NPS general regulations)

unacceptable impacts on park resources or natural processes

unacceptable levels of danger to the welfare or safety of the public, including participants. (8:2, NPS 1988a)

Various American Indian Nations have expressed concern over the management of climbing on the tower, which they revere as a sacred site. The American Indian Religious Freedom Act of 1978 states:

...it shall be the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites... (42 U.S.C. §1996)

Other federal laws applicable to the CMP include: Antiquities Act; Historic Sites, Buildings, and Antiquities Act; National Historic Preservation Act; National Environmental Policy Act; and the Endangered Species Act.

## **CLIMBING HISTORY**

Devils Tower's climbing history dates back to the late 1800s. In 1874 Lieutenant Colonel Richard Irving Dodge described the tower as "An immense obelisk of granite....Its summit is inaccessible to anything without wings. The sides are fluted and scored by the action of the elements, and immense blocks of granite, split off from the column by frost, are piled in huge, irregular mounds about its base." (Gardiner and Guilmette 1986)

In 1893 local ranchers Willard Ripley and William Rogers organized the construction of a stake ladder up on the tower. The continuously vertical crack in which native oak, ash, and willow pegs were placed is on the southeast corner of the tower. The 350-foot-high ladder was built up to the current "Meadows" area. The remaining 175 feet was a hard scramble to the summit, which was accomplished by Ripley prior to the inaugural climb by Rogers on July 4, 1893. The climbing event attracted nearly 3,000 people who ate, drank, and bought pieces of the American flag placed on the summit. This first commercial advertisement of the tower brought Ripley and Rogers approximately \$300 for the day. (Gardiner and Guilmette, 1986)

The ladder was last climbed in 1927. The lower 100 feet of the ladder was then removed for visitor safety. Today the upper 250 feet remain as a memorial to the first recorded ascent of the tower.

Many American Indian tribes of the northern plains refer to the tower in their legends and still consider it a sacred site. Some Indian people say the tower has been climbed for many years by Indians during traditional ceremonies.

In 1937 the first ascent of the tower summit by modern rock climbing technique was accomplished by Fritz Weissner, Lawrence Coveney, and William P. House. This was the first recorded technical climb made on the tower. The classic Durrance route used by a majority of climbers, especially first-time tower climbers, was established in 1938 by Jack Durrance and Harrison Butterworth. Only one route was established in the 1940s, but through 1973 all recorded climbs conducted at the tower were summit climbs on a possible 51 established routes. The total number of climbers to have reached the tower summit by 1973 was 312.

Monument statistics reveal that in 1974 shorter climbs that did not reach the summit began to occur. By 1981 the number of non-summit climbers (1,700) exceeded the number of summit climbers (1,624). This trend has continued to the present. The 1980s experienced a proliferation of new routes established on the tower, a total of 117.

#### CURRENT CLIMBING USE AND MANAGEMENT

The monument's average annual visitation from 1989 through 1993 was 428,322. The average number of climbers for the same period was 5,683 per year. Climbers accounted for approximately 1.3 percent of the annual visitation over the past five years. The climbing season generally runs from spring through early fall, however, all months of the year may provide weather suitable for climbing.

Virtually all climbers at the tower climb for recreational purposes. Various motivations for climbing have been advanced among recreational climbers. Many climbers enjoy the physical challenge, others have expressed a sense of psychological or even spiritual satisfaction, while others simply want to see what's on top and enjoy the view. Some American Indians have climbed the tower for traditional spiritual purposes, such as a vision quest, and would like to have the option to continue climbing for this purpose.

Climbers the world over consider Devils Tower a premier crack climbing area. Tower columns range from three to six sides and cracks formed where individual columns are separating. Some of the faces between cracks also provide climbing opportunities. Face climbing has become increasingly popular at the tower.

There are various forms of climbing activities that take place at the monument. All climbing activities above the boulder field require registration with a park ranger before and after climbing. Climbing activities are generally classified into three different categories. There is (1) the technical climber who ascends to the summit, (2) the technical climber who may complete a route that does not ascend to the summit, and (3) the non-technical hiker/climber who scrambles above the boulder field to the base of the tower. Non-technical hiker/climbers who register and hike above the boulder field have been counted as climbers in the past. Hiker/climber impacts are not quantified, but will be monitored in the future as part of an overall impact monitoring program. As defined in this plan, a climber is a visitor who ascends an established and recognized route on the tower by means of technical ability and equipment.

The average annual number of climbers for the last five years was 5,683. The average number of non-summit climbers continues to outnumber summit climbers by over 100 percent from 1989 through 1993. The highest all-time yearly use occurred in 1992 with 6,505 climbers (see Annual Number of Climbers figure). The heightened popularity of sport climbing has likely led to the proliferation of short route and face route establishment, which may account for the higher number of non-summit climbers.

A 1992 study of registration cards by the monument's resource management staff indicated the following:

- The Durrance route is the most popular climb and has received 16,810 climbers since 1937, followed by Soler with 4,435 climbers.
- Overall, three-fourths of the routes on the tower have been climbed very few times since 1937.
- 80 percent of the total climbs on the tower have occurred on only 23 different routes.

The registration cards provide only approximate use of the tower, and statistics may be underestimated due to some non-reporting, inaccurate reporting, illegible reporting, and missing registration cards (NPS 1993a).

Monument research indicates that there are 164 established free climbing routes and 26 aid climbing routes on the tower as of 1992. The same study developed a method to estimate the climbed surface area of the tower, which roughly translates to about 14 percent of the total surface area. On this 14 percent of the tower there are 580 bolts (NPS 1992).

There are five main approaches used by climbers; the Durrance, west face, south/east face, northeast face, and the north face/northwest shoulder. None of the approaches or rappels are NPS signed or maintained. Also, there are five main rappels off the tower; the Durrance, Meadows, summit (two on south-southeast edge), and the Bon Homme. Many other secondary rappel routes have been established by local climbers.

There are four authorized commercial climbing guide operations allowed in the monument, which are managed by commercial use license.

The current policy under Title 36 of the *Code of Federal Regulations* (CFR) §7.30 requires every climber above the boulder field to register with a ranger before and after their climbing activities for the day. Climbers must report how many people are in their party and whether the ascent reached the summit or not. Any visitor may register to climb and climbers may climb any route they wish except those closed to protect nesting raptors.

The 1994 Compendium of Superintendent's Orders for Devils Tower National Monument established under the provisions of 16 U.S.C., Section 3 and Title 36, Code of Federal Regulations, Chapter 1, Parts 1-7 listed the following regulations pertaining to climbing:

#### Section 1.5 Closures and public use limits.

(a)(1) The following areas are closed to public entry:

3. The Old Stake Ladder Route on the tower  
closed year around
4. Falcon nesting areas on the Tower  
closed when falcons are nesting

#### Section 1.6 Permits

In accordance with 36 CFR 1.7(b) the following activities require special permits:

- 2.1(a)(5) Installation of climbing bolts on the Tower
- 7.30(a) Climbing

#### Section 2.1 Preservation of Natural, Cultural & Archeological Resources

(a)(5) Rock Climbing

The following climbing activities are prohibited:

1. The operation of a power drill or motorized equipment used to support the placement of climbing aides or otherwise to directly support a climb.
2. The gluing or chipping of rock, or the gluing, affixing, or placement of artificial hand holds on rock, or other damaging practices such as forcibly prying off rock or destroying vegetation to enhance a route.
3. Leaving fixed climbing ropes unattended on the Tower.

The following climbing activity requires a permit issued by the superintendent of his or her designee. Conditions for this activity will be listed on the permit.

4. Installation of climbing bolts on the Tower. The Tower includes the southwest shoulder area below the southwest buttress.

#### OBJECTIVES

Management objectives for Devils Tower National Monument pertinent to the draft CMP are:

- To preserve and protect the monument's natural and cultural resources for present and future generations.
- To manage recreational climbing on the tower.
- To increase visitor awareness of American Indian beliefs and traditional cultural practices at Devils Tower.
- To provide the monument with a guide for managing climbing use that is consistent with NPS management policies and other monument management plans.

#### ISSUES ADDRESSED IN THE PLAN

Issues were developed through five scoping-type meetings with the climbing management plan work group. In October of 1992, Devils Tower notified groups that would be interested in the monument's development of a climbing management plan. Devils Tower approached different organizations that collectively represent a broad range of interests. The monument invited organizations to participate on a special work group and let each organization pick their individual work group members. Three of the work group meetings were held in Denver, Colorado in May and August, 1993 and April, 1994. The other two were held in the local communities of Hulett, Wyoming in April, 1993 and Gillette, Wyoming in October, 1993. The work group discussed issues and developed recommended alternatives for the plan. Limited scoping with the general public has been done via press releases and a newsletter sent to interested parties. The major issues this plan will address are as follows:

## Ethnographic Importance of the Tower

Some American Indians perceive climbing on the tower and the proliferation of bolts, slings, and other climbing equipment on the tower as a desecration to their sacred site. It appears to many American Indians that climbers do not respect their culture by the very act of climbing on the tower. Climbing during traditional ceremonies and prayer times is a sensitive issue as well. Elders have commented that the spirits do not inhabit the area any more because of all the visitors and use of the tower, thus it is not a good place to worship as before.

The Dakota, Nakota, and Lakota Nations held a meeting in June, 1993 and developed the Summit V Resolution No. 93-11. The purpose of the meeting was to "support and demand tribal participation in the protection and decision making of sacred sites." The following are portions of the resolution that relate to Devils Tower.

WHEREAS, the Dakota, Lakota, Nakota spiritual teaching has always included the MEDICINE WHEEL in Wyoming, DEVILS TOWER in Wyoming, BEAR BUTTE in South Dakota, and HARNEY PEAK in South Dakota, as primary and significant sites to our religion, and...

WHEREAS, the DEVILS TOWER has been subjected to similar damage from an onslaught of rock climbers and now has hundreds of steel pins pounded into the face of this Sacred Site, and...

WHEREAS, these sites and many others are vital to the continuation of our traditional beliefs and values, and

WHEREAS, it is our legacy to protect these sites for the future generations, so they too, may be able to enjoy these holy places for prayer and revitalization of Mother Earth, now...

BE IT FURTHER RESOLVED, that this assembly does not support efforts by Federal Land Managers to allow further destruction to these Sacred Sites by tourists, hikers or rock climbers. (Dakota, Lakota, and Nakota Nations 1993)

In 1991 an ethnographic overview was completed at Devils Tower (Hanson and Chirinos 1991). Recommendations to the NPS included:

Nominate the tower and Sun Dance grounds to the National Register of Historic Places; prohibit people from climbing on the tower; allow Lakota to cut the center pole for the Sun Dance from monument property if there would be no adverse affect on monument resources; encourage park visitors not to remove or disturb prayer bundles or other offerings; include the protection and preservation of ethnographic resources in future management statements and plans; subject to consent of the tribes, give the tower a more ethnographically appropriate name.

## Geology and Integrity of the Rock

The volcanic formation called Devils Tower was considered such a highly significant geologic resource that it warranted its establishment as America's first national monument. The preservation of the rock and its associated resources is a primary monument goal. Any impacts to the rock surface is of paramount concern to the NPS.

Activities that scar or deface the rock include:

- the placement and removal of pitons and bolts
- the intentional chipping or gluing of hand and foot holds to enhance a route
- the intentional, forceful removal of rocks and vegetation to enhance a route
- the unintentional removal of rocks by hand, foot, or use of climbing equipment

Wear will occur on the rock due to repeated climbs on particular routes. Intentional enhancement of routes, however, by chipping holds or removing rocks or vegetation is not allowed. These actions constitute damage to natural resources and are prohibited under 36 CFR §2.1a.

## Bolts and Pitons

Bolt and piton placement causes permanent damage to the rock surface. Bolts, however, are necessary for safe climbing, especially on the tower where the only safe option for a descent is to rappel. Of the 580 known bolts on Devils Tower, 274 are single bolts, and 306 are part of anchor systems. An anchor system on the tower is usually comprised of two bolts and two chains or slings used for belaying and rappelling. An inventory and analysis study of the tower revealed that the entire tower has approximately one bolt per 169 square meters (NPS 1992).



The first piton was hammered into the rock in 1937 during the first ascent of the Wiessner route. The Durrance and Meadows rappel anchors were installed by the NPS in the 1960s and 1970s. These rappels were maintained for some time by the NPS, but recently have not been maintained. The use of bolted rappel stations is essential for safe descent off the tower. Most descent routes use these stations.

The responsibility of maintaining these bolts and anchor systems is an issue to be resolved. The wear and need for replacement of bolts varies according to the area's climate, quality of rock, amount of use the particular bolt or anchor system receives, the quality of hole drilled and placement of the bolt, and the quality of the bolt. Areas that receive much rain and sites that experience frequent freeze and thaw activity will require more bolt maintenance. Rock integrity and bolt length and diameter are also important factors to consider. Historically, 1/4-inch diameter expansion bolts were used and still exist on the tower. The modern minimum bolt standard is 3/8-inch stainless steel. The rock quality at Devils Tower is very hard phonolite porphyry rock that is better for holding a bolt in place than sandstone. A concern with replacing a bolt is that a new hole should not be drilled every time. It is possible to dismantle a bolt and replace it with a new one in the same hole if the hole is drilled cleanly to begin with and it is replaced with a bolt of the same size or larger.

Pitons also damage rock resources when they are both placed and removed, often times causing flaking or the expansion of a crack.

#### **Preservation of Historic Resources**

Devils Tower is currently eligible for listing on to the National Register of Historic Places as a traditional cultural property. Traditional in this context refers to "those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice." The word culture in the National Register program is understood to mean "the traditions, beliefs, practices, lifeways, arts, crafts, and social institutions of any community, be it an Indian tribe, a local ethnic group, or the people of the nation as a whole." (Parker and King 1990).

A traditional cultural property is generally defined as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history and (b) are important in maintaining the continuing cultural identity of the community (Parker and King 1990).

The stake ladder on Devils Tower is on the List of Classified Structures and is also eligible for inclusion on the National Register because it is part of the tower's history. The ladder represents over 100 years of climbing history.

#### **Type and Level of Climbing Use**

Devils Tower is recognized world-wide for its crack climbing, yet it has been new route establishment on its faces that has increased in recent years. Face climbing that relies on the use of numerous bolts for protection on faces is a conflicting use among some climbers. Many climbers consider the proliferation of new bolts to be contrary to the spirit of Devils Tower as a crack climbing area.

Most natural lines (cracks) on the tower have been climbed. Climbers seeking new challenges have turned to face routes on the tower. Prior to 1991, the year power drills were banned at Devils Tower, power rock drills aided in the development of new routes that previously were considered "unclimbable." Power drills allowed for the efficient and dependable placement of bolts.

The tower is a limited resource and provides the only source of technical climbing opportunities in the monument. Are 190 routes enough to meet climber needs and expectations? There are many other areas in the country that offer a multitude of face climbing opportunities such as the Needles in South Dakota, Yosemite National Park and Joshua Tree National Monument in California, and Rocky Mountain National Park in Colorado, to name a few. The type and level of climbing considered necessary and appropriate and consistent with management goals and objectives needs to be determined. Is it acceptable to allow a climber to install a new route that requires twenty new bolts on a face right next to a natural line?

#### **Natural Quiet**

Devils Tower National Monument is in a relatively remote region of northeastern Wyoming. Visitors may enjoy the monument by camping, sightseeing, hiking, viewing wildlife, climbing, and listening to the natural sounds. Climbers communicating with each other on the tower may be heard by visitors on any of the monument trails. The placement of new bolts and pitons with a hammer may be heard by visitors. Natural quiet is a resource that must be preserved for future generations just as other monument resources. Disturbance of natural quiet also affects traditional cultural practices of American Indian groups that may be praying or conducting special ceremonies.

#### **Vegetation and Soils**

Undefined, unsigned, and non-maintained climbing approach routes impact vegetation and soils. The majority of climbers use established approach trails to the base of the tower. Occasionally, climbers and hikers may approach the base of the tower by the quickest means possible, which can be in a straight line. At Devils Tower four main approach routes are defined in climbing books to branch off

the main Tower Trail. The problem is that these approaches are not well defined, thus social trails are developing to access the tower base.

Trampling and loss of vegetation and soils at the base of climbs is occurring. The most popular summit access (Meadows route) to the summit cairn trail is not maintained and soil and vegetation are being lost.

#### **Visual Aesthetics**

Viewing the tower and its associated resources is the main objective for many visitors. Although some visitors may enjoy looking at climbers, some are disturbed by their presence on the tower and the visual distraction of slings, ropes, anchors, and possibly chalk. Slings and ropes may be obvious to the naked eye, especially those that are brightly colored. Slings are sometimes left on the rock and may occur in abundance at rappel stations. Belay and rappel stations and bolts detract from the natural appearance of the tower, although they are sometimes hard to detect without binoculars. Chalk used by climbers to dry sweaty hands may be hard to detect with the naked eye, but on the more popular routes may be noticeable on the rock and on the ground below the route. Climbers themselves are visible to visitors below.

Other visual impacts include litter and human waste. Currently, human waste and litter do not appear to be a significant problem. There are restroom facilities within 1/4 mile of the tower base. Small amounts of litter associated with climbers is most commonly found at the base of climbs or rappel stations.

#### **Wildlife Species of Concern**

The tower is a relatively small resource where climbers and raptors compete for space. Prairie falcons (*Falco mexicanus*) nest on the tower. There have been reports of falcons attacking climbers on the tower that get too close to the nest.

In general the following statements may be made about climber and raptor confrontations that affect the preservation of wildlife species in Devils Tower.

Rock climbing possesses the three characteristics of human presence that have been consistently shown to affect behavior among cliff nesting birds, especially raptor species. These are: a) activity in close proximity to nest sites; b) activity of significant duration; and c) presence above nest sites. Responses elicited from disturbed raptor species include calling out, temporary displacement from nests or perches, defensive or territorial displays, and direct attack upon the intruder (DeBenedetti 1990).

## **ISSUES OUTSIDE THE SCOPE OF THE CLIMBING MANAGEMENT PLAN**

### **Continued Consultation Between Devils Tower National Monument and American Indian Nations that Use the Monument for Traditional Cultural Practices**

American Indian groups do not need to consult with the superintendent or obtain any type of permit prior to their entering the monument for the sole purpose of performing traditional cultural activities. NPS management policies recognize that American Indians and other communities are permitted by law, regulation, or policy to pursue customary religious, subsistence, and other cultural uses of monument resources with which they are traditionally associated (NPS 1988). In order to properly address issues that do require formal consultation, Devils Tower will work to develop such a process with American Indian groups.

Since 1983 there have been some organized traditional activities by American Indian groups at Devils Tower that have included the extended use of monument facilities and areas. The superintendent issued special use permits for the use of monument facilities.

### **Name Change of Devils Tower and the National Monument**

Several published sources have acknowledged the inaccurate naming of the butte now called Devils Tower in 1875 by Colonel Dodge. The earliest map of the region labeled the butte "Grizzly Bear Lodge," or Mateo Teepee to some local Indians (Mattison 1956). The erroneous name of Devils Tower stuck, however. American Indians feel the name is inappropriate and disrespectful of their culture. Some members of the CMP work group have repeatedly urged the monument to rename the butte to a more culturally significant name. Though not within the scope of a climbing management plan, the NPS recognizes the legitimacy of this request. This issue will be considered separately at a later date.

## ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

Six alternatives were considered to resolve the previously identified issues. Actions common to all alternatives are described first, followed by specific actions for each alternative.

For clarity, the alternatives are listed in an order developed by the work group. The order of the alternatives covers a range of management actions from the least restrictive to climbing activities to the most restrictive to climbing activities.

### ACTIONS COMMON TO ALL ALTERNATIVES

This section defines those actions necessary to meet management goals and objectives.

#### Develop a Long-term Natural and Cultural Resources Monitoring Program

Information on natural and cultural resources and their condition as well as visitor use is needed to make informed management decisions about rock climbing and other uses. Resource monitoring becomes an integral part of this process. Some monitoring efforts are already underway, including a bird survey, the tower base vegetation impact study, the litter inventory, the tower summit vegetation survey, the ethnographic overview, and an assessment of climber registration data. A process will be developed to set standards for desired conditions, monitor changes, and take action if conditions change unacceptably. Under all alternatives, a Visitor Education and Resource Protection (VERP) plan will be conducted for Devils Tower National Monument.

#### Improve Education and Information on All Historic Uses of the Monument Including American Indian Traditional Cultural Practices, Climbing, and Ranching

Under all alternatives, an educational and interpretive program to inform the public about the significant relationship between the Great Plains American Indian Nations and the tower would be developed. This program may include, but not be limited to:

- Outdoor exhibit similar to the current climbing display
- American Indian demonstrations such as food preparations, pottery making, basket weaving, and uses of native plants
- Interpretive programs about American Indian lifeways
- Ethnographic information in the monument brochure or site bulletins about the ethnographic importance of the tower

- Cultural awareness day or week including demonstrations, food booths, art and crafts, and maybe dancing activities
- Update and maintain as needed the "Do Not Disturb Prayer Bundles" signs
- Develop a long-term interpretive strategy for dealing with American Indian issues
- Develop a video dealing with American Indian issues
- Hire an American Indian interpreter on monument staff
- Assure interpretive programs offer balanced views of history
- Update monument publications to include American Indian themes

To improve information on climbing and enhance relationships between the climbing community and the NPS, the following will be implemented:

- Develop a climber brochure similar to those used at Joshua Tree National Monument, Rocky Mountain National Park, and Yosemite National Park. The Joshua Tree and Yosemite brochures were funded by the Access Fund and local climbing businesses. The brochure should include the following: brief history of the monument and climbing, importance of cultural resources, importance of natural resource protection, ethics or "climber's code," climbing regulations, ways to preserve climbers' freedom, litter and human waste, safety, and general visitor services available
- Work with local climbing groups and national magazine editors to inform the public about climbing at Devils Tower
- Continue to involve the climbing community with climbing management planning processes
- Involve the climbing community with work projects, i.e., trail rehabilitation
- Use the required registration as an opportunity to discuss the climber brochure, hand out the brochure, and obtain accurate information about tower use
- Continue to perform interpretive programs on climbing

Continued climbing at Devils Tower may depend on the willingness of the climbing community to abide by their own code of climber ethics in conjunction with NPS policies and regulations.

The historic significance of ranching in the Devils Tower region must also be presented to the public. This may be done through visitor center displays, resource management wayside exhibits, and interpretive programs.

#### Revise the Climber Registration Card

Currently the data provided on the registration card does not provide enough information to develop complete statistics. To improve user statistics, all data desired must be included on the registration card. For those alternatives continuing to require climber registration, data cards will be revised to appear as a

backcountry permit (see Appendix A, Climbing Use Permit Form). A database management system (dbms) may be used to track the necessary information and produce monthly summaries, reports, and trend data.

Permits will be available at convenient locations for climbers who may arrive very early or late. Complete, simple directions will be posted for self-registration after NPS working hours. The back of every permit will include monument climbing regulations and ethics.

#### **Plan Review and Update**

This plan will be reviewed and updated as needed. This will allow for the plan to reflect any changes in climbing management policies, new research and monitoring results, and changes in climbing trends. The effectiveness of some selected alternatives may need to be evaluated after two to three years and appropriate adjustments made.

#### **Promote Responsible and Ethical Climbing**

Under all alternatives, except Alternative F which prohibits climbing, the NPS will promote waste removal, climber safety, and minimum impact climbing through education programs.

Portions of the following paragraph may be adopted into a climbing information brochure. The information was gathered from the climbing policy of the Mohonk Preserve in New York.

Climbers must exercise their freedom to choose their own routes and climbing styles, within the limits necessitated by the uniqueness and fragility of the environment and the rights, needs, and safety of other climbers and users of the monument. Responsibility for safe climbing rests solely with the individual climber.

The monument does not maintain the tower routes or the associated climbing "hardware" and "software" (see Glossary), does not provide supervision or instruction, and is not responsible for the condition of the climbing terrain or the acts of persons who may be on the tower. The monument explicitly disclaims all responsibility for the safety of bolts and pitons as may be found in place on the tower.

To maintain the natural and scientific values of the tower, the monument prohibits all environmentally damaging climbing practices. These include chipping or gluing new holds, cleaning the rock surface or cracks, removing vegetation, and climbing near a raptor nest.

#### **Complete Identification, Evaluation, and Nomination Procedures for Cultural Resources**

Under any alternative, the appropriate steps would be taken under §110 of the National Historic Preservation Act to determine the eligibility of cultural resources for listing on the National Register of Historic Places. The NPS would follow 36 CFR Parts 60 and 63 as well as pertinent National Register bulletins. Resources would be evaluated as a traditional cultural property, archeological resource, historic resource, and cultural landscape as appropriate. If considered as a traditional cultural property, appropriate consultation would be conducted.

## ALTERNATIVE A

Alternative A offers essentially unregulated climbing on the tower and allows the most climbing activities of all the alternatives. Under this alternative:

The current mandatory climbing registration system would be abolished.

Climbers would be allowed to camp overnight on the tower with a permit.

Ropes could be left unattended on the tower for long periods of time.

Unlimited and unregulated bolting would be allowed including the use of power drills. (Power drills would not be allowed if banned in the new nation-wide NPS climbing policy.)

Temporary route closures near nesting raptors would continue in order to lessen the impact on nesting activities and fledgling raptors. The closures would be based on reports from climbers after bird(s) are disturbed.

## ALTERNATIVE B: NO CHANGE

Alternative B maintains the status quo. This alternative is the baseline against which all other actions are analyzed. Under this alternative:

Existing climbing regulations would remain in place and climbers would still be required to register.

Bolting would continue to be allowed and the number of bolts is expected to increase.

The level of climbing would likely remain constant or continue to increase on crack and face routes.

No action would be taken by the NPS concerning the national registry eligibility of the tower.

Minimal action to reduce soil and vegetation impacts on approach trails, staging areas, and the tower summit would continue.

Temporary route closures near nesting raptors would continue in order to reduce the impact on nesting activities and fledgling raptors. The closures would be based on reports from climbers after bird(s) are disturbed.

## ALTERNATIVE C

The following actions would occur under Alternative C:

There would be a 30-day voluntary June closure phased-in over three years. The phase-in would begin in 1995 with a one-week voluntary closure in June, followed by a two-week voluntary closure in June, 1996, and a full 30-day voluntary June closure in 1997. The closure zone would include all areas inside the loop of the Tower Trail. The NPS would not enforce a closure, but would rely on climbers policing themselves and the new educational program to encourage compliance.

A set of criteria for determining the effectiveness of a voluntary closure would be developed. The current climbing registration system would be used to measure compliance with the closure. The voluntary June closure would become mandatory sometime in the future if compliance is inadequate. Closure success will be determined by evaluating climber registration data and consulting with the work group and other user groups of the monument. Factors such as the level of climbing activity and level of traditional cultural activities in June will be considered in evaluating "success."

Replacement and new bolting would be allowed by permit or registration.

The NPS would not nominate the tower to the National Register of Historic Places until proper consultation with American Indian Tribes took place and tribes approved the nomination.

Crack and face climbing would be allowed, but no new face routes requiring new bolt installation would be permitted. "Clean climbing" techniques would be encouraged. Any face routes established illegally would be removed.

Replacement of bolts with a power drill may be allowed. Proposed nation-wide NPS climbing regulations, however, may ban the use of power drills in all park units.

Mitigation of vegetation trampling and soil erosion would occur by rehabilitating and maintaining the summit trails and signing and maintaining four approach trails from the Tower Trail to the base of the tower. All work would be coordinated and supervised by the NPS. Rehabilitation on the trails would be a cooperative effort by the NPS, climbing organizations, and local groups. The trails would avoid crossing the two lithic scatter archeological sites between the tower and the Tower Trail.

The addition of new software and hardware left on the tower would be discouraged unless absolutely necessary for safety reasons. The replacement of old webbing with neutrally colored webbing or low visibility chain would be encouraged. The use of neutrally colored chalk or rosin instead of white chalk would also be encouraged.

Climbing on the tower within 50 meters of an occupied raptor nest would be restricted. The closures would be based on reports from climbers after bird(s) are disturbed. Once a nest was located, any routes within 50 meters of it would be closed until the young fledged, usually between mid-June and mid-July. All other routes would remain open. Nesting attempts would be monitored to determine whether the 50-meter restriction is successful. The U.S. Fish and Wildlife Service would be consulted over nest protection strategy should endangered peregrine falcons return to the tower.

Climbing levels may not exceed the five year (1989-1993) average levels for March and April levels to permit for free raptor nest site selection. A portion of the summit edge will be closed for raptor protection. (See table: "Registered Climbers from 1989 to 1993")

#### ALTERNATIVE D: PREFERRED ALTERNATIVE

The following actions would occur under Alternative D (Preferred Alternative):

A voluntary climbing closure for the entire month of June on the tower would be encouraged. The NPS would not enforce a closure, but would rely on climbers policing themselves and the new educational program to encourage compliance. The closure zone would include all areas inside the loop of the Tower Trail.

A set of criteria for determining the effectiveness of a voluntary closure would be developed. The current climbing registration system would be used to measure compliance with the closure. The voluntary June closure would become mandatory sometime in the future if compliance is inadequate. Closure success will be determined by evaluating climber registration data and consulting with the work group and other user groups of the monument. Factors such as level of climbing activity and level of traditional cultural activities in June will be considered in evaluating "success."

No new bolted routes would be permitted, but the replacement of existing bolts would be allowed. This would likely occur very infrequently. A permit or registration system would be implemented to monitor and regulate bolting activities.

The NPS would not nominate the tower to the National Register of Historic Places until proper consultation with American Indian Tribes took place and tribes approved the nomination.

Crack and face climbing would be allowed, but no new face routes requiring new bolt installation would be permitted. "Clean climbing" techniques would be encouraged. Any face routes established illegally would be removed.

Replacement of bolts with a power drill may be allowed. Proposed nation-wide NPS climbing regulations, however, may ban the use of power drills in all park units.

Mitigation of vegetation trampling and soil erosion would occur by rehabilitating and maintaining the summit trails and signing and maintaining four approach trails from the Tower Trail to the base of the tower. All work would be coordinated and supervised by the NPS. Rehabilitation on the trails would be a cooperative effort by the NPS, climbing organizations, and local groups. The trails would avoid crossing the two lithic scatter archeological sites between the tower and the Tower Trail.

The addition of new software and hardware left on the tower would be discouraged unless absolutely necessary for safety reasons. The replacement of old webbing with neutrally colored webbing or low visibility chain would be encouraged. The use of neutrally colored chalk or rosin instead of white chalk would also be encouraged.

Climbing would be restricted on the tower within 50 meters of an occupied raptor nest. The nest would be identified by NPS personnel prior to the heavy climbing season and early in the nesting season in the beginning of April. Once a nest was located, any routes within 50 meters of it would be closed until the young fledged, usually between mid-June and mid-July. All other routes would remain open. Nesting attempts would be monitored to determine whether the 50-meter restriction is successful. The U.S. Fish and Wildlife Service would be consulted over nest protection strategy should endangered peregrine falcons return to the tower.

Climbing levels may not exceed the five year (1989-1993) average levels for March and April to permit for free raptor nest site selection. A portion of the summit edge above the nest would be closed for raptor nest protection as well. (See table: "Registered Climbers from 1989 to 1993")



## ALTERNATIVE E

Alternative E would be fairly restrictive for climbing activities and would mitigate some natural and cultural resource impacts. The alternative would include the following:

Mandatory closure of the entire tower to climbing for the month of June would occur in observance of American Indian traditional beliefs and values associated with the tower. The closure zone would include all areas inside the loop of the Tower Trail.

No new bolting or replacement of existing bolts would be allowed. Any bolts or pitons placed illegally would be removed. Development of new routes would probably be impractical due to this restriction.

The NPS would nominate the tower to the National Register of Historic Places after consultation with American Indian Tribes.

No drilling or hammering would be allowed to affect the natural quiet, effectively eliminating piton use. Many aid routes that require pitons for protection would no longer be climbable.

Vegetation trampling and soil erosion would be mitigated by rehabilitating the summit trail, signing the approach trails, and developing and maintaining them. The work would be conducted solely by the NPS.

No nylon webbing would be allowed to be left on the tower to impact the visual aesthetics. The use of chalk or rosin also would not be allowed.

Climbing from March into April would be prohibited until raptor nest sites are determined. The nest would be identified by NPS personnel prior to the heavy climbing season and early in the nesting season in April. Once a nest was located, any routes within 100 meters of it would be closed until the young fledge, usually from mid-June to mid-July. All other routes would remain open. Nesting attempts would be monitored to determine whether the 100-meter restriction is successful. The U.S. Fish and Wildlife Service would be consulted over nest protection strategy should endangered peregrine falcons return to the tower. A portion of the summit edge above the nest would be closed for raptor nest protection as well. (See table: "Registered Climbers in March and April, 1989-1993")

## ALTERNATIVE F

Alternative F is the most restrictive to climbing activities and climbing would be entirely banned. This alternative is the most protective to natural and cultural resources and would help restore the cultural and natural resource integrity of the tower. The alternative would include the following:

Climbing would be banned on the tower and public access denied to all areas within the loop of the Tower Trail.

All bolts and pitons would be removed from the tower.

The tower would be nominated by the NPS to the National Register of Historic Places after consultation with American Indian Tribes.

The summit trail, Meadows trail, approach trails, and social trails made by hiker/climbers would be restored to more natural conditions.

Visual and noise impacts from climbers on the tower would be eliminated.

Climbers would not interfere with raptor use of the tower.

### SUMMARY OF THE DIFFERENCES BETWEEN THE ALTERNATIVES

Alternatives	Close Climbing for Cult. Res.	Bolting: New and Replacement	Type of Climbing	Drills and Hammers	Software left on the tower	Seasonal Raptor Closure
<b>A</b>	No closure	Unlimited bolting	All Types, including new routes	Both allowed	Any Type	Only routes near nests, based on climber reports
<b>B No Change</b>	No closure	Unlimited bolting, no power drills	All Types, including new routes	Both allowed	Any Type	Only routes near nests, based on climber reports
<b>C</b>	Voluntary June closure with 3 year phase-in	Both new and replacement bolting allowed by permit	All types, including new routes	Both allowed	Any Type	No climbing within 50 m. of occupied nest, based on climber reports, maintain climbing levels near 5 year March and April average
<b>D Preferred Alternative</b>	Voluntary June closure with no phase-in	Replacement bolting by permit, no new bolting	No new face or crack routes that require bolts	Hammers allowed, drills only by permit	Replace slings with neutrally-colored ones or chain	No climbing within 50 m. of occupied nest, i.d. by NPS in April, maintain climbing levels near 5 year March and April average
<b>E</b>	Mandatory June closure with no phase-in	No bolting allowed	No new face or crack routes that require bolts	No drills or hammers allowed, thus no pitons	None	Prohibit climbing in March and April until NPS i.d. occupied nest, then no climbing within 100m. of occupied nest
<b>F</b>	Entire tower year-round	all bolts and pitons removed	No climbing	No drills or hammers allowed.	None	No climbing at all, nest i.d. by NPS in April

# REGISTERED CLIMBERS FROM 1989 TO 1993

	1989	1990	1991	1992	1993	Total	Average
January	9	0	3	23	6	41	8.2
February	0	0	20	49	10	79	15.8
March	113	55	112	68	12	360	72.0
April	196	342	144	243	286	1,211	242.2
May	1,069	1,100	824	1,121	1,000	5,114	1,022.8
June	803	1,221	1,120	1,136	1,148	5,428	1,085.6
July	809	783	1,054	1,124	1,087	4,857	971.4
August	907	807	1,144	1,180	1,288	5,326	1,065.2
September	820	725	772	1,206	800	4,323	864.6
October	288	202	288	336	403	1,517	303.4
November	26	29	5	18	47	125	25
December	10	10	10	1	5	36	7.2
Annual Totals	5,050	5,274	5,496	6,505	6,092	28,417	5,683.4

## OTHER ELEMENTS OF ALTERNATIVES CONSIDERED BUT ELIMINATED

### Removal of the Historic Stake Ladder

A suggestion was made to remove the stake ladder at Devils Tower. Removal of the ladder would adversely affect this cultural resource and removal is not necessary to reduce climbing impacts.

### Establish a Recreational Carrying Capacity on the Tower

Recreational carrying capacities are determined by the physical, social, and ecological carrying capacities for a specific area. The term carrying capacity is infrequently used today. A relatively modern technique for managing visitor use is the Visitor Experience Resource Protection (VERP) concept. The VERP concept is preferable to the NPS and is mentioned previously in this plan under Actions Common To All Alternatives.

### Total Elimination of the Use of Power Drills

The use of motorized equipment in wilderness areas is a very controversial issue in the climbing world. Devils Tower has no designated or potential wilderness, thus it is the Superintendent's discretion to establish policies regarding the use of motorized equipment in the monument including power drills. However, this issue may be moot since proposed nation-wide NPS climbing regulations may ban the use of power drills in all park units this year. From 1991 to the present, power drills have not been allowed on the tower, which was defined as an undeveloped area. Is the tower really an undeveloped area? There are 190 climbing routes established on the tower and approximately 580 bolts. The tower is also adjacent to the main monument road and trail, visitor center, and monument office building. After weighing all the factors, it appears that total elimination of power drills may be more negative than positive. A controlled system for the use of power drills for the replacement of bolts as identified in the preferred alternative would provide less impact to the rock, less impact to the natural quiet, and potentially a stronger, safer, and quicker bolt placement.

## ENVIRONMENTAL CONSEQUENCES

This section is divided by resource type, with a description of the affected resource followed by effects common to all alternatives and then by alternative. Effects common to each alternative are not analyzed again under each alternative.

### NATURAL RESOURCES

#### Geology

**Affected Environment.** The summit of Devils Tower reaches an elevation of 5,117 feet, 1,270 feet above the Belle Fourche River. The tower is approximately 600 feet from base to summit, with a base diameter of about 800 feet. The top of the tower is relatively flat, although the center has a high point. The summit is 300 feet from north to south, and 180 feet from east to west. The horizontal layers of sandstone, shale, gypsum, and siltstone surrounding the tower were deposited under ancient seas about 70 million years ago. The tower itself was formed by molten rock (magma) that hardened either at the surface or just beneath it about 54 million years ago. Erosion of the surrounding sediments then exposed the tower. The tower is formed of phonolite porphyry, a very hard igneous rock with large crystals of white feldspar (Gardiner and Guilmette 1986).

The Sundance formation contains clams, oysters, belemnites (squid), and other marine fossils of the Late Jurassic Age. No fossils have been found in the Spearfish or Gypsum Spring formations. No remains or signs of ancient vertebrates have been found in the monument (NPS 1991b).

As previously described, the use of the tower by climbers and, in particular, the permanent placement of bolts and pitons has affected the geologic integrity of the tower. How this integrity is affected and to what extent is unknown. It should be noted that the vast majority of climbers do not place permanent bolts and pitons when climbing the tower.

**Effects of Actions Common to All Alternatives.** A long-term monitoring program would help identify climbing effects on the tower's geology and to what extent those effects are unacceptable. The data and trends that monitoring reveals will determine how severely climbing will be restricted to reduce unacceptable effects.

The development of a climber brochure would educate climbers on environmental effects caused by climbing and may help reduce impacts to the tower geology.

**Effects of Alternative A.** Without mandatory climber registration there would no longer be a means of measuring the level of climber use of the tower. The level of climbing use and associated impacts could increase significantly, but data would not be available to quantify the increase. Furthermore, the continuity of compiling annual climbing registration records since 1937 would be lost.

Overnight camping would open up the tower summit to new impacts such as the moving of rocks to create wind breaks and the placement of tent stakes.

Expanded and unregulated bolting and continued use of pitons would have irreversible effects on the rock. More holes would be placed in the rock especially if power drills were allowed. New anchor stations would cause additional impacts to the rock.

In the long-term, continued bolting would reduce the scientific, historic, and natural resource significance of the rock.

One study has shown that stains resulting from the continued use of white chalk combined with sweat may remain on popular hand holds and cause dissolution of minerals. In the long-term, this may cause holds to break off, leading to a change to the integrity of the rock and the difficulty of climbs (MacGowan 1987). However, the effect of chalk on Devils Tower rock, phonolite porphyry, has not been studied and is unknown.

**Effects of Alternative B, No Change.** Impacts would be the same as described for alternative A, with the exception of camping impacts.

**Effects of Alternative C.** Effects listed under alternative B also pertain to alternative C.

The voluntary June closure would have a minimal reduction in the amount of physical damage to the rock because many climbers would simply reschedule their climbing trip to another summer month.

Regulated bolting and continued use of pitons would continue and have irreversible effects on the rock. More holes would be placed in the rock. New anchor stations would cause additional impacts to the rock.

**Effects of Alternative D, Preferred Alternative.** Faces that are currently free of bolts will remain that way.

Replacement of bolts would only be allowed under certain conditions outlined by the NPS, thus little new damage would occur to the rock with proper removal and installation.

Currently bolted areas would remain as permanent impacts to the rock.

Although actual climbing would have more of an erosional effect on the tower than chalk and sweat, the use of rosin may be less of an impact than chalk. Rosin is organic (derived from pine tree pitch) and may possibly be digested by organisms such as rock lichen. The effects of chalk or rosin are negligible compared to piton and bolt impacts (MacGowan 1987).

**Effects of Alternative E.** Faces that are currently free of bolts will remain that way.

As bolts and anchor stations become worn, rusted, and need replacement, they will be pulled out of the rock. This would potentially cause rock to flake or break off, adversely affecting the integrity of the rock.

In the long-term, once bolts and anchor stations fall out or are pulled out because of a lack of maintenance, the hole(s) in the rock will be exposed to the natural elements. Eventually the holes may be weathered smooth and appear natural.

In the long-term, the geologic integrity of the rock may be altered by large accumulations of chalk and sweat on hand holds. Rain does not seem to wash away frequently chalked areas, even in the Pacific Northwest.

**Effects of Alternative F.** The entire tower could be restored to relatively natural conditions.

Removal of bolts, anchor stations, and pitons would likely result in significant additional damage to the rock. Chopping bolts flush with the rock would leave visible scars on the rock. In the long-term, the open holes would be exposed to natural weathering and erode into part of the rock.

#### Floodplains and Wetlands

The Devils Tower CMP does not impact any floodplain or wetland areas. The tower area is outside the 100-year and 500-year floodplain. There are no wetlands on the tower or surrounding its base.

#### Threatened and Endangered Species

There are no known threatened or endangered plants or animals that would be affected by any of the proposed actions. In the winter, bald eagles (*Haliaeetus leucocephalus*) are observed although they are not known to nest in the monument. The monument is within the historic range of the black-footed ferret (*Mustela nigripes*), however the species does not currently exist at Devils Tower.

There are very few and sketchy sightings of peregrine falcon (*Falco peregrinus*) within the monument. Currently there are no known nesting peregrine falcons in eastern parts of either Wyoming or Montana or in the western Dakotas. The tower is one of the few large outcrops in the Black Hills and in the Great Plains that provides potential nesting habitat for peregrine falcons. Should peregrine falcons recolonize the plains, Devils Tower would be very important to the regional population. Climbing at the tower may prevent them from nesting (Britten 1992).

#### Wildlife

**Affected Environment.** Animal species that normally inhabit the monument include whitetail deer, mule deer, black-tailed prairie dog, red squirrel, porcupine, cottontail rabbit, least chipmunk, various birds, and an occasional red fox, bobcat, bullsnake, and prairie rattlesnake. None of the mammals or reptiles would be affected by the proposals. Birds observed to use the tower that may be affected by climber use include turkey vulture, rock dove, American kestrel, prairie falcon, and white-throated swift.

Prairie falcons are the only known raptor to nest on the tower crags and ledges. The first recorded prairie falcon nesting site was found in 1972 or 1973. It is believed that the tower may support only one pair of ecologically or morphologically similar species because of territoriality and space limitations (Britten 1993). Climbing activity begins to increase in May and generally peaks in August. Birds may begin nesting as early as April and fledge some time from mid-June to mid-July.

**General Impacts.** Although there is little information concerning recreational use impacts on animal species, some generalizations may be made in light of wildlife behavior and monitoring research.

"Visitor Impact Management, A Review of Research" (Kuss, et. al. 1990) summarizes the complex variables related to recreation impacts on wildlife as follows:

There is no uniform relationship between the amount of recreational use and wildlife population variables. Many statements can be found in literature to the effect that wildlife will be displaced if human intrusion becomes "too great" (Ream 1980), but little evidence exists to show when the level of disturbance becomes too great. Larger game species tend to be affected more by direct contact with people, while smaller forms of wildlife appear to be more susceptible to indirect impact on habitats.

Some types of recreational activities have greater impacts on wildlife than other types of activity. Impacts can vary according to the type of transportation used (vehicular versus pedestrian), the extent to which an activity is concentrated or dispersed, and various characteristics of visitors such as party size and behavior. Setting attributes that can affect the outcome of human-wildlife interactions include elevation, topography, weather, amount of vegetation and escape cover, and food availability. It is well-established in the literature that human-wildlife interactions should be avoided at fundamental and critical habitat areas and seasons.

There is very little scientific information available that addresses climbing disturbance to nesting prairie falcons. Research conducted at Pinnacles National Monument by Cymerys and Walton, 1988 concluded:

In the future, climbing at active nesting sites can be expected to increase territoriality or nest defense, followed in subsequent spring breeding seasons with shifts first to different ledges, then different cliffs, then abandonment of territories. The end result would likely be a significant reduction in raptor population density and size. Raptor/climber interactions could result in loss of eggs or young if conflicts are frequent, or of extended duration (Call 1979, Snow 1973).

Pinnacles is different from the tower in that there are a variety of cliffs and ledges available for nesting territory and climbing opportunities. Conversely, Devils Tower is a small, limited resource. A preliminary survey and literature search on avifauna and climbing at Devils Tower was conducted by Britten in 1992. A summary of results include:

Climbers on Devils Tower do disturb nesting prairie falcons as indicated by climber reports of being attacked by the birds. It is likely that climbers cause prairie falcons to fail to successfully fledge young from Devils Tower in some years.

Climbing appears to have minimal disturbance on turkey vultures roosting on and near the tower because the birds seem to be habituated to people.

The effects of climbers on other birds using the tower is unknown. There may be some effect on all species using the tower.

While the tower is not important to regional or continental populations of prairie falcons, golden eagles, or any other raptors, it may be important to a visitor's experience in Devils Tower to see raptors on the tower or to know that they nest on it.

**Effects of Actions Common to All Alternatives.** Consistent and long-term monitoring of raptors on and nearby the tower would provide necessary data to make informed decisions regarding the protection of bird species.

Educating climbers through the climber brochure, magazines, and guide books about raptor use on the tower would help reduce potential adverse impacts to nesting birds.

**Effects of Alternative A.** Camping on the tower could add to the current stresses to wildlife on the tower.

Without climber registration, some could still be left unaware of nesting areas on the tower, which could add to raptor impacts.

Climber contact would directly impact nesting raptors. The birds may not return to the nest once human confrontation has taken place. Young may be abandoned and die if the adults do not return to the nest.

The level of climber use of the tower could prevent peregrine falcons from returning to Devils Tower to nest.

**Effects of Alternative B, No Change.** Ensuring climbers are aware of nesting areas on the tower through the climber registration procedure would reduce impacts to raptors.

Other impacts would be the same as described for alternative A.

**Effects of Alternative C.** Effects listed under alternative B also pertain to alternative C.

If successful, the phased-in voluntary closure could have some positive influence on prairie falcon fledging success because there would be very little disturbance during the month of June.

**Effects of Alternative D, Preferred Alternative.** Prairie falcons would have a good opportunity to fledge young and would not have to compete with climbers for space.

In the long-term, peregrine falcons may colonize the tower, assuming the western population continues to increase and nest sites are found soon enough to restrict any climbing near them.

**Effects of Alternative E.** Disturbance to prairie falcons would be virtually eliminated and they would have an excellent opportunity to fledge young from Devils Tower. The same would be true for other raptors, including peregrine falcons, should they colonize the tower.

**Effects of Alternative F.** Climber-induced disturbance to prairie falcons on the tower would be eliminated. They would also have an excellent opportunity to fledge young from the tower.

In the long-term, peregrine falcons may colonize the tower, assuming the population of western peregrine falcons continues to increase.

#### Soils and Vegetation

**Affected Environment.** The monument supports three of the four distinct vegetation complexes that characterize the Black Hills. These include: (1) Rocky Mountain coniferous forest complex dominated by ponderosa pine, (2) grassland complex of the northern Great Plains, and (3) deciduous forest complex. A fourth complex would include the rocky tower top and sides that support a limited variety of bushes, lichens, grasses, and forbs. (NPS 1991b)

The three main soil and vegetation impact areas of concern are the approach trails from the Tower Trail, the base of climbs, and the tower summit. Data does not exist to show if and how climbers are impacting the area between the Tower Trail and the tower base. Hiker/climbers also use this area and cause trampling and soil erosion to some extent.

**General Impacts.** A basic study of impacts to tower base vegetation was conducted by monument personnel in the summer of 1992. The study showed that the more popular climbs were the most impacted at their base or staging area.

A study conducted by Driese and Roth (1992) concerning the effects of human disturbance on the summit of Devils Tower concluded:

The most severe resource damage, including trail erosion and soil loss is found along the trail connecting the top of the scramble from the Meadows on the east margin of the tower to the summit cairn. This is the main route access to the summit and can expect to see more erosion.

The summit vegetation community is fragile, thus travel should be restricted to the existing trail and to bare rock. Bare rock covers over 31 percent of the summit.

Moderate vegetation disturbance was found along the northeastern edge of the summit and from the north summit route and south summit route to the summit cairn.

In general, with the exception of the main Meadows to summit trail, the summit community on the tower is not seriously damaged at this time.

Among the 21 species of plants located by Driese and Roth, the study also found leafy spurge (*Euphorbia esula*) to exist on the tower summit. It is not known how seed establishment of this species occurred on the summit, possibly high winds or potentially it was carried in a climber's shoe, pack, or clothing after they had walked through the monument. Leafy spurge is a common noxious weed in Wyoming and the monument. Efforts to remove leafy spurge from Devils Tower have been ongoing for about 50 years.

Areas in and around trails and climbing routes would be affected by foot traffic. The primary impact on soils would be compaction, which would decrease permeability, locally alter the soil moisture, and diminish the water storage capability. This would result in slower rates of water transmission within soils and increased runoff on the surface, increasing soil erosion. Prolonged trampling would gradually decrease vegetation and increase exposure of bare ground to the direct erosive impact of rainfall. Erosion would take the form of channelization on barren areas of even a slight slope angle. Compaction of the soil would be minimized in some areas due to frost action, which expands the soil.

Foot traffic would also change the amount of moisture available to plants which, in turn, would alter the relative abundance of some species. Plants that invade disturbed areas would become more common. Increased erosion would lead to exposure of root systems and the subsequent death of more water sensitive plants. Germination of some plant species may be inhibited by soil compaction resulting from foot traffic. The impacts of trampling would range from complete exclusion of vegetation to slight shifts in species composition. In shrublands, the amount of grass and the number of low plants between the shrubs would be reduced. In grasslands, the proportion of annuals and quick-spreading perennials would increase.

**Effects of Actions Common to All Alternatives.** The long-term monitoring program should help determine the type and extent of impacts occurring in this zone of multiple use. Impacts around the base of climbs are caused by both hikers and climbers while impacts on the summit are caused only by technical climbers.

Improved education would help monument visitors to stay on the trails and would protect the soils and vegetation.



The climber brochure would also help visitors refrain from removing vegetation and clearing lichen off the rock to enhance the climb.

**Effects of Alternative A.** Without a climber registration system, the level of climber use on the tower would be left unknown. Climbing use and impacts to soils and vegetation could increase and would not be monitored effectively.

Without climber registration, some climbers could still be left unaware of the need to protect soils and vegetation.

Current soil and vegetation impacts along approach routes, the base of climbs, and the summit would continue to increase without the implementation of any mitigation measures. Impacts to rock lichens would increase.

New impacts would occur on the summit from overnight camping activity.

**Effects of Alternative B, No Change.** Current soil and vegetation impacts along approach routes, the base of climbs, and the summit would continue to increase.

**Effects of Alternative C.** Effects listed under alternative B also pertain to alternative C.

If successful, the June closure could have some temporary positive effects on soils and vegetation by giving the area a rest during the growing season. However, this may be offset if impacts during months other than June increase as climbers reschedule their trips to the tower.

**Effects of Alternative D, Preferred Alternative.** Under this alternative, the amount of soil and vegetation loss on climbing approach trails and the tower summit would be reduced.

Climbers would be actively involved with the rehabilitation and maintenance of the approach trails and staging areas, further sensitizing them to the need to reduce impacts.

**Effects of Alternative E.** Impacts would be similar to those described for alternative D, although climbers would not be directly involved with rehabilitation and maintenance of the approach trails and staging areas.

**Effects of Alternative F.** Summit trails would be restored. The tower base and staging areas could be restored to their natural condition as well.

## Natural Quiet and Visual Aesthetics

**Affected Environment.** Visitors' expectations of their experiences in the monument and their perception of what constitutes impairment of natural quiet and visual aesthetics may help determine the level of impact on these resources. These expectations and perceptions vary dramatically with various types of monument users, thus these resources are the most difficult to evaluate for impacts.

The most apparent and common intrusions on natural quiet and visual aesthetics is the presence and sounds of climbers and their gear on the tower. Other intrusions include the use of drills and hammers and the permanent placement of shiny climbing hardware and brilliantly colored software. White gymnastics chalk also looks unnatural on the rock and causes a visual impact, though most monument visitors do not get close enough to notice. At the base of very popular routes, litter and human waste may be a visual as well as a health concern.

At the end of June, July, August, and September of 1992, litter was collected from the base of climbing routes by monument personnel. The results of this study concluded the following.

- Athletic tape used to protect hands and fingers when climbing or colored tape to mark ownership of equipment was the most common item found.
- No human waste sites were found during the litter search.
- The amount of litter found was not of large quantities and the pieces were fairly small. Therefore, litter may not be noticed by the casual observer. It appeared that climbers were cleaning up after themselves and others. (NPS 1993a)

Although climber-caused litter did not appear to be a significant visual impact during this study period, the litter inventory and monitoring program was continued in 1993. The 1993 data shows a significant amount of litter found from May 27 to August 8, a total of 107 items. The Bowling Alley, Broken Tree, and Soler sites had the most counts of litter. During the July 1, 1993 inventory one human waste site was found as well.

**Effects of Actions Common to All Alternatives.** The educational program would help climbers become more aware of their responsibility in protecting monument resources and help them adopt a low impact climbing ethic.

The continuance of a litter monitoring program, plus the monitoring of hardware and software placement and replacement would help determine whether visual impacts are being reduced or increased.

**Effects of Alternative A.** Without a climber registration system, some climbers may not receive the educational information needed to minimize impacts to the viewshed and natural quiet. Noise and visual impacts would continue. Visitors would continue to see and hear climbers from trails within the monument.

Climbers would continue to use hammers for piton and bolt installation, resulting in noise for long periods of time.

Climbers would continue to install many new bolts and leave brightly colored slings for long periods of time. This would continue to leave a permanent visual impact on the rock. White chalk use would continue.

Human sounds and lights would be observed on the tower summit at night as a result of overnight camping by climbers. Litter and human waste left on the tower summit might increase.

**Effects of Alternative B, No Change.** Climbers would continue to use hammers for piton and bolt installation, resulting in noise for long periods of time.

Climbers would continue to install new bolts and brightly colored slings that would continue to leave a permanent visual impact on the rock. White chalk use would continue.

**Effects of Alternative C.** Effects listed under alternative B also pertain to alternative C.

If successful, the June closure would offer some temporary mitigation to many visual and auditory intrusions caused by climbing activities. Impacts during months other than June, however, could increase as climbers reschedule their trips to the tower.

**Effects of Alternative D, Preferred Alternative.** Noise impacts would be reduced due to less bolting.

Visual impacts would be reduced by use of rosin, replacement of slings with neutrally colored ones, and the reduction of permanent placement of bolts and anchor stations.

**Effects of Alternative E.** Noise impacts from drills or hammers would be eliminated.

Under alternative E, no additional visual impacts would occur to the tower than what currently exist.

In the long-term, because bolt replacement would not be allowed, old bolts may fall out or be removed by climbers for safety reasons, thus removing a visual impact to the tower.

**Effects of Alternative F.** The tower's natural quiet and visual aesthetics would be restored.

## CULTURAL RESOURCES

### Ethnographic Resources

**Affected Environment.** Observation, literature searches, and interviews with American Indians, indicate that the butte known as Devils Tower is a sacred site to many American Indians of the Northern Plains. Some known activities that occur in the monument today include prayer offerings, the leaving of prayer bundles, sweatlodge rites, and the Sun Dance. The Sun Dance has been held at Devils Tower by some Lakota people since 1983.

A preliminary ethnographic overview and assessment of Devils Tower was completed in 1991 by Hanson and Chirinos. According to that report, six nations inhabited the Devils Tower region at some point in history and all believe it to be a sacred site. The six nations include Wind River or Eastern Shoshone, Kiowa, Crow, Cheyenne, Arapaho, and Lakota.

The Lakota ethnohistoric data reveals a strong ancient and sacred relationship between their nation and the Devils Tower and Black Hills region. The region is a place to fast, pray, and worship the Great Mystery. The Lakota also performed renewal of life ceremonies at the tower, referred to as the Sun Dance. Data also indicates that the Lakota conducted sweatlodge ceremonies and left offerings. (Hanson and Chirinos 1991)

Other traditional American Indian activities that may have been conducted in the monument include: winter camps, hunting activities, vision quests, and burials. American Indians are very private about their traditional cultural practices, including religious ceremonies. There is insufficient research to indicate one band affiliation with the monument to be stronger than another. All the American Indian activities performed are not completely known, neither are the times and locations of those activities.

A determination of eligibility would be completed for the tower as a traditional cultural property for its American Indian relationships.

**Effects of Actions Common to All Alternatives.** A thorough ethnographic study needed to implement the long-term natural and cultural resources monitoring plan also would help identify American Indian lifeways and address their concerns more accurately and reasonably.

Some adverse effects that an ethnographic study may have is the feeling by American Indians that their private religious practices are being exploited and put on display. Prior to any NPS ethnographic study, appropriate consultation with American Indian people would occur to alleviate as many impacts to traditional cultural beliefs and practices as possible.

A cross-cultural interpretive program would help American Indians, climbers, and other park visitors understand and respect each other's values and beliefs.

**Effects of Alternative A.** Under this alternative, unrestricted, year-round climbing would continue and probably increase. This could reinforce and increase the conflict between climbers and American Indians.

The presence of climbers camping overnight on the tower would be an additional source of friction.

Adverse effects of climbing activities on American Indian traditional cultural beliefs and practices would continue.

**Effects of Alternative B, No Change.** Impacts would be the same as described for alternative A, except that no camping on the tower would occur.

**Effects of Alternative C.** Effects listed under alternative B also pertain to alternative C.

If successful, the June closure would offer some temporary mitigation to many visual and auditory intrusions caused by climbing activities. American Indians visiting the tower in June would experience a more spiritually appealing resource than now exists. The number of climbers during months other than June, however, could increase as climbers reschedule their trips to the tower.

**Effects of Alternative D, Preferred Alternative.** Climbers would not impact American Indian traditional cultural practices during the month of June.

Climbers would show respect for American Indian concerns through their willingness to avoid climbing the tower in June.

**Effects of Alternative E.** Implementation of this alternative would allow American Indians to practice their traditional cultural practices without visual and auditory distractions from climbers.

A mandatory closure by the NPS would not give climbers the opportunity to freely respect American Indian beliefs.

**Effects of Alternative F.** Climbing activities would not impact American Indian traditional cultural practices.

A mandatory closure by the NPS would not give climbers the opportunity to freely respect American Indian beliefs. On the contrary, friction between the climbing community and American Indians could increase.

#### **Historic Resources**

A determination of eligibility would be completed for the historic stake ladder. About 170 feet of the 1893 climbing ladder remain. No impacts to this historic resource are expected under any of the alternatives considered.

#### **Archeological Resources**

There are two small lithic scatter sites between the Tower Trail and the base of the tower. It does not appear that climbers are impacting these areas. Any trail work conducted would avoid these lithic scatters.

#### **VISITOR USE**

**Affected Environment.** The primary focus of visitor use occurs on the 3-mile road leading to the tower base, on the tower itself, and at the prairie dog town. Other visitors enjoy picnicking, camping, or hiking the monument's eight miles of trails. The most popular trail is the paved 1.25-mile Tower Trail that encircles the tower, providing visitors with views of the tower, associated natural features, and climbing activities. Photography, wildlife viewing, and interpretive programs and exhibits are other opportunities visitors enjoy.

The visitor activity on which this plan focuses is climbing. Climbers come to Devils Tower from all over the world. Previous sections describe the history and current climbing use in the monument. In general, Devils Tower has a long established history of technical climbing beginning in 1937. The popularity of climbing has increased to over 6,000 annual climbers by 1992. The type of climbing at Devils Tower has also changed dramatically over the years.

The type and level of climbing at Devils Tower does have an effect on other visitors as well as on climbers themselves.

**Effects of Actions Common to All Alternatives.** A cross-cultural education program would help the various types of visitors understand each other better and respect each other's uses of the monument. Crack and face climber conflicts would be reduced through education. Conflicts with other visitor activities, including those of American Indians, would also be reduced through education.

**Effects of Alternative A.** Overnight camping on the tower would become an additional activity available to a very small minority of monument visitors. The quality of experience for summit climbers and visitors watching below would be decreased by the presence of campers, camping equipment, litter, and human waste on the summit.

The elimination of the climber registration system would allow for a more free use of the monument.

The level of climbing would likely continue to increase, thus affecting the experience of non-climbing visitors including American Indians. The quality of experience for American Indians would be decreased by the presence of climbers on the tower during the month of June when traditional activities are performed. (also see natural quiet and visual aesthetics).

Face routes would continue to proliferate. In the long-term, conflicts between traditional users of the tower (crack climbers) and face climbers could increase resulting in reduced visitor use satisfaction and increased friction between these two user groups. Increased bolting activities near cracks could decrease the quality of experience for traditional crack climbers.

**Effects of Alternative B, No Change.** The climber registration system does not allow for the freest use of the monument, but does permit a visitor to climb the tower within limits that also provide for the preservation of natural and cultural resources.

Other impacts would be the same as described for alternative A, although camping would not be available as a visitor use.

**Effects of Alternative C.** Effects listed under alternative B also pertain to alternative C.

If successful, the June closure would offer some temporary mitigation to many visual and auditory intrusions caused by climbing activities. American Indians visiting the tower in June would experience a more spiritually appealing resource

than now exists. The number of climbers during months other than June could increase as climbers reschedule their trips to the tower.

**Effects of Alternative D, Preferred Alternative.** The current routes would continue to be available for use, but new bolted routes would not exist (i.e., no new face climbs). New route establishment would occur only where removable protection is used. Since new routes usually require bolts at belay stations, climbers's wishing to establish new routes at Devils Tower would be denied the opportunity to do so.

Climbers would continue to be responsible for their own safety and would be allowed to replace worn out and unsafe bolts. Replacement of bolts would allow climbers a potentially safer climbing experience.

Crack and face climber conflicts would be reduced through continued sharing of the tower.

Conflicts with other visitor activities, including those of American Indians, would be reduced through the voluntary June closure to climbing.

**Effects of Alternative E.** Implementation of this alternative would limit the recreational climbing opportunities on the tower to existing crack and face routes. Aid climbing would be virtually eliminated due to the ban on pitons. Climbers would be denied the opportunity to perform this traditional type of climbing.

Climbing during the month of June would also be restricted. Climbers would be denied the opportunity to climb the tower during a month when climbing use has been traditionally high and weather conditions are usually excellent for climbing.

New route establishment would occur only where removable protection is used. Since new routes usually require bolts at belay stations, climbers's wishing to establish new routes at Devils Tower would be denied the opportunity to do so.

No replacement of bolts would decrease climber safety and eventually decrease the number of climbable routes available because of old, rusted, and hazardous belay anchors. Climbers may be denied the opportunity to climb traditional classic routes.

Conflicts with other visitor activities, including those of American Indians, would be reduced through the voluntary June closure to climbing and education.

**Effects of Alternative F.** All climbing opportunities on the tower would be eliminated.

Other visitor experiences could be improved by the elimination of climbers from the tower (see also effects on natural quiet and visual aesthetics). Those visitors who enjoy viewing climbers on the tower would no longer be able to do so.

The quality of the American Indian's cultural experience in the monument would be greatly enhanced.

### **SOCIOECONOMIC RESOURCES**

Both climbers and American Indians that visit Devils Tower contribute to the local economy. Climbers are more numerous than American Indians so climbers may be contributing more to the economy. Climbers traveling to Devils Tower from farther away typically spend more money than those from more proximate locations.

It should be noted that many climbers who visit Devils Tower camp in the campground and are self-sufficient. Also, climbers only make up about 1.3 percent of the monument's visitation on an annual basis and much less during any one month. A more in depth sociological study needs to be conducted to provide the monument with a representative sample over a long time period. This study could be identified as part of the long-term monitoring program.

Alternative B would continue to affect the economy as described above. Any restrictions or prohibitions of climbing at the tower would affect the local economy to some extent and some business opportunities of the four monument commercial use climbing businesses and the two monument climbing guide book authors. Complete prohibition of climbing would most directly impact one local climbing guide that also conducts business in Nevada. Alternative D, the preferred alternative, would not significantly increase or decrease the socioeconomic impact on the local or regional community. Many climbers would reschedule their planned visits to months other than June. An increase in visitation in June for cultural purposes could have a positive influence on the local economy.

### **PARK OPERATIONS AND ADMINISTRATION**

The current climbing management program requires some administration. Registration cards are filled out with the supervision of an NPS employee, statistics are compiled, and reports and graphs are produced. Raptor nesting sites are monitored and closed to nearby climbing.

**Effects of Actions Common to All Alternatives.** An education and monitoring program would add time and effort required by NPS staff to produce a high quality climber brochure, various interpretive programs, displays, or exhibits, and to coordinate, supervise, and implement research projects and long-term monitoring protocols. Program administration costs will probably increase substantially when a climbing management plan is implemented.

**Effects of Alternative A.** Under this alternative, staff would not need to spend time registering climbers.

The elimination of mandatory climber registration would require special rule making. Devils Tower National Monument currently has a specific regulation on climber registration under the Code of Federal Regulations, 36 CFR 7.30.

The increased risk of accidents on the tower and boulder field would require an upgraded rescue and emergency medical response capability. Climbers and hiker/climbers would no longer receive a safety briefing during registration since the registration system would be abolished. In addition, visitors could scramble around in potentially dangerous high angle areas without registering or personal warning.

Staff would be solely responsible for the rehabilitation and maintenance of the approach and summit trails.

Monument staff would need to issue backcountry use permits to climbers wishing to camp overnight on the summit.

Rangers would need to patrol the tower summit for any camping violations and to pick up trash and human waste.

Raptor nest route closures would still need to be enforced. Raptor nesting data would be difficult to obtain.

**Effects of Alternative B, No Change.** Staff would be solely responsible for the rehabilitation of the approach and summit trails.

**Effects of Alternative C.** Additional time and commitment by NPS staff would be required to implement the proposed actions.

Staff would need to be dedicated to rehabilitation and maintenance of the approach and summit trails and coordinate and supervise any volunteer work. Volunteer work for approach trail maintenance would free up NPS employees to perform other duties.

A voluntary June closure would not require any enforcement because it would be solely the climbers' responsibility to not climb. Enforcement by a ranger would defeat the purpose of a voluntary closure.

Rangers would still need to patrol the tower for any violations of raptor nest route closures.

Administration of a climber registration system would continue.

A definition of a successful voluntary closure would need to be developed. The staff will measure compliance rates and determine if the voluntary closure is successful.

**Effects of Alternative D, Preferred Alternative.** This proposal would require additional time and commitment by NPS staff to implement actions. The development and implementation of a bolt replacement by permit system would require infrequent administration and would assist the monument in tracking bolt replacement data (type and size of bolt, method used, location, single or anchor).

Staff would need to be dedicated to rehabilitation and maintenance of the approach and summit trails and coordinate and supervise any volunteer work. Volunteer work for approach trail maintenance would free up NPS employees to perform other duties.

A voluntary June closure would not require any enforcement because it would be solely the climbers' responsibility to not climb. Enforcement by a ranger would defeat the purpose of a voluntary closure.

Rangers would still need to patrol the tower for any violations of new bolted routes and climbing within 50 meters of an occupied raptor nest. Illegally placed bolts and pitons would need to be removed.

Administration of a climber registration system would continue.

A definition of a successful voluntary closure would need to be determined. The staff will measure compliance rates, determine if the voluntary closure is successful, and be prepared to implement a mandatory June closure if the voluntary closure fails.

**Effects of Alternative E.** The actions in Alternative E would be very difficult for management to enforce. Rangers would have to be stationed at the tower base to ensure no illegal activities occurred such as bolting or the use of pitons and chalk. It would be difficult to determine if and when an individual left any new software or hardware on the tower.

Though very difficult, a mandatory March into April raptor nest protection closure would need to be enforced. Upon the location of the nest site, a 100-meter closure on either side of the nest would need to be enforced.

Staff would be solely responsible for the rehabilitation and maintenance of the approach and summit trails.

Climbing rangers would need to patrol the tower to ensure compliance with all regulations.

Illegally placed bolts and pitons would need to be removed.

Climber registration activities and requirements would continue.

**Effects of Alternative F.** Implementation of this alternative would eliminate the need to administer any climbing program.

The need for an active technical rescue program would be greatly alleviated.

Rangers would need to patrol the tower area for any illegal climbing.

Park staff would need to remove all bolts and pitons from the tower immediately as well as any that are illegally placed in the future.

Staff would be solely responsible for the rehabilitation and maintenance of the approach and summit trails.

# REFERENCES CITED

BRITTEN, MICHAEL W.

- 1993 "Progress Report on Avifauna and Climbing at Devils Tower National Monument, Results of 1992 Survey and Literature Search." Rocky Mountain Regional Office, Denver, Colorado.

CYMERYS, MARGARET, AND BRIAN JAMES WALTON

- 1988 "Raptors of the Pinnacles National Monument: Past and Present Nesting and Possible Impacts of Rock Climbers." Technical Report No. 30. Cooperative National Park Studies Unit. University of California at Davis. Institute of Ecology. Davis, California.

DAKOTA, LAKOTA, AND NAKOTA NATIONS

- 1993 Summit V Resolution No. 93-11. "Dakota, Lakota, Nakota Summit V." Kyle, South Dakota. June 7-11, 1993.

DEBENEDETTI, STEVE

- 1990 "The Rock Climbing Management Program - A Case Study from Pinnacles National Monument." Paper Given at George Wright Society Conference. El Paso, Texas. November 15, 1990.

DRIESE, KEN L., AND DON A. ROTH

- 1992 "A Description of the Vascular Flora and Mammal Fauna and the Effects of Human Disturbance on the Summit of Devils Tower." University of Wyoming. Laramie, WY.

GARDINER, STEVE, AND DICK GUILMETTE

- 1986 "Devils Tower National Monument, A Climber's Guide." The Mountaineers. Seattle, WA.

HANSON, JEFFREY R., AND SALLY CHIRINOS

- 1991 "Ethnographic Overview and Assessment of Devils Tower National Monument." University of Texas-Arlington. Department of Sociology-Anthropology. (unpublished report)

KRUMPE, EDWIN E., AND LYNN MCCOY

- 1991 "Pioneering Consensus in Hells Canyon." University of Idaho. *Focus*, Vol. 17.

KUSS, FRED R., ALAN R. GRAEFE, AND JERRY J. VASKE

- 1990 "Visitor Impact Management, A Review of Research." Volume One of a two-volume report examining visitor impact management for the national parks and other recreation lands. National Parks and Conservation Association. Washington, D.C.

MACGOWAN, DONNIE

- 1987 "Reliving the Chalk Wars: A Geochemical View." *Climbing*. April.

MATTISON, RAY H.

- 1956 "History of Devils Tower." Devils Tower Natural History Association.

PARKER, PATRICIA L., AND THOMAS F. KING

- 1990 "Guidelines for Evaluating and Documenting Traditional Cultural Properties." National Register Bulletin 38. U.S. Department of the Interior, National Park Service. Interagency Resources Division.

U.S. DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

- 1985 "Special Flood Hazard Report, Devils Tower National Monument." Omaha District. Omaha, Nebraska.

U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE

- 1987 "Native American Relationships Management Policy." *Federal Register*. Vol. 52, No. 183, Tuesday, September 22.

- 1988 *Management Policies*. Chapters 1, 5 and 8. Washington Office, Washington, DC.

- 1991a *Natural Resources Management Guideline, NPS-77*. Washington Office, Washington, DC.

- 1991b *Statement for Management for Devils Tower National Monument*. Rocky Mountain Regional Office, Denver, CO.

- 1991c "Memorandum from Acting Associate Director of Operations, Washington, D.C. to All Regional Directors on Rock Climbing Management." July 19, 1991.

- 1992 "Devils Tower National Monument, Inventory and Analysis of Tower Surface Area, Climbed Surface Area, Climbing Routes and Bolts on the Tower." Resource Management Division, Devils Tower National Monument, WY.



- 1993a "Devils Tower National Monument, Tower Base Vegetation Impact Study." Resource Management Division, Devils Tower National Monument, WY.
- 1993b "Resources Management Plan for Devils Tower National Monument." Devils Tower National Monument, WY. Also revised 1994.

## CONSULTATION AND COORDINATION

### LIST OF CONTACTS

The following agencies, organizations, businesses, and individuals have been contacted in the development of the draft Climbing Management Plan and Environmental Assessment.

#### U.S. Congress

U.S. Senator Malcolm Wallop  
U.S. Senator Al Simpson  
U.S. Representative Craig Thomas

#### Federal Agencies

##### National Park Service:

Washington Office, Washington, D.C.  
Rocky Mountain Regional Office, Denver, Colorado  
Albright Employee Development Center, Grand Canyon, Arizona  
Canyonlands National Park, Utah  
Colorado National Monument, Colorado  
City of Rocks National Reserve, Idaho  
Grand Teton National Park, Wyoming  
Joshua Tree National Monument, California  
Pinnacles National Monument, California  
Rocky Mountain National Park, Colorado  
Yosemite National Park, California

##### Bureau of Land Management:

Newcastle Resource Area

##### U.S. Forest Service:

Bighorn National Forest, Wyoming  
Black Hills National Forest, South Dakota

##### U.S. Fish and Wildlife Service:

U.S. Fish and Wildlife Service Field Office, Wyoming

#### State of Wyoming

Curt Gowdy State Park

#### **State of Colorado**

Eldorado Canyon State Park, Boulder  
City of Boulder Mountain Parks, Chautauqua Park

#### **Local Government**

Crook County (Wyoming) Commissioners

#### **American Indian Tribes**

Oglala Sioux Tribe, Pine Ridge, SD  
Flandreau-Santee Sioux Tribe, Flandreau, SD  
Standing Rock Sioux Tribe, Fort Yates, SD  
Blackfeet Tribal Council, Browning, MT  
Rosebud Sioux Tribe, Rosebud, SD  
Cheyenne River Sioux Tribe, Eagle Butte, SD  
Crow Creek Sioux Tribe, Ft. Thompson, SD  
Sisseton-Wahpeton Sioux Tribe, Sisseton, SD  
Lower Brule Sioux Tribe, Lower Brule, SD  
Yankton Sioux Tribe, Marty, SD  
Arapaho Tribal Council, Fort Washakie, WY  
Crow Tribal Council, Crow Agency, MT  
Northern Cheyenne Tribal Council, Lame Deer, MT  
Shoshone Tribal Council, Ft. Washakie, WY  
Lakota-Teton Sioux Tribe, Interior, SD  
Hunkpapa Sioux Tribe, Fort Peck, MT  
Standing Rock Sioux Tribal Council, Fort Yates, ND  
Southern Cheyenne and Arapaho Tribes, Concho, OK  
Kiowa Business Committee, Carnegie, OK

#### **American Indian Organizations**

Medicine Wheel Alliance, Huntley, MT  
Medicine Wheel Coalition for Sacred Sites, Riverton, WY

#### **Organizations, Businesses, and Educational Institutions**

The Access Fund  
Black Hills Climbers Coalition  
Colorado State University  
"Climbing" magazine  
Devils Tower KOA  
Devils Tower Natural History Association  
Devils Tower Tourism Association  
Devils Tower Trading Post  
Fort Devils Tower  
Gillette Climbing Club  
Jackson Hole Mountain Guides  
National Outdoor Leadership School  
National Parks and Conservation Association  
"Outside" magazine  
"Rock and Ice" magazine  
Sierra Club, Sheridan, WY  
Sierra Club, Rapid City, SD  
Sylvan Rocks (climbing school)  
Tower Guides (climbing school)  
Wilderness Society

#### **Climbing Management Plan Work Group**

The CMP work group, which first met in April 1993, is composed of representatives from the following interests:

The Access Fund  
Medicine Wheel Coalition  
Crook County Commissioner  
National Park Service  
Sierra Club  
Grey Eagle Society  
Gillette Climbing Club and Black Hills Climbers Coalition

Individual members of the work group are as follows:

Bob Archbold (Access Fund)  
George Sutton, Joe Williams (Medicine Wheel Coalition)  
Perry Livingston (Crook County Commissioner)  
Jim Schlinkmann (National Park Service)  
Janet Maxwell (Sierra Club)  
Royal Bull Bear, Joe Swift Bird, Elaine Quiver (Grey Eagle Society)  
Carl Coy (Gillette Climbing Club & Black Hills Climbers Coalition)

## **PLANNING TEAM**

Debbie Bird

Former Superintendent, Devils Tower National Monument

Barbara Booher

American Indian Liaison Coordinator, NPS, Rocky Mountain Regional Office

Deborah O. Liggett

Superintendent, Devils Tower National Monument

Bob Moon

Chief of Resources Management, NPS, Rocky Mountain Regional Office

Georgina A. Pearson

Natural Resource Specialist, Rocky Mountain National Park

Dave Ruppert

Ethnographer, NPS, Rocky Mountain Regional Office

George L. San Miguel

Chief of Resources Management, Devils Tower National Monument

Jim Schlinkmann

Chief Ranger, Devils Tower National Monument

Chris Turk

Environmental Compliance Program Leader, Rocky Mountain Regional Office

## APPENDICES

## APPENDIX A: CLIMBING USE PERMIT FORM

U.S. Department of Interior  
National Park Service  
Devils Tower National Monument  
CLIMBING USE PERMIT

The visitor must have this permit during the visit

Name	Route Name	Summit	Finish
Address			
City St Zip			
To Visit			
Number of People in Group			
New Route Established			
	Date/Visitor Sign		
	Date/NPS Sign		
Placement of Bolts:			
Comments:			

## APPENDIX B: ACCESS FUND POSITION STATEMENT

The Access Fund urges all climbers to recognize and to limit the impacts of their climbing practices on the environment, other climbers, land managers, and other users.

Climbing may involve the use of fixed anchors, including expansion bolts or pitons, and their use has long been recognized as legitimate. The use of fixed anchors is often needed for safe climbing. Only climbers have the knowledge needed to install, replace, or remove fixed anchors. When placing fixed anchors, climbers should limit their impact by all reasonable means. All fixed anchors should be camouflaged, in accordance with local practice, to further reduce their minimal visual impact. Climbers should refrain from placing bolts where removable protection is feasible and safe.

"*Chopping*" or removing bolts invariably results in damage to the resource and should not occur until and unless a consensus has been reached between all parties. *Chipping* or *gluing* of holds on natural rock faces causes unacceptable resource impacts.

The Access Fund believes that the key to effective management is cooperation. Discussion between climbers and land managers will result in climbing management policies based on mutual agreement. Such policies will help ensure cooperation and effective enforcement of the policy.

Climbers should cooperate with the public and private land managers to mitigate the environmental impacts of climbing. The Access Fund believes that regulation affecting any climbing practices, including fixed anchors, is acceptable only if it follows from discussions and agreement between local climbers and land managers. Alternatives to regulation, such as camouflaging fixed anchors, education and self-regulation should be fully explored before regulation. Regulation may be appropriate to protect historical, archeological or environmental resources. Furthermore, climbers must respect regulations against the use of power drills in wilderness areas or other designated areas.

The most effective manner for dealing with access issues is for climbers to get involved with the Access Fund at the local level. If you have a local climbing organization, get involved and support its efforts to promote access to climbing areas. If you do not have a local club, form one immediately and contact the Access Fund for help in getting your local organization started.

Above all, climb responsibly. Show respect not only for other climbers, but also land managers and other users. Never trespass on private land, respect all closures on public lands, and report all questionable closures to the Access Fund and to local climbing organizations.

## APPENDIX C: GLOSSARY

**Ascensionist** - see "Climber."

**Aid climbing/aid route** - refers to a method of recreational climbing performed with the aid of any number and various forms of artificial devices employed by the climber to obtain leverage in order to ascend.

**Anchor** - see "Protection."

**Approach** - refers to a hiking trail by which climbers gain access to the base of a climbing route.

**Belay or belaying** - refers to the method by which one climber secures the rope in case the other climber falls. Typically, one climber (the "belay") 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 of the pitch, he or she then belays the other climber up the route. The rope that serves as a safety line while climbing, is usually fed through a device controlled by the belayer and provides friction needed to "catch a fall."

**Bolts or Bolting** - see "Expansion Bolt."

**Butte** - an isolated hill or small mountain with steep or precipitous slopes and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion.

**Cairn** - a pillar of rocks placed by hikers or mountaineers to mark the summit of a peak or the path of a trail.

**Camming 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 protective equipment to the climber's rope.

**Chains** - see "Slings."

**Chalk** - typically consists of white magnesium carbonate this is used by gymnasts and climbers to dry sweaty hands and increase adhesion. It is pulverized and carried in a hand-sized bag carried during the climb. The residue depends on the climate, rock, and exposure to weather.

**Chipping** - see "Rock Alteration."

**Chocks or Chockstones** - Also called nuts, they are typically made of aluminum alloy in various shapes, the most common being trapezoidal, with sizes ranging from 1/16 inch to 8 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.

**Chopping** - is the removal or destruction of fixed protection, typically bolts, on a climbing route.

**Clean Climbing** - is a climbing method which uses no fixed protection to ascend a route. Only removable protection such as camming devices are used then removed by the last climber in the party. These methods do not harm the rock.

**Climber** - is a visitor who ascends an established and recognized route by means of technical ability and equipment.

**Climbing** - is defined to include rock climbing, winter and ice climbing, and mountaineering, where such climbing aids as pitons, carabineers or snap links, ropes, fixed or removable anchors, or other similar equipment are generally used to make the climb. (this is definition used in new proposed CFR 2.63 climbing regulations)

**Code of Federal Regulations - CFR** - A codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government.

**Consultation** - A legal requirement of the federal government to meet and confer with American Indian tribes on proposed management actions that might affect resources associated with traditional or religious practices of tribal members or accesses to such resources.

**Crack climbing (natural line)** - refers to climbing along the natural fractures in a rock surface by means of natural hand and foot holds and wedging fingers, hands, toes, heels, or feet into the crack to support the climber's ascent. (Also see face climbing)

**Cross-cultural education** - interpretive activities offered to the public that incorporate the themes, views, and experiences of all cultural groups that share a common resource.

**Effects (Impacts)** - Environmental changes resulting from an action. Included are direct effects, that are caused by the action and are later in time or further removed in distance, but which are still reasonably foreseeable. Indirect effects may include growth-inducing results and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

**Endangered species** - Any animal or plant species that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act.

**Environmental assessment** - see "National Environmental Policy Act of 1969."

**Ethnographic resources** - Any natural or cultural resource, landscape, or natural feature that is linked to the traditional cultural practices, values, beliefs, history, or ethnic identity of a cultural group.

**Expansion bolts** - are 2 to 4-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 ("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.

**Eyes** - are holes at the ends of bolts capable of accommodating a carabiner.

**Face route/face climbing** - refers to climbing by use of natural hand and foot holds out on the smooth, exposed rock surface between the natural fractures in the rock. (also see Crack Climbing)

**Fixed protection or fixed anchor** - is permanently placed protection, typically a bolt or a piton intended to be permanently placed. Fixed protection is usually applied when no "clean" opportunities area available.

**Free climbing/free route** - 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.

**Friends** - see "Camming Devices."

**Gluing** - see "Rock Alteration."

**Hanger** - is an L-shaped piece of metal that is attached to a bolt and 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 a bolt.

**Hardware** - climbing equipment placed in cracks or on faces to protect climbers and including chocks, nuts, friends, pitons, and bolts.

**Hiker/climber** - a non-technical climber who scrambles around boulder fields. This also refers to the casual family visitor who is not attempting to perform "technical rock climbing" activities.

**Holds** - are ledges, cracks, depressions, or protrusions on the rock surface that are used to support a climber's weight when grasped by a hand or stepped onto by a foot.

**Impact** - see "Effects."

**Leading** - refers to the act of a lead climber ascending a route, placing protection as he or she ascends while being belayed from below by a second climber. The term is used to distinguish between a climber ascending a route while being belayed from below. Lead climbers "get the rope up." When properly belayed, leading involves relatively little risk.

**List of Classified Structures** - The LCS is an inventory of prehistoric and historic structures evaluated by National Register criteria. NPS structures on the LCS are typically eligible for the National Register of Historic Places.

**Mitigation** - includes: (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and, (e) compensation for the impact by replacing or providing substitute resources or environments.

**National Environmental Policy Act of 1969** - NEPA requires all federal agencies to consult with each other and to employ systematic and interdisciplinary techniques in planning. All actions significantly affecting the quality of the human environment require a detailed statement on the environmental impact, adverse environmental effects, and alternatives. Also established the Council on Environmental Quality. Environmental assessments and environmental impact statements are written by Federal agencies to comply with NEPA.



**National Register of Historic Places** - was established as part of the National Historic Preservation Act of 1966. The National Register documents the appearance and importance of districts, sites, buildings, structures, and objects significant in America's prehistory and history. Devils Tower is eligible for the National Register as a traditional cultural property (natural feature having cultural significance and as a ceremonial site).

**Natural Lines** - see "Crack Climbing."

**Noxious weed** - Noxious weeds are disruptive plants that are considered detrimental, destructive, injurious, or poisonous to humans, native flora, or native fauna. Noxious weeds are non-native to the State of Wyoming. These non-native plants occur at a given place as a result of direct or indirect, deliberate, or accidental actions by humans. Canada thistle and leafy spurge are local examples of noxious weeds.

**Nuts** - see "Chocks."

**Pitch** - The distance a lead climber ascends before he or she stops to belay the second climber's ascent. The distance of a pitch is limited by the length of rope used by the climbers 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 that a climber places in or on the rock for safety or to descend. The term includes multi-bolt anchor, camming devices, pitons, hangers, and bolts. Includes "clean" or removable types and permanent types of protection. "Natural" protection is offered by the natural attributes of the rock.

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

**Raptors** - Predatory birds, such as falcons, hawks, eagles, and owls.

**Recreational opportunity** - The availability of choices for users to participate in the recreational activities they prefer within the settings they prefer.

**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 glue, removing loose rocks or vegetation, or creating new holds with hammers, chisels, or drills.

**Rosin** - is an organic (derived from pine tree pitch) sticky substance applied to the hands by athletes, including rock climbers, to improve their grip.

**Route** - is the generally vertical path on the rock face that 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.

**Sacred Site** - as referenced in the CMP, a sacred site is a place with traditional cultural values and spiritual significance for American Indians. Also see "National Register of Historic Places."

**Scoping** - A part of the NEPA process; early and open activities used to determine the extent and significance of the issues, and the range of actions, alternatives, and impacts to be considered in an environmental assessment or environmental impact statement.

**Slings** - are knotted loops of nylon webbing that are occasionally 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, last longer than rope, and are less visible than rope.

**Social Trails** - Unauthorized foot paths established over time by repeated travel over previously undisturbed ground.

**Software** - refers to slings or rope that attach to climbing hardware.

**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 diminishes or the character of the rock changes.

**Sun Dance** - Many American Indians of the Northern Plains performed and still perform such renewal of life ceremonies. Some tribes traditionally performed these Sun Dances at the tower and other sacred sites. The ceremony is often performed in the month of June and requires several days to perform.

**Technical climb** - 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) such as with hiker/climbers. Also see "Free climbing" and "Crack climbing."

**Threatened species** - Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future. (See also endangered species).

**Traditional Cultural Practice** - see "Ethnographic Resources."

**Traditional Cultural Property** - is a property or place that is eligible for inclusion on the National Register of Historic Places because of its association with cultural practices and beliefs that are 1) rooted in the history of a community and 2) are important to maintaining that community's traditional beliefs and practices.

**Webbing** - often brightly colored nylon rope used by rock climbers.

**Wetland** - lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface.

#### APPENDIX D: CLIMBER'S BOLTING APPLICATION AND PERMIT

##### CLIMBER'S BOLTING APPLICATION & PERMIT DEVILS TOWER NATIONAL MONUMENT

**(5/25/94) A MESSAGE FROM THE SUPERINTENDENT:** A Climbing Management Plan for Devils Tower will be implemented in 1995. In the interim, I am implementing a permit system to monitor bolting activities and help protect this unique geologic resource. There are currently more than 600 bolts installed on the Tower and I'd like to minimize the number of new bolts. Face routes generally require more bolts than crack routes. Consequently, new bolting on face routes is prohibited, and new bolting on crack routes and belay/rappel stations will still be allowed. Thanks for helping us preserve this superb crack climbing area and reduce the proliferation of bolts on the Tower.

**LEGAL AUTHORITY:** Pursuant to the 1994 Compendium of Superintendent's Orders, under the provisions of Title 36, Code of Federal Regulations 1.7 (b) and 2.1 (a)(5), the installation of climbing bolts on the Tower requires a permit issued by the superintendent or his/her designee.

**PERMIT CONDITIONS AND RESTRICTIONS:**

1. Bolts may not be installed on new or existing face routes. "Face routes" are defined as routes that primarily follow a face or arete, rather than one or several cracks, and are protected primarily from bolts.
2. Bolts may be installed at belay and rappel stations as needed. To reduce visual impacts, belay and rappel station bolts should be connected with chain rather than nylon webbing or rope.
3. Bolts may be installed on crack routes where no other protection is available. "Crack routes" are routes that primarily follow one or several cracks, and are protected by placing climbing hardware in a crack.
4. Replacement of existing bolts is allowed. We encourage using the same bolt hole and painting your hangers at home, not on the rock.
5. Permittee must check in after installing bolts, and report activities as required on this permit.

(continued on next page)

I AGREE TO THE CONDITIONS AND RESTRICTIONS OF THIS PERMIT		
SIGNATURE:	DATE:	
NAME: (please print)		
ADDRESS:		
PHONE NUMBER: home:	work:	
COMPLETE THIS INFORMATION AFTER YOUR CLIMB		
HOW MANY BOLTS DID YOU INSTALL?	SIZE?	TYPE?
WHERE DID YOU INSTALL THE BOLTS? (pitch, route, etc., be specific)		
COMMENTS?		

This permit issued by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

APPENDIX E: THE PLANNING AND PUBLIC INVOLVEMENT PROCESS

TASK	RESPONSIBLE	STARTING DATE	COMPLETION DATE
Contact interested parties	NPS-DETO	10/92	12/92
Assemble work group	NPS-DETO	12/92	3/93
Publish Notice of Intent	NPS-DETO	10/92	12/92
Identify issues and conduct scoping in work group meetings	NPS-DETO	4/93	4/94
Newsletter and Press Release	NPS-DETO	7/93	7/93
Develop task directive	NPS-DETO, Pearson	2/94	2/94
Review task directive	NPS-DETO, RMR	2/94	3/94
Finalize task directive	NPS-DETO, Pearson	3/94	3/94
Newsletter-CMP Update	NPS	3/94	3/94
Write draft CMP/EA	Pearson	2/94	3/94
Complete draft CMP/EA	NPS-DETO	3/94	4/94
Work group reviews draft CMP/EA in Denver	NPS-DETO, RMR, work group	4/94	4/94
NPS-DETO staff edits draft	NPS-DETO	4/94	6/94
RMR reviews draft	RMR	6/94	7/94
Analyze comments - complete draft	NPS-DETO	7/94	7/94
Print draft CMP/EA and mail to interested parties	NPS-DETO	7/94	7/94
90-day public review and public meetings	NPS-DETO, RMR, work group	7/94	10/94
§ 106 Review, NHPA	SHPO	7/94	10/94
§ 7 Review, ESA	U.S. Fish & Wildlife Service	7/94	10/94
Analyze comments and complete final CMP if notably different from draft	NPS-DETO	10/94	12/94
Write FONSI or NOI and distribute	NPS-DETO	12/94	12/94
Print final CMP if final plan is needed	NPS-DETO	12/94	2/95
Implement Climbing Management Plan	NPS-DETO	3/95	ongoing

Abbreviations used in table

NPS-DETO:	National Park Service, Devils Tower
RMR:	National Park Service, Rocky Mountain Regional Office
Pearson:	Georgina Pearson
CMP/EA:	Climbing Management Plan and Environmental Assessment
SHPO:	State Historic Preservation Office, Wyoming
FONSI:	Finding of no significant impact
NOI:	Notice of intent
ESA:	Endangered Species Act
NHPA:	National Historic Preservation Act

## **APPENDIX E (Continued): THE PLANNING AND PUBLIC INVOLVEMENT PROCESS**

In October of 1992, Devils Tower notified groups that would be interested in the monument's development of a climbing management plan. Devils Tower approached different organizations that collectively represent a broad range of interests. The monument invited organizations to participate on a special work group and let each organization pick their individual work group members. Three of the work group meetings were held in Denver, Colorado in May and August, 1993 and April, 1994. The other two were held in the local communities of Hulett, Wyoming in April, 1993 and Gillette, Wyoming in October, 1993. The work group discussed issues and developed recommended alternatives for the plan. Limited scoping with the general public has been done via press releases and a newsletter sent to interested parties. During two of the meetings, the public was able to express opinions and ask questions.

Even before the release of the draft Climbing Management Plan and Environmental Assessment (CMP/EA), hundreds of letters were received at Devils Tower National Monument. Each writer was placed on the CMP mailing list, as were the many citizens who expressed interest in person and by telephone. These comments were not based on the draft CMP/EA. Nonetheless, the monument has read, analyzed, and organized the comments into a summary.

All parties on the monument's CMP mailing list, including those listed under "Consultation and Coordination," will receive a copy of the draft CMP/EA. At printing time, the number of addresses on the CMP mailing list reached approximately 700. Anyone may ask for a copy of the plan during the public comment period. Those receiving the draft CMP/EA have 90 days to comment from the date the document is released. The comment deadline is October 31, 1994. Comments should be as substantive as possible. The NPS will respond in writing to every comment and will publish its responses with the final CMP and record of decision.

During the 90-day public comment period, several public meetings will be offered in the local and regional area. The monument's staff will offer information, answer questions, and listen to comments from those attending.