

**ARCHEOLOGICAL
ASSESSMENT**

Mount Rushmore National Memorial

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MOUNT RUSHMORE NATIONAL MEMORIAL
1973

by

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INTRODUCTION

When Mount Rushmore National Memorial was authorized in 1925, approximately 1280 acres of Black Hills forest land were set aside to "commemorate the achievements of the four Presidents. . ." (53 STAT. 434). Artist Gutzon Borglum then spent fourteen years creating a work he felt worthy of "reminding Americans of this country's achievements of the past, and hope a democratic society offers for the future" (National Park Service n.d. b: 1). His prominent sculptures, however, make up a very small portion of Memorial Lands; the remaining area is primarily covered by dense Ponderosa Pine forest, crossed by rugged canyons, and dotted with stark, jagged granite outcrops.

Visitor access to the sculptures and headquarters area is by State Highway 87, the Borglum Memorial Highway, which meanders from the Memorial's eastern border to the northwestern corner (Fig. 1). The visitor area consists of a 500-car parking lot; visitor center and administrative offices; a concessionaire's restaurant, gift shop and dormitory for summer employees; amphitheater; viewing terrace; and maintenance buildings. Other structures within the Memorial include water storage and sewage facilities as well as residences for permanent National Park Service employees.

This geographically small National Park Service area receives approximately two million visitors annually. Due to management requirements and resultant thrust of the interpretive program, the Memorial's beautiful natural resources are not readily available for public

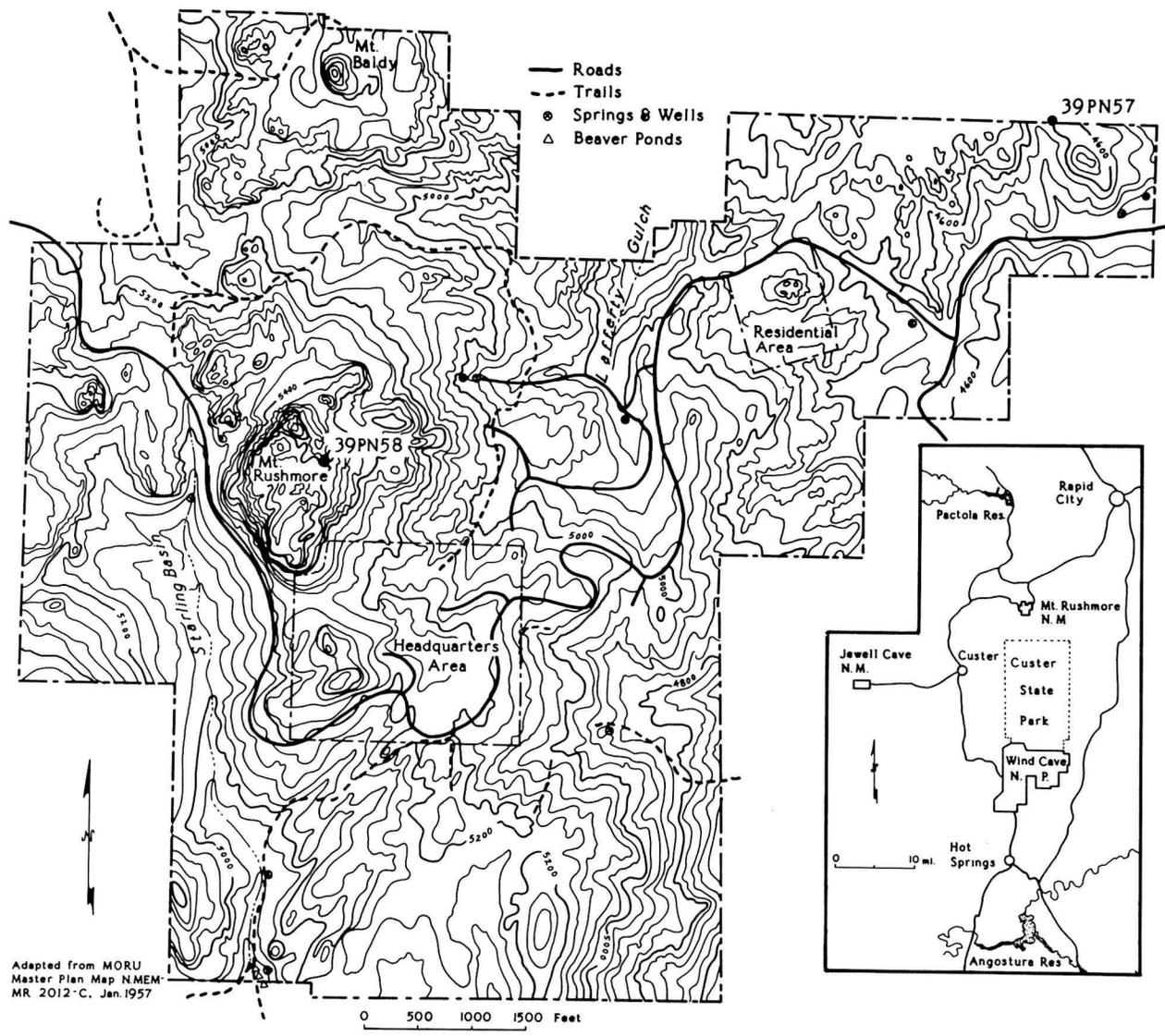


Fig. 1. Location and contour maps of Mount Rushmore National Memorial.

enjoyment. The area's Natural Resource Management Objective is "to manage the geologic features, the vegetation, and the wildlife to retain a natural environment to enhance the sculpture and provide pleasing surroundings for the visitor..." (National Park Service 1970).

The Memorial has received a detailed geologic study (Powell, Norton, and Adolphson 1973) and assessment of ground water potential (Gries 1960; Powell, Norton, and Adolphson 1973). A check-list of birds observed on the Memorial (Appendix A) and herbarium for the region (Appendix B) are also available.

Consideration of the Memorial's cultural resources has been minimal. Some of the tools and other equipment used during carving of the sculptures are preserved and displayed for public enjoyment. However, the Memorial's archeological potential has never been explored. Other than the general story that the Black Hills, *Paha Sapa* (Brown 1970: 277) or *Hè Sápa* (Howard 1972: 302), were sacred to various historic Indian groups, aboriginal culture has not been considered at Mount Rushmore National Memorial.

In 1938 the Memorial became a Park Service historic area. After the National Historic Preservation Act of 1966, it was listed on the National Register of Historic Places.

Anticipatory to America's bicentennial celebration, Mount Rushmore was slated for special development. Improvements were to center on expansion of the transportation system. Construction of two staging areas (parking lots) outside the Memorial and development of mass-transit facilities to area headquarters were planned. Visitor use of the area is already at capacity, and bicentennial celebration is

expected to augment current tourism. As a result, park planners believed that some means of coping with increased visitation was essential.

In conjunction with proposed construction plans, archeological survey of all areas subject to disturbance outside the Memorial was programmed. Cultural resource inventory and evaluation was also planned for Memorial lands. Because Mount Rushmore is listed on the National Register of Historic Places the effects of all proposed improvements on the area's cultural resources must be assessed (1966 National Historic Preservation Act).

However, just before the archeological survey began, Mount Rushmore was deleted as a bicentennial area and plans for development outside the Memorial were dropped. Therefore, the site survey and cultural resource evaluation were restricted to lands within the Memorial.

PHYSICAL ENVIRONMENT AND AVAILABLE RESOURCES

The Black Hills

Mount Rushmore National Memorial is located within the Black Hills, an isolated mountain mass lying north of the High Plains on the Missouri Plateau. Fenneman (1931: 8) designates this region as the Black Hills Section within the Great Plains physiographic province.

The Hills are the result of widespread regional uplift which began some 60 million years ago. This upheaval, which also created the Rocky and Bighorn Mountains to the west, affected an area approximately 120

miles long and 60 miles wide in South Dakota. Some of the exposed rock formations are among the oldest on earth, dating more than two billion years ago to the Older Precambrian. The western half of the Black Hills is a gently sloping surface of sedimentary formations with little relief. The eastern half is highly eroded, exposing a rugged area with peaks up to 7000 feet high. Between the Mountain ridges are large basins or parklands of lesser relief (Hughes 1949: 267, Mulloy 1958: 15, National Park Service 1968: 2-3).

From the topographic, and hence climatic, floral, and faunal standpoints, the mountains present startling contrasts to the surrounding territory. These differences, however, add to the variety of abundant vegetable, animal, and mineral resources available to aboriginal inhabitants of the region.

The Black Hills receive 6-8 inches more precipitation than the surrounding plains (United States Weather Bureau 1966-1972). As a result spring-fed lakes and streams are numerous. The coniferous and deciduous trees that flourish provide ready timber for campfires, shelters, and other purposes. Food plants, such as chokecherry, gooseberry, squawberry, buffaloberry, currant, wild rose, plum, and grape grow along the moist drainages of the plains and at all except the highest elevations within the mountains. Early ripening of these plants at low elevations and late ripening at higher levels results in a long gathering season for nomadic groups of the area. At one time the mountains teemed with large animals such as bighorn sheep, bear, and Woodland bison. Elk, antelope, deer, small game animals, and wild fowl are still plentiful. Also important archeologically are mineral resources,

such as extensive deposits of quartzite, gypsum, mica, onyx, and other materials of use to aboriginal groups (Hughes 1949: 267, Wedel 1961: 160, 275). River gravels in the lower drainages are a convenient source of material for stone tools.

Mount Rushmore National Memorial

Geology and Topography

The Memorial itself is located in the heart of the Black Hills, on their rugged eastern face. It contains two prominent mountain peaks, Old Baldy Mountain and Mount Rushmore (Fig. 1, Plate 1). The resistant nature of the granitic and metamorphic rocks (quartzite and mica schist) of the Memorial has produced a region of sharp valleys, jagged outcrops, and steep slopes (Plates 1 and 2). Elevations within the Memorial range from 4420 feet at the Keystone entrance to 5725 feet on Mount Rushmore. Starling Basin on the southwest side of the Memorial and Lafferty Gulch, which heads in the north central part of the area, are its two major drainages.

There are no usable materials for chipped stone tool manufacture on Mount Rushmore. The available granite, schist, and quartzite rocks could be used as hammers, mortars, pestles, mauls, etc. However, quality knapping materials are lacking.

Water Resources

Mount Rushmore lies in the core of the Black Hills where the normally water-bearing sedimentary rocks have been removed by erosion. It is high in the Cheyenne River drainage, on the divide between Grizzly

Bear and Battle Creeks, both outside the Memorial. Due to the lack of water-bearing strata, a continuous ground-water supply is available only in the Quaternary alluvial deposits of Starling Basin and Lafferty Gulch (Gries 1960).

Generally, however, running streams and seeps within the Memorial provide readily available water. The 19-inch average annual precipitation (United States Weather Bureau 1966-1972) seasonally recharges the alluvial water supply. The latter is considered the most reliable source of water on Memorial lands (Gries 1960: 2). Several springs are located in these alluvial areas and successful test wells have been sunk into the deposits (Fig. 1).

For the past twenty-one years the National Park Service has maintained an official weather station at Memorial headquarters. The average yearly temperature falls between 40 and 48 degrees Fahrenheit. However, it ranges between 98 degrees in the summer to a -25 degrees during the coldest part of the year (United States Weather Bureau 1966-1972).

The four most reliable natural water sources in the Memorial are streams in Lafferty Gulch and Starling Basin, Rushmore Spring (at the head of Lafferty Gulch), and an active seep east of the parking lot. Nearby Battle and Grizzly Bear Creeks are permanent streams. Beaver dams in Starling Basin (Plate 3b) suggest that, at least recently, there has been enough available water in this region to support a small population of beaver. Water was probably not a problem for aboriginal occupants of the Memorial during historic times.

Floral Resources

With the exception of the massive, granite outcrops, all Memorial land is forested. Ponderosa Pine is the dominant species at the Memorial and throughout the Black Hills (Plates 2 and 4). Aspen, cottonwood, white birch, Burr oak, and juniper are the principal subdominant trees (Plate 3a). There are also scattered clusters of spruce in Starling Basin and Lafferty Gulch. Chokecherry, pin cherry, kinnikinnick (bearberry), and hazel bush are the most common understory cover.

Topography and exposure are key factors in vegetation location. On the north and northeast-facing slopes, growth is extremely dense and it is often difficult to walk through the area. This is especially true in Starling Basin, the pass between Mount Rushmore and Old Baldy Mountain, and Lafferty Gulch (Plate 3a).

The more open areas south of the parking lot, around Old Baldy Mountain, and in the northeast portion of the Memorial support a variety of grasses, forbs, and sedges. These are also common along the streams (Plate 3b).

Plant resources of the area, while somewhat limited, include a variety of usable species (Table 1). It is impossible to determine exactly what was utilized by Indian visitors, but a knowledge of what was and was not available can be helpful in understanding aboriginal activity. The Memorial's herbarium (Appendix B) contains a large number of species collected from the Mount Rushmore area.

TABLE 1. FLORAL RESOURCES OF MOUNT RUSHMORE NATIONAL MEMORIAL*

	Medicinal	Edible root, flower, tuber, bark, bulb, stem, leaf	Pot herb	Edible fruit, seed	Beverage	Other: charms, utensils, smoking, construction, etc.
Yarrow	X					
Wild licorice		X				
Horsemint	X				X	
Wood lily	X	X				
Rose				X		
Goldenrod	X		X		X	
Wild strawberry	X			X		
Bedstraw	X			X		
Mariposa lily		X				
Red clover		X		X	X	
Clover		X		X	X	
Verbena	X	X		X		
Red elderberry	X					
Coneflower	X				X	
Stoncrop		X	X			
Blue thistle		X				
White sage	X			X	X	X
Blazing star	X					
Rough cinquefoil	X	X				
Tall goldenrod	X		X		X	
Red raspberry				X		
Still goldenrod	X		X		X	
Chokecherry	X			X	X	
Paper birch						X
Peach leaf willow		X				
Long leaf willow		X				X
Burr oak	X			X		X
Nodding onion		X				
Ponderosa pine		X--sugar from cambium and seeds				X
Common juniper	X			X	X	X
Shooting star		X				
Blue violet		X				
Yellow violet		X				
Pasque flower	X					
Alfalfa				X	X	
Blue wood sorrel		X				
White paint brush		X				
Creamy vetchling	X	X		X		X
Buckwheat		X				
Alumroot	X					
Spruce		X--sugar from cambium				X
Honeysuckle				X		
Iris	X					
Yellow oxalis		X				
Blue sweet pea		X				
Penstemon	X					
Dandelion	X	X	X			
Cow parsnip	X	X	X			X
Starwort	X		X		X	X
Fetid marigold	X					
Dock			X			
Dog fennel		X		X		
Fragrant bedstraw				X		X
Cinquefoil	X	X				
Mint	X	X			X	
White aster		X				
Woundwort	X	X				
Plantain	X	X	X	X		
Winged pigweed				X		
Goosefoot pigweed	X	X		X		X
Quaking aspen	X	X				X
Kinnikinic	X					X
Pearly everlasting	X					

*(Kirk 1970, Cutler 1966, Gilmore 1919)

Faunal Resources

The fauna of Mount Rushmore has never received adequate study. Animals observed during archeological survey work include porcupine, White-Tail deer, beaver, Red squirrel, trout, Least chipmunk, cotton-tail rabbit, mice, Rocky Mountain goat, and a variety of birds (Appendix A). It is interesting to note that the Rocky Mountain goat was introduced into the Black Hills in 1943 (Camp 1951: 70), and therefore not an available resource to aboriginal occupants of the region. Mulloy (1958: 19) reports that Black Hills Mountain sheep were once plentiful in areas over 5000', which includes Memorial lands. It is also reasonable to expect that grizzly and black bears, muskrat, racoon, skunk, weasel, mountain lion, fox, bobcat, coyote, wolf, and mink would have been occasional users of the Memorial in the past.

CULTURE HISTORY OF THE BLACK HILLS

Archeological Work

Curiously enough, the Black Hills have received little systematic archeological study even though their probable importance to Plains culture history has long been recognized (Hughes 1949: 268). The Keyhole and Angostura Reservoir areas adjacent to the mountains were studied in conjunction with Bureau of Reclamation flood control projects (Hughes 1949; Mulloy 1954, 1958). This work resulted in the only detailed reporting of archeological materials in the immediate vicinity of the Black Hills.

As part of a comprehensive survey of the western high plains, E. B. Renaud (1936b) conducted a hasty reconnaissance of the southern Black Hills. His report describes in summary form several sites and artifacts but gives no analysis, comparison, or interpretation of the materials. Renaud (1936a), Buker (1937), and Over (1941) report numerous petroglyph sites in the southern Hills. Wedel (1947) and Wood (1971) contribute detailed descriptions of pottery from the northwestern and northern part of the area. Various writers (Champe 1946: 62-65, Schultz and Stout 1954: 244) discuss nearby remains in the White River terraces in northwestern Nebraska.

This limited work, when combined with the historic record, suggests a long sequence of nomadic occupation in and around the Black Hills. However, it contributes little concrete information of specific aboriginal utilization of the mountains themselves. Sudderth's (1964) more recent survey of Wind Cave National Park in the southern Black Hills (Fig. 1) adds little substantive evidence to the previously known hunting and gathering lifeway characterizing the region.

Based on research in the northwestern plains, Mulloy (1958: 204-232) has proposed a chronological sequence for a large area which includes the Black Hills. Five general cultural periods are hypothesized: (1) Early Prehistoric Period, (2) Early Middle Prehistoric Period, (3) Late Middle Prehistoric Period, (4) Late Prehistoric Period, and (5) Historic Period. Materials from all stages are represented in sites near the Black Hills. However, few remains are known from the mountains themselves, particularly the high forested hills of Mount Rushmore National Memorial.

Prehistoric Occupation of the Black Hills

The Early Prehistoric Period is characterized by big game hunting and a complementary tool kit for killing and processing. Hughes (1949) reports Early Period remains from the Long Site in the Angostura Reservoir southeast of the hills (Fig. 2). Sudderth (1964: 26) notes Angostura-like projectiles as well as other early lanceolate points from the Wind Cave area. Early sites, dating prior to 8000 years ago, have also been found to the south and west of the Black Hills (Agogino and Frankforter 1960; Agogino and Galloway 1965; Irwin-Williams, Irwin, and Haynes 1973; Roberts 1962). Unfortunately, no specific sites from this period have been reported from the Black Hills proper, although local collectors claim to have found Folsom and other early dating projectiles in the high mountain parklands.

The Middle Prehistoric Period is marked by increasingly warm temperatures and concomitant shift in available food resources on the Plains (Mulloy 1958: 209). The large game animals, on which the early hunters depended, diminished as the lush plains grasslands were gradually replaced by steppe. A greater dependence on gathering wild plant remains and small game hunting characterizes the Middle Period. The McKean Site in Keyhole Reservoir (Mulloy 1954), and Gant, Glendo, and Kolterman Sites (Fig. 2) typify Middle Period occupation near the Black Hills (Hurt 1961, Newman 1967: 474-477). Sudderth (1964: 64) places a variety of points from the Wind Cave area in this period. Woodland pottery from the Angostura and Keyhole Reservoirs and other small sites suggest sporadic use of the Black Hills region by Late Middle Prehistoric Period village groups living further east (Wedel

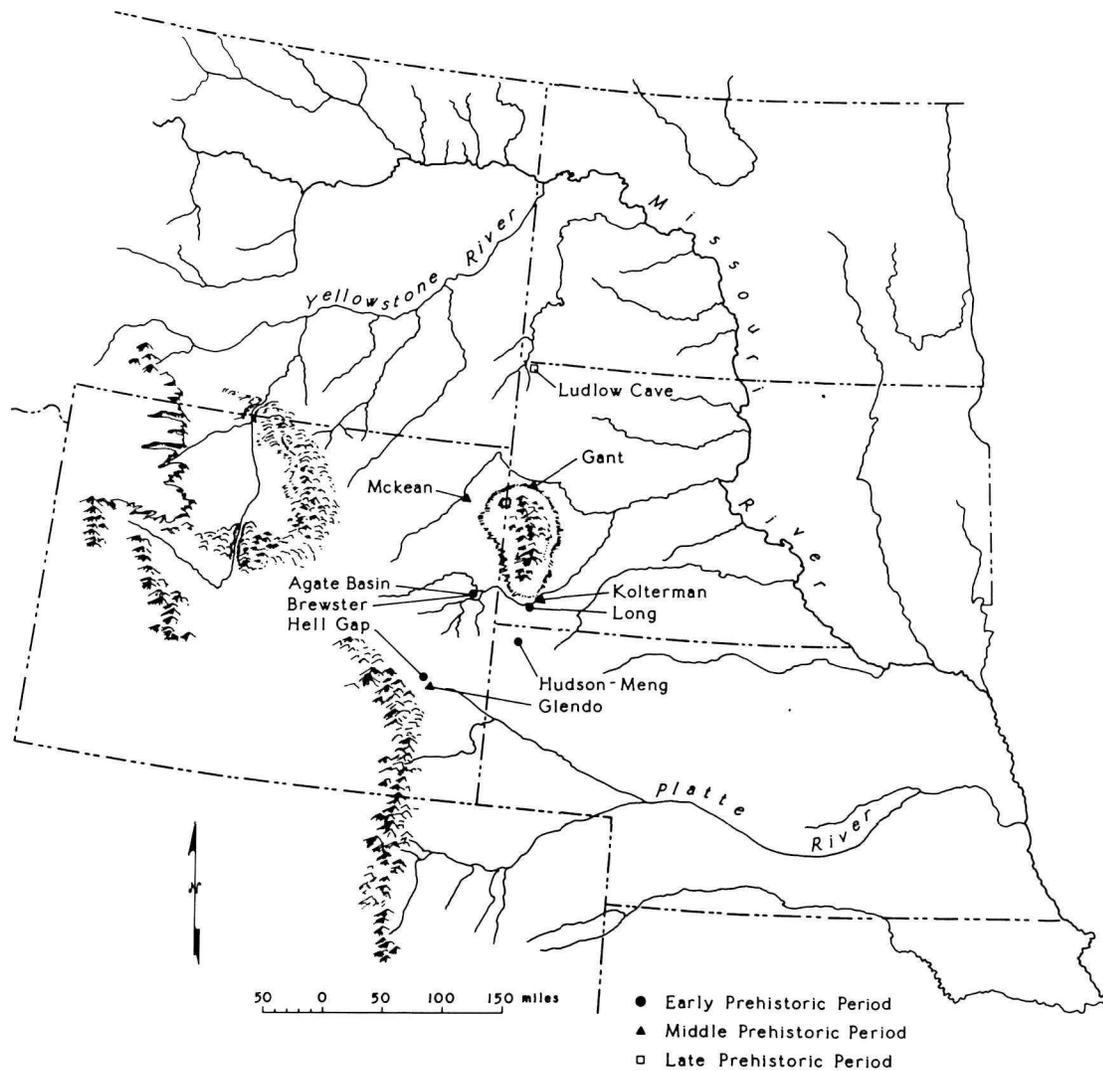


Fig. 2. Northwestern Plains and Missouri Plateau. Map indicates selective topographic features and archeological sites around the Black Hills in western South Dakota.

1961: 256-257, 1947). Gunnerson (1968: 167) reports baking pits similar to those of the Southern Athabascan Dismal River aspect in the Angostura Reservoir area and around Glendo, Wyoming. Again, no specific archeological sites dating from this time are known from Mount Rushmore National Memorial.

The Late Prehistoric and Historic Periods in the northwestern plains are marked by a return emphasis to the hunting of big game, particularly bison. Ludlow Cave (Fig. 2) in northwestern South Dakota is an excellent example of stratified Late Prehistoric and Historic Period materials (Over 1936). It may well have been frequently used as a hunting camp for parties from the Middle Missouri villages (Mulloy 1968: 195-196). A variety of remains that appear to represent hunting camps of these Middle Missouri semi-sedentary horticulturalists are scattered over the northwest plains (Wedel 1961: 190, 256-257). This suggests that these aboriginal groups sometimes hunted, traded, or traveled for other reasons in and around the Black Hills.

Historic Occupation of the Black Hills

It is difficult to draw the line archeologically between historic and prehistoric occupation in the Black Hills region. The presence or absence of European goods is the most reliable criteria (Mulloy 1958: 213) because basic aboriginal lifeway and material culture changed very little until well into contact times. In this respect written accounts are indispensable for elucidating specific aspects of late aboriginal activity in the area.

The region around the Black Hills is known historically to have been alternately occupied by the Kiowa, Blackfeet, Crow, Cheyenne, Dakota (Sioux), and Arapaho (Denig 1961: 3, Howard 1972: 302, McGee 1897: 190, Mooney 1896: 1024-1025, Wedel 1961: 79), and characterized by a horse-bison hunting economy. La Verendrye's exploration party up the Missouri in 1742-1743 reported Crow, Arapaho, Kiowa, Cheyenne, and Dakota at the base of the Black Hills (Schlesier 1972: 118). This party probably was the first group of white men to see the mountains (National Park Service n.d. a: 1). After the 1803 Louisiana Purchase, when all lands between the Mississippi and the Rocky Mountains were ceded to the United States, countless trappers, traders, and adventurers pushed westward; trading posts were established along the Missouri and as far west as the Black Hills.

While the fur trade was at its peak the Black Hills were trapped and explored to some extent, but the dangers of Indian attack kept all but the most adventuresome away. Because *Paha Sapa*, the mountains, were considered sacred by the Dakota and the center of their land (Brown 1970: 276, Denig 1961: 5-7), wary trappers generally avoided them, leaving the Hills to lightning and thunder, the *Wakinyan* gods (Dorsey 1894: 441-442).

Bear Butte at the northeast edge of the Hills was a favorite place of worship to *Tunkan* or *Inwan*, the stone god (Dorsey 1894: 448-449). After prayer, small stones were frequently placed between the branches of the pine trees that grow at the top of the butte. Some trees had as many as seven stones apiece (Dorsey 1894: 44).

By 1825 the Teton Dakota were probably as far west as the Black Hills (Howard 1972: 288). Mooney (1898: 140-141) shows them firmly established in the area by 1832. McGee (1897) reports that the Teton actually took possession of the mountain region long before the white man came. Previously, the Black Hills were held by the Crow (McGee 1897: 190). However, the Yankton Dakota living further east, indicate that their ancestors visited the Black Hills to hunt and obtain tipi poles at a time when the Kiowa inhabited the area (Howard 1972: 302, Mooney 1898: 157). This would have been sometime before the middle 1700's when the Kiowa were gradually driven south (Howard 1972: 302; Mooney 1896: 1079, 1898: 157; Schlesier 1972: 118-119). Ewers (1937: 80) notes that the Teton winter count fixes their entrance into the Black Hills at 1765.

The Teton Dakota were first observed by Lewis and Clarke along the Missouri south of the Cheyenne River. By the middle 1800's the Ogalala, a principal division of the Teton, hunted and roamed over the vast region between the North Platte River and the Black Hills (Bushnell 1922: 63, Denig 1961: 19-20). The mountains were visited often by groups of Ogalalas in quest of tipi poles, but no permanent settlements were established there (Bushnell 1922: 70).

Colonel R. I. Dodge, a participant in an 1875 expedition to the Hills, wrote, "My opinion is, that the Black Hills have never been a permanent home for any Indian. Even now small parties go a little way into the Hills to cut spruce lodge-poles, but all the signs indicate these are mere sojourns of the most temporary character" (Bushnell 1922: 71). Bushnell summarizes, "Although there may never have been any large permanent camps within the Black Hills district. . .it is quite evident

that the region was frequented and traversed by bands of Indians. . ." (1922: 71). He cites Newton and Jenney's 1880 geological report on the Black Hills.

"The snow must be sometimes deep enough to hide trails and landmarks, as the main Indian trails leading through the Hills were marked by stones placed in the forks of the trees or by one or more sets of blazes. . .The small slender spruce-trees are much sought after by the Indians, who visit the Hills in the spring for the purpose of procuring them for lodge-poles" (Bushnell 1922: 71).

It is possible that the stones in the trees referred to by Newton and Jenney are actually the result of worship to *Tunkan*. Other areas of the Black Hills besides Bear Butte may have been used for stone worship.

When the 1868 Fort Laramie treaty failed to halt Indian and Anglo discord, the need for a military post within the mountains was decreed. In 1874 Lt. Col. George A. Custer led an Army expedition into the Black Hills in search of a suitable location. For unexplained reasons a geologist and several miners were included in the party. The latter occupied themselves with the search for gold, and near the present city of Custer, were rewarded. Because of the 1868 treaty agreement with the Dakota, the Federal Government ordered that all gold seekers were to be kept out of the Black Hills; however, efforts to halt the miners failed entirely.

The Government, therefore, attempted to bargain for either the purchase of the Black Hills or sale of mineral rights. But the Dakota had strong feelings about their last free hunting grounds, the center of their universe, and negotiations collapsed (Brown 1970: 276, 298-300; Mooney 1896: 825). Treaty terms were then unilaterally decided by the Federal Government and sacred *Paha Sapa* was lost to the Dakota. By 1876

an estimated 10,000 people had poured into the mountains. That same year Custer was defeated at the Battle of the Little Bighorn, and for the next fourteen years the Dakota fought to maintain their independence and freedom.

Gradually the Indians were broken by constant warfare, illness, and extermination of the bison. The Ogalala held their last great Sun Dance in 1881-1882. From then on the ceremony was held "in the Hills," the sacred area, to avoid government censure (Lewis 1972: 44). In their distress, the Indians turned to God for salvation and adopted a new religion epitomized by the Ghost Dance. If the ceremony was faithfully performed all white intruders would be vanquished from the earth, and Indians wearing the ghost shirt would not be harmed by white bullets. However, in 1890 the bloody massacre at Wounded Knee tragically brought an end to this new cult. It also signaled the demise of Indian reign over South Dakota and the Black Hills.

As the mining boom developed, freight line, railroad, and lumbering operations grew. Many Black Hills towns began promoting themselves as vacation spots (National Park Service n.d. a: 3). In 1927 President Calvin Coolidge spent three months in the mountains and on August 10 dedicated Mount Rushmore National Memorial. This was to become the finest tourist attraction in the state. During 1973 more than 2,053,700 people visited the Memorial.

ARCHEOLOGICAL SURVEY OF MOUNT RUSHMORE NATIONAL MEMORIAL

Purpose and Procedures

Archeological evaluation of Mount Rushmore was conducted pursuant to Executive Order 11593 and the National Park Service Resources Basic Inventory program. Work, carried out during September, 1973, was specifically geared towards location and assessment of all cultural remains within the Memorial. An important goal of the project was to recover evidence of aboriginal activity that would demonstrate the historically known uses of the Black Hills. Late Prehistoric or Historic Period aboriginal sites on Mount Rushmore National Memorial could conceivably be used to substantiate current Indian ownership claims.

All Memorial lands were surveyed. Special attention was given to the area around Mount Rushmore itself and locations even tentatively considered for development--such as the more-or-less level terrain south of the parking lot and along the northeast border (Fig. 1). All wells, springs, and seeps were thoroughly investigated for cultural remains.

To facilitate work in the rugged terrain of the Memorial the area was surveyed by natural topographic units: drainages, ridges, and mountain sides. Because of the steepness, contour levels were followed as much as possible, starting with the highest point in an area and working downward. All trails, roads, springs, wells, beaver ponds, and archeological sites were marked on the 1957 Master Plan map of the area (Fig. 1).

Survey Results

Archeological coverage of Mount Rushmore revealed two recent sites, 39PN57 and 39PN58 (Appendix C). The former is the remains of a pine, aspen, and birch log structure located ten to fifteen feet north of and outside Memorial lands (T2S R6W S8 SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$). This temporary shelter was constructed by logs simply being laid across two granite boulders to form a roof (Plate 5). Several of the logs had ax-cut ends, although the majority appeared to have been simply utilized as found without modification. The floor of the 5' x 10' x 5' shelter showed no evidence of utilization even though it was cleared of pine needles and duff for inspection purposes. No material culture was found. The shelter is estimated to be up to twenty years old, based on the condition of the logs in comparison with fallen trees of known date.

The second site, 39PN58, is a 35' x 20' x 30' southeast-facing rock shelter on the side of Mount Rushmore (T2S R6W S18 NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$). It was formed when an extremely large boulder fell and landed across a drainage, leaving a large open space underneath. There are two openings to the shelter, but only one is usable as an entrance (Plate 6). The other opening, the "window," is partially blocked by remains of a man-made wall of unmodified stones from the drainage (Plate 7). Other cultural material consists of a cobble fireplace and metal grill, tin cans, and several hearth areas. The site was most recently used as a lookout and shelter during the 1972-1973 American Indian Movement disturbances at Mount Rushmore. There is no evidence of aboriginal utilization although the active drainage through the shelter floor may have buried

or removed any remains. No cultural material was located outside the shelter.

Four small dumps that produced 1930-1940 period trash were located in one of several areas containing evidence of logging operations (T2S R6W S3 NW $\frac{1}{4}$, SW $\frac{1}{4}$). Old trace-ways and piles of cut logs in the level areas of the Memorial represent timbering activities carried out by Gutzon Borglum. Logs from the Memorial were used as bracing and protective supports during sculpturing activities.

An abandoned mica quarry and several test holes were found between the Borglum Memorial Highway and the residential area (T2S R6W S7 SE $\frac{1}{4}$). At one time a Memorial concessionaire attempted to establish a mining claim in the area, thereby achieving complete control over his operation. His attempts were thwarted, however, and only the holes remain.

Discussion

All cultural evidence located on the National Memorial is indicative of very recent human activity. The logging remains and associated trash dumps are a direct result of Borglum's sculpturing activities. The ersatz mining tests, too, can be directly related to Memorial development.

The temporary structure, 39PN57, is more difficult to interpret. In all probability it resulted from an urgent need for shelter. The Borglum Memorial Highway; South Dakota Highway 16A; and Keystone, South Dakota are sufficiently close to obviate the need for a long term, substantial shelter. It may have been constructed by hunters, hikers, or campers who wanted a little overnight protection, or even during children's play.

Remains found in 39PN58, while minimal, substantiate the interpretation provided by park personnel that the shelter was most recently used during the 1972-1973 American Indian Movement disturbances. Evidence of prehistoric aboriginal activity is entirely lacking.

There may be several reasons for the absence of aboriginal sites on Memorial lands: (1) The steep and rugged terrain, coupled with the dense forestation, may have precluded any but the most sporadic aboriginal utilization. The floral, faunal, and other resources of the Memorial are readily available elsewhere in the Black Hills--in areas more easily accessible from the surrounding plains. Following wandering game or acquiring spruce lodge poles may have been the only reasons for aboriginal contact with the area. Evidence reflecting these activities is nonexistent. (2) Historically, the high mountain peaks of *Paha Sapa* were the home of the Dakota deities (Denig 1961: 5-6). This would probably have included Old Baldy Mountain and Mount Rushmore. Long term occupation, for any other than religious purposes, may have been undesirable. Ceremonies, such as vision quests, that could have taken place in the Hills seldom leave much evidence (Dorsey 1894: 436-437). (3) The extremely dense vegetation in most areas and thick ground cover make site location difficult. In fact, walking through many sections of the Memorial is practically impossible. Sites may be hidden under thick ground cover or lost in the dense mat of pine needles.

This lack of remains reflecting aboriginal activity on Mount Rushmore, however, is in keeping with historic data and current interpretation of Black Hills archeology. Nonetheless, a thorough investigation of high areas around the Memorial may well produce sufficient evidence

to alter this view of sporadic use and brief occupation of *Paha Sapa*. As indicated above, local collectors report they find projectiles in the open parklands near Mount Rushmore National Memorial. Just west of the Memorial Woodland pottery is reported from a site (39PN2) located on Forest Service land (T2S R5E S13 NW $\frac{1}{4}$ NW $\frac{1}{4}$).

RECOMMENDATIONS

No significant cultural resources were located on Mount Rushmore National Memorial, and further work at the two known sites is not recommended. The chances of future developments affecting any archeological or historic remains is unlikely. However, it should be kept in mind that large scale earth moving activities may expose hidden materials.

As funds become available, archeological evaluation of the region adjacent to Mount Rushmore should be conducted. This would allow more adequate understanding and accurate interpretation of the dearth of aboriginal evidence on Mount Rushmore National Memorial.

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APPENDIX A

CHECK-LIST OF BIRDS OF MOUNT RUSHMORE AREA*

Permanent residents - Species present the year round and breeding regularly.

Cooper's Hawk	Black-Capped Chickadee	Mallard
Sharp-Shinned Hawk	White-Breasted Nuthatch	Goshawk
Ruffed Grouse	Red-Breasted Nuthatch	Turkey
Great Horned Owl	Townsend's Solitaire	Gray Jay
Belted Kingfisher	Golden-crowned Kinglet	Blue Jay
Hairy Woodpecker	American Goldfinch	Brown Creeper
Downy Woodpecker	White-winged Junco	Pine Siskin
Red Crossbill	Slate-Colored Junco	

Summer residents - Species present in summer, absent or rare in winter, and breeding regularly.

Turkey Vulture	Swainson's Thrush	Mourning Dove
Red-tailed Hawk	Mountain Bluebird	Canyon Wren
Black-Billed Cuckoo	Solitary Vireo	Rock Wren
White-Throated Swift	Red-eyed Vireo	Robin
Red-Shafted Flicker	Warbling Vireo	Veery
Red-Naped Sapsucker	Yellow Warbler	Ovenbird
Eastern Kingbird	American Redstart	Yellowthroat
Western Kingbird	Western Tanager	Song Sparrow
Western Flycatcher	Chipping Sparrow	
Western Wood Peewee	Cliff Swallow	

Transients - Species passing through the area in migration, in winter wanderings (*), or occasional summer visitor (**).

Canada Goose	Killdeer
Blue-Winged Teal	Nighthawk**
Golden Eagle**	Cedar Waxwing*
Saw-Whet Owl	Brown-headed Cowbird
Steller's Jay*	Evening Grosbeak*
Magpie**	Lark Bunting
Crow*	Horned Lark

*Transcribed from a checklist available at Mount Rushmore National Memorial, 1973.

APPENDIX B

IDENTIFIED FLORA FROM MOUNT RUSHMORE NATIONAL MEMORIAL*

29

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>USE**</u>
1. Fireweed	<i>Chamaenerion latifolium</i>	
2. Meadow-sweet/Spiraea	<i>Spiraea lucida</i>	
3. Dogbane	<i>Apocynum androsaemifolium</i>	
4. Bluebell	<i>Campanula rotundifolia</i>	
5. Yarrow/Milfoil	<i>Achillea Millefolium</i>	medicinal
6. Penstemon/Beardtongue	<i>Penstemon gracilis</i>	
7. Fleabane/Daisy	<i>Erigeron macranthus</i>	
8. Sweet clover	<i>Meililotus officinalis</i>	
9. Blackeyed Susan/Golden glow	<i>Rudbeckia hirta</i>	
10. False dandelion	<i>Nothocalais cuspidata</i>	
11. Locoweed/Milkvetch	<i>Astragalus adsurgens</i>	

*Common and scientific names transcribed from list at Mount Rushmore National Memorial. Date of work unknown. No attempt has been made to verify or to update identifications.

** Kirk 1970, Cutler 1966, Gilmore 1919.

IDENTIFIED FLORA FROM MOUNT RUSHMORE NATIONAL MEMORIAL (Cont.)

30

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>USE**</u>
12. Amorpha	<i>Amorpha nana</i>	
13. Silvery lupine	<i>Lupinus argenteus</i>	
14. Wild licorice	<i>Glycyrrhiza lepidota</i>	edible roots, seasoning
15. Spikenard/False Solomon seal	<i>Wagnera sessilifolia</i>	
16. Horsemint/Bee balm	<i>Monarda fistulosa</i>	medicinal, beverage
17. Wood/Red lily	<i>Lilium philadelphicum</i>	edible bulb, medicinal
18. Rose	<i>Rosa acicularis</i>	edible fruit
19. Prairie goldenrod	<i>Solidago missouriensis</i>	pot herb, tea, medicinal
20. Wild strawberry	<i>Fragaria virginiana</i>	edible fruit
21. Bedstraw	<i>Galium boreale</i>	edible seeds, medicinal
22. Mariposa/Sego lily	<i>Calochortus nuttallii</i>	edible tuber
23. Red clover	<i>Trifolium pratense</i>	edible stems, leaves, seeds, dried flower, tea
24. Clover	<i>Trifolium hybridum</i>	edible stems, leaves, seeds, dried flower, tea
25. Senecio/Hoary ragwort	<i>Senecio werneriaefolius</i>	

IDENTIFIED FLORA FROM MOUNT RUSHMORE NATIONAL MEMORIAL (Cont.)

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>USE</u>
26. Vervain/Verbena	<i>Verbena stricta</i>	edible seeds, leaves, medicinal
27. Red elderberry	<i>Sambucus racemosa</i>	medicinal
28. Coneflower	<i>Ratibida columnifera</i>	tea, medicinal
29. False Flax-mustard	<i>Camelina sativa</i>	
30. Vervain/Verbena	<i>Verbena bracteata</i>	edible seeds
31. Geranium/Crane's bill	<i>Geranium Richardsoni</i>	
32. Pine drops	<i>Pterospora andromedea</i>	
33. Evening primrose	<i>Oenothera biennis</i>	
34. Evening primrose	<i>Oenothera Hookeri</i>	
35. Stonecrop	<i>Sedum stenopetalum</i>	pot herb, edible leaves, stems
36. Purple cone flower	<i>Brauneria pallida</i>	
37. Soapwort	<i>Saponaria officinalis</i>	
38. Blue thistle	<i>Carduus undulatum</i>	edible pith (boiled)
39. White sage	<i>Artemisia gnaphalodes</i>	edible seeds, fruit, medicinal, tea
40. Bearberry/Kinnikinic	<i>Arctostaphylos Uva-ursi</i>	tobacco, medicinal

IDENTIFIED FLORA FROM MOUNT RUSHMORE NATIONAL MEMORIAL (Cont.)

32

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>USE</u>
41. Wintergreen	<i>Pyrola elliptica</i>	
42. Small fleabane/Daisy	<i>Erigeron leiomerus</i>	
43. Ox-eye	<i>Heliopsis scabra</i>	
44. Blazing star	<i>Laciniaria scariosa</i>	medicinal
45. Blazing star	<i>Laciniaria punctata</i>	
46. Rough cinquefoil	<i>Potentilla monspeliensis</i>	edible roots, medicinal
47. Tall goldenrod	<i>Solidago serotina</i>	pot herb, tea, medicinal
48. Red raspberry	<i>Rubus strigosus</i>	edible fruit
49. Still goldenrod	<i>Solidago rigida</i>	pot herb, tea, medicinal
50. Chokecherry	<i>Prunus virginiana</i>	tea, medicinal, edible fruit
51. Quaking aspen	<i>Populus tremuloides</i>	construction, edible inner bark
52. Paper birch	<i>Betula papyrifera</i>	household utensils, construction
53. Peach leafed willow	<i>Salix amygdaloides</i>	edible bark in emergency, construction
54. Long leafed willow	<i>Salix longifolia</i>	edible bark in emergency, construction

IDENTIFIED FLORA FROM MOUNT RUSHMORE NATIONAL MEMORIAL (Cont.)

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>USE</u>
55. Burr/Scrub oak	<i>Quercus macrocarpa</i>	edible acorns, medicinal, construction
56. Nodding onion	<i>Allium cernuum</i>	edible bulb
57. Sasparilla	<i>Aralia nudicaulis</i>	
58. Ponderosa/Yellow pine	<i>Pinus ponderosa</i>	sugar from cambium and seeds, medicinal
59. Common juniper	<i>Juniperus communis</i>	edible fruit, tea, medicinal
60. Poison ivy	<i>Rhus rydbergii</i>	
61. Shooting star	<i>Dodecatheon Meadia</i>	edible roots and leaves
62. Yellow pea	<i>Thermopsis montana</i>	
63. Blue violet	<i>Viola obliqua</i>	edible leaves and stems
64. Yellow violet	<i>Viola biflora</i>	edible leaves and stems
65. Canadian anemone	<i>Anemone canadensis</i>	
66. Pasque flower	<i>Pulsatilla hirsutissima</i>	medicinal
67. Rockcress mustard	<i>Arabis Holboellii</i>	
68. Alfalfa/Nonesuch	<i>Medicago falcata</i>	edible seeds
69. Blue wood sorrel	<i>Oxalis violacea</i>	edible leaves and stems

IDENTIFIED FLORA FROM MOUNT RUSHMORE NATIONAL MEMORIAL (Cont.)

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>USE</u>
70. White paint brush	<i>Castilleja integra</i>	edible flowers (raw)
71. Creamy vetchling	<i>Lathyrus orchroleucus</i>	edible pods and seeds, medicinal
72. Astragalus	<i>Astragalus sparsiflorus</i>	
73. Meadow parsnip	<i>Zizia cordata</i>	
74. Erigonium/Buckwheat	<i>Eriogonum simpsonii</i>	edible stems and leaves
75. Spiderwort	<i>Tradescantia virginiana</i>	
76. Alumroot	<i>Heuchera hispida</i>	medicinal (anti-diarrhea)
77. Spruce	<i>Picea glauca</i>	sugar from cambium, construction
78. Phlox	<i>Phlox douglasii</i>	
79. Honeysuckle	<i>Lonicera involucrata</i>	edible berries
80. Rocky Mountain Iris	<i>Iris missouriensis</i>	medicinal
81. Yellow oxalis/Yellow sorrel	<i>Oxalis stricta</i>	edible leaves and stems
82. Blue sweet pea	<i>Lathyrus ornatus</i>	edible pods
83. Ninebark/Wild cranberry	<i>Opulaster opulifolius</i>	
84. Arnica	<i>Arnica alpina</i>	

IDENTIFIED FLORA FROM MOUNT RUSHMORE NATIONAL MEMORIAL (Cont.)

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>USE</u>
85. Two leaf Solomon seal	<i>Maianthemum canadense</i>	
86. Penstemon	<i>Penstemon grandiflorus</i>	medicinal
87. Blue eyed grass	<i>Sisyrinchium angustifolium</i>	
88. Dandelion	<i>Taraxacum officinale</i>	pot herb, edible leaves, roots, medicinal
89. Cow parsnip	<i>Heracleum lanatum</i>	
90. Shepherd's purse	<i>Capsella Bursa-pastoris</i>	
91. Hound's tongue	<i>Cynoglossum officinale</i>	
92. Starwort	<i>Stellaria longifolia</i>	pot herb, tea, ceremonial, medicinal
93. Loco weed	<i>Astragalus lambertii</i>	
94. Turnip leaf senecio	<i>Senecio rapifolius</i>	
95. Dock	<i>Rumex persicaris</i>	pot herb
96. Dog fennel	<i>Lomatium foeniculaceum</i>	edible root, stem, leaves, flowers, seeds
97. Fleabane/Daisy	<i>Erigeron salsuginosus</i>	
98. Fleabane/Daisy	<i>Erigeron caespitosus</i>	

IDENTIFIED FLORA FROM MOUNT RUSHMORE NATIONAL MEMORIAL (Cont.)

36

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>USE</u>
99. Fleabane/ Daisy	<i>Erigeron argentatus</i>	
100. Pearly everlasting	<i>Anaphalis margaritacea</i>	medicinal
101. Fragrant bedstraw	<i>Galium trifidum</i>	edible seeds, dye from roots, beverage
102. Cinquefoil	<i>Potentilla Hippiana</i>	edible roots, medicinal
103. Mint	<i>Mentha citrara</i>	edible leaves, herb, medicinal
104. Rockcress/ Mustard	<i>Arabis Drummondi</i>	
105. Rockcress/Wild candy tuft	<i>Arabis ligniposa</i>	
106. White clover	<i>Melilotus alba</i>	
107. White aster	<i>Aster ptarmicoides</i>	edible leaves
108. Woundwort	<i>Stachys palustris</i>	edible tubers, medicinal
109. Mint	<i>Mentha canadensis</i>	edible leaves, herb, medicinal
110. Plantain	<i>Plantago Rugelii</i>	edible leaves, stems, pot herb, seeds, medicinal
111. Fetid marigold	<i>Dyssodia papposa</i>	medicinal
112. Aster	<i>Aster meritus</i>	edible leaves
113. Whitetop daisy	<i>Erigeron ramosus</i>	

IDENTIFIED FLORA FROM MOUNT RUSHMORE NATIONAL MEMORIAL (Cont.)

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>USE</u>
114. Cryptantha/Borage	<i>Cryptantha confusa</i>	
115. Loco weed	<i>Astragalus lotiflorus</i>	
116. Winged pigweed	<i>Cycloloma atriplicifolia</i>	edible seeds
117. Four-O'Clock	<i>Mirabilis hirsuta</i>	
118. Goosefoot pigweed	<i>Chenopodium fremontii</i>	edible leaves, seeds, roots, soap, medicinal
119. Daisy	<i>Erigeron canadensis</i>	
120. Venus's Looking-glass	<i>Specularia perfoliata</i>	

APPENDIX C

ARCHEOLOGICAL SITES FROM MOUNT RUSHMORE NATIONAL MEMORIAL

Archeological Site Data

1. Site: 39PN57
2. Location: T2S R6W S8 SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$
Map Reference: USGS Mount Rushmore 15' Quadrangle Map, 1971; Mount Rushmore Master Plan Map, 1957. The site is located 10-15' north of and outside Memorial lands. It is on the northwest edge of a ridge that runs diagonally across the Memorial's northeast corner. It can be reached by walking west along the north MORU boundary, beginning at the northeast corner of the Memorial. The site is in a large granite outcrop and easily visible from the border.
3. Owner and address: United States Forest Service, Pactola District, Black Hills National Forest, Rapid City, South Dakota.
4. Type of site (function): Temporary shelter.
5. Cultural affiliation: Unknown, temporally recent.
6. Elevation: 4600'
7. Site description and surroundings (topography, drainage and availability of water, flora, fauna, geology of buried site, etc.): The site is a temporary shelter constructed of pine and poplar (birch and aspen) logs that have been laid across two granite boulders to form a roof. Several of the logs have been burned although there is no evidence of a hearth or fireplace area. Several of the logs have axe-cut ends. The rest appear to have been used as found. The site is in a cluster of large granite boulders in a small clearing within a dense Ponderosa Pine, aspen, and birch forest. The nearest available water is Lafferty Gulch $\frac{1}{2}$ mile due west on an unnamed intermittent creek at the Memorial's east entrance. Deer and small mammals are the most common fauna in the area.
8. Extent of site: 5' x 10' x 5'
9. Depth and character of fill: The bottom of the shelter is covered by 4-6" of pine needles and duff. There is no evidence of utilization, such as campfire remains, within the shelter.
10. Present condition: The logs are deteriorating, but are not in a rotten condition.
11. Material collected: None. The only cultural material at the site is the logs.

12. Recommendations for further work: None.
13. Photograph numbers: Midwest Archeological Center, MORU 001, 002, 003, 004.
14. Distance from other known sites: Site 39PN58 is located on the east side of Mount Rushmore approximately 4-3/8 miles southwest of 39PN57.
15. Remarks: The site is estimated to be no older than 20 years due to the condition of the logs. No previous recordings of the site are known. No work has been carried out in this area.
16. Recorded by: Adrienne Anderson and Raymond Mundell
Date: 9/18/73

Archeological Site Data

1. Site: 39PN58
2. Location: T2S R6W S18 NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$
Map Reference: USGS Mount Rushmore 15' Quadrangle Map, 1971; Mount Rushmore Master Plan Map, 1957. The site is located on the steep Ponderosa Pine covered east side of Mount Rushmore.
3. Owner and address: National Park Service, Mount Rushmore National Memorial, Keystone, South Dakota.
4. Type of Site (function): Temporary habitation, shelter
5. Cultural affiliation: Anglo, temporally recent.
6. Elevation: 5600'
7. Site description and surroundings (topography, drainage and availability of water, flora, fauna, geology of buried site, etc): The site is a small shelter/cave that was formed when a large rock fell across a drainage leaving space below. The fallen rock formed the "roof" and the drainage bottom became the "floor." There are small "window" and "door" areas. The "window" affords a good view south-east towards the Badlands. There is a partial man-made wall of unmodified granite boulders from the drainage blocking the "window." The closest available water is at Memorial Headquarters or Rushmore Spring 1 $\frac{1}{2}$ mile to the east. Deer and small mammals are the most common fauna in the area. The site is within a granite outcrop on the dense Ponderosa Pine, aspen, and birch forest of the east side of Mount Rushmore.
8. Extent of site: 35' x 20' x 30' max. height.

9. Depth and character of fill: Silt carried in from above during heavy rains covers the bedrock floor. The depth changes after each heavy rain, but is generally thin - 4-6".
10. Present condition: There is a stone fireplace with metal grate, recent tin cans, and garbage scattered on the surface. The silt floor is sterile except for this surface debris. There is a partial rock wall, slightly fallen, blocking part of the "window."
11. Material collected: None. No aboriginal material was observed in or around the shelter.
12. Recommendations for further work: None.
13. Photograph numbers: Midwest Archeological Center, MORU 021, 022, 023, 024, 025.
14. Distance from other known sites: Site 39PN57 is 4-3/8 miles to the northeast.
15. Remarks: The site was used by NPS personnel during the 1972 and 1973 American Indian Movement troubles at the Memorial. It may have been used by aboriginal groups, but there is no evidence of such utilization. The site can be reached by a difficult, steep climb up the east side of Mount Rushmore. There is no trail, but a small drainage may be followed to the site from MORU maintenance facilities. No previous recordings of the site are known.
16. Recorded by: Adrienne Anderson and Raymond Mundell
Date: 9/25/73

PLATES 1-7



Plate 1. Mount Rushmore. View east across Borglum Memorial Highway to Mount Rushmore. Sculptures are on the opposite face of the granite outcrop.



Plate 2. Western side of Starling Basin. Rugged granite outcrops and dense Ponderosa Pine forest cover the Memorial's western boundary.



Plate 3. Lafferty Gulch and Starling Basin. a) dense deciduous growth in the bottom of Lafferty Gulch at the Memorial's north boundary; b) view north across beaver dams in Starling Basin at the Memorial's southern boundary. A large stand of spruce is visible in the background.

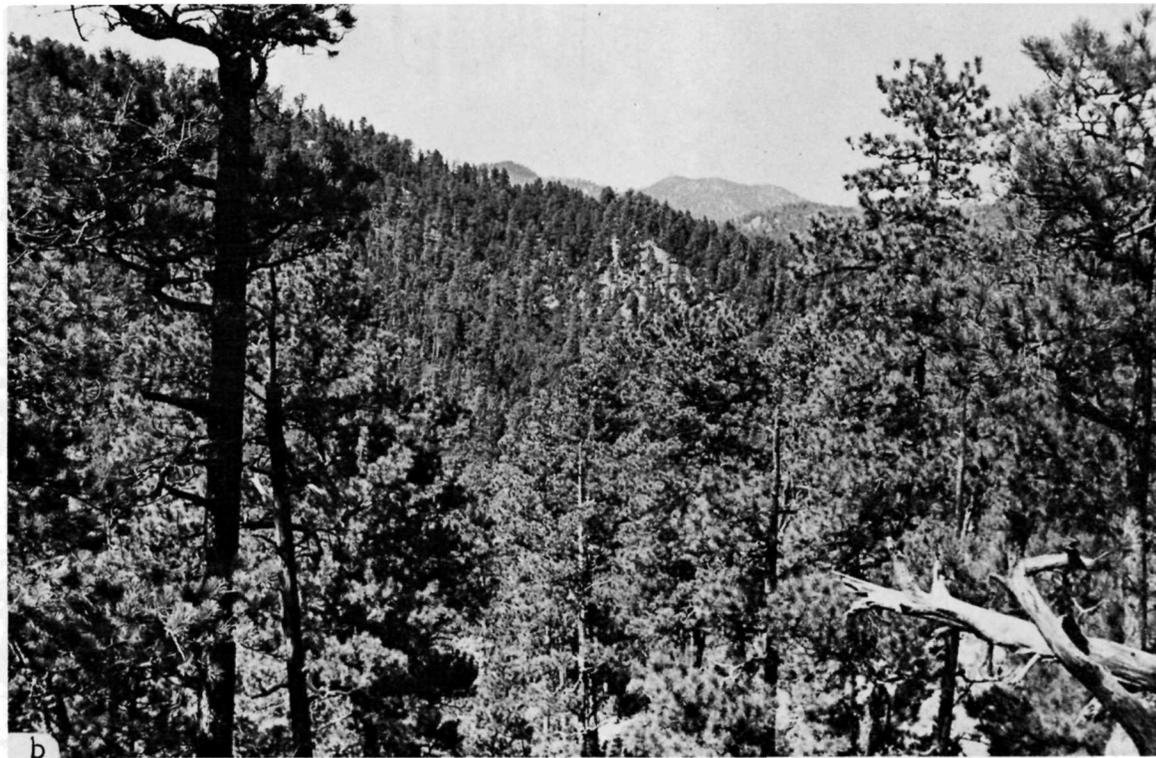


Plate 4. Ponderosa Pine stands in Mount Rushmore National Memorial.
a) dense pine forest at southeastern corner of Memorial (T2S R6W, corner
S7, 8, 18, 17); b) view northwest across Lafferty Gulch from Borglum
Memorial Highway.



Plate 5. Site 39PN57. a) view north looking down on remains of roof;
b) view into structure showing duff and pine needle-covered floor.

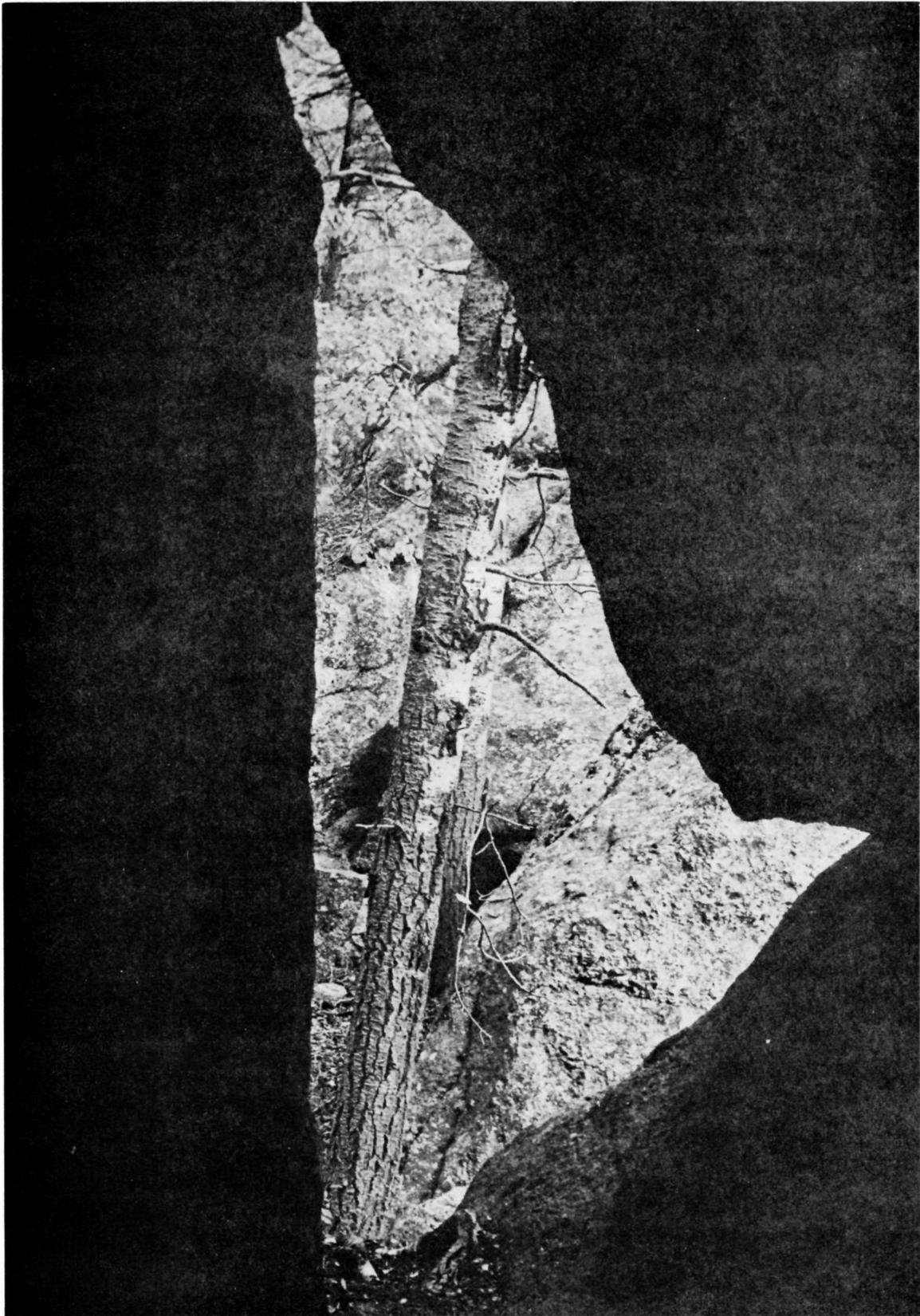


Plate 6. Doorway of site 39PN58.

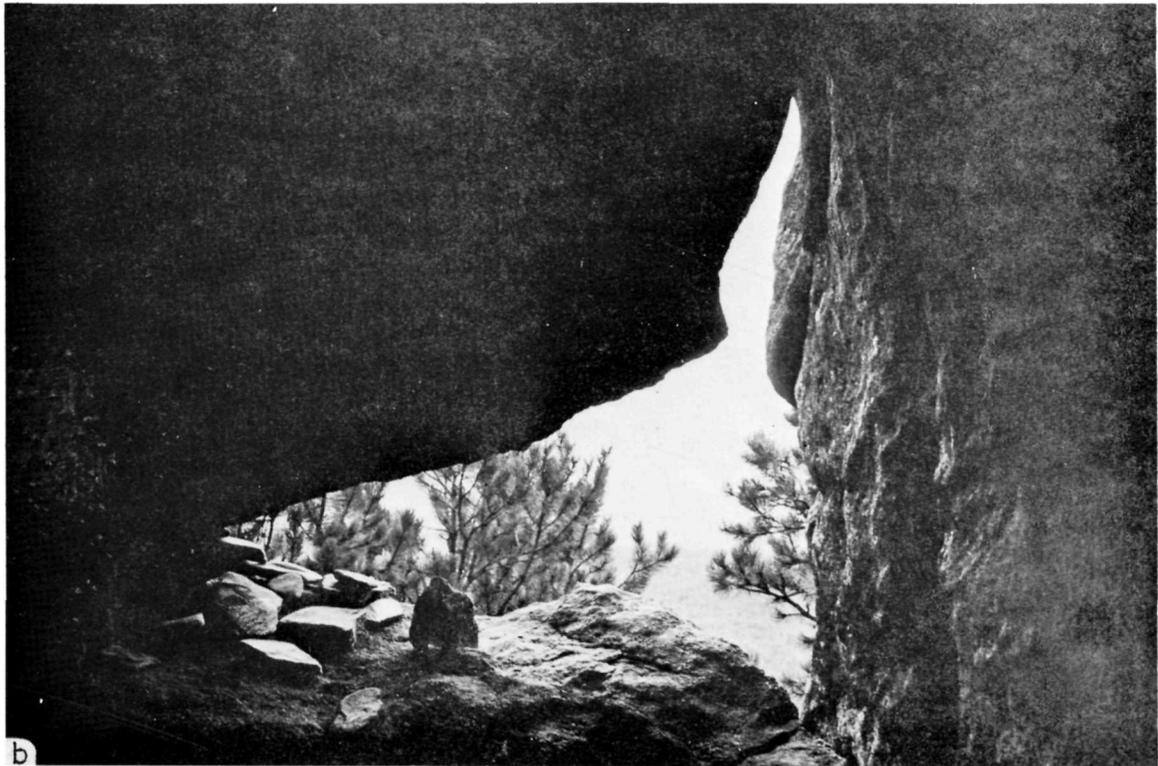


Plate 7. Window of site 39PN58. a) view up towards window ledge and man-made wall; b) view east out window showing remains of man-made wall.

