

ARCHEOLOGICAL SURVEYS

BLACK CANYON OF THE GUNNISON

CURECANTI



MIDWEST ARCHEOLOGICAL CENTER
OCCASIONAL STUDIES IN ANTHROPOLOGY

1. Anderson, Adrienne B.
1974 Archeological Assessment, Mount Rushmore National Memorial,
1973
 2. Mundell, Raymond L.
1975 An Illustrated Osteology of the Channel Catfish (Ictalurus punctatus)
 3. Weymouth, John W.
1976 A Magnetic Survey of the Walth Bay Site (39WW203)
 4. Zeimens, George M.
1976 Archeological Assessment, Fossil Butte National Monument
 5. Falk, Carl R., Steve Holen, and Robert Pepperl
1978 A Preliminary Assessment of Archeological Resources in the
Vicinity of the Proposed White River Development, Badlands
National Monument, South Dakota
 6. Olinger, Danny E.
1980 Agate Fossil Beds National Monument: Archeological Investi-
gations at Site 25SX163
 7. Stiger, Mark A., and Scott L. Carpenter
1980 Archeological Survey of Black Canyon of the Gunnison National
Monument
- Stiger, Mark A.
1980 Archeological Inventory and Evaluation of Curecanti
Recreation Area

ARCHEOLOGICAL SURVEY OF BLACK CANYON OF THE
GUNNISON NATIONAL MONUMENT

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ARCHEOLOGICAL INVENTORY AND EVALUATION
OF CURECANTI RECREATION AREA

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FOREWORD

The survey and research work conducted at Black Canyon of the Gunnison National Recreation Area and Curecanti Recreation Area are clear examples of how meagre beginnings can develop into a fruitful, long-range program designed on the one hand to meet National Park Service management needs, and on the other hand to provide an understanding of an area prehistory following a program designed to answer a series of questions about the culture history and adaptive patterns in a particular area.

Administratively, the initiation of the Black Canyon of the Gunnison archeological survey began in 1973 with a small (\$3,000) purchase order to the University of Colorado. It was supplemented in 1974 (\$1,500) and the University of Colorado continued the survey of the area. By no means can we consider this research as being complete in terms of all three phases of Executive Order 11593 requirements: 100% inventory, evaluation and nomination of all eligible sites to the National Register of Historic Places. However, the dedication, interest and perserverance of the researchers has produced considerable information about local prehistory and adaptive patterns, data unavailable before for this part of the Colorado Plateau.

The original version of the archeological report of the Black Canyon of the Gunnison surveys was completed in December of 1974, revised, resubmitted and accepted by the National Park Service in January, 1975. Shifts in Service orientation, programs, funding and

other factors precluded the publication of the Black Canyon report at that time. In the intervening years funds were made available for additional survey on the Colorado Plateau. In 1976 a purchase order was initiated with the University of Colorado to begin surveys at Curecanti Recreation Area. Utilizing the available funds, the University of Colorado initiated a more thorough inventory at Curecanti. In between the Black Canyon survey and the initiation of the Curecanti survey those involved in the initial research had matured somewhat. Their procedural perspective changed and from the experience gained by work at Black Canyon, a more thorough approach to the survey and a design to answer specific questions about Curecanti prehistory began. The Curecanti final report was submitted and accepted in June of 1978. It is more thorough and informative than the previous Black Canyon report and it provides a major contribution to the area prehistory. Stiger, Carpenter and Reed have uncovered significant information, extending the known culture history of the Gunnison River Basin to the Paleo Indian period occupation at approximately 11000 B.P. In addition to these data, preliminary subsurface testing conducted by the Service under Mark Stiger's and Tom Euler's direction in Curecanti Recreation Area during the summer of 1978 has revealed architectural remains on open sites, features not previously exposed in this area before. This most recent work in western Colorado has in effect outdated the Black Canyon report. However, in the interest of the dissemination of basic survey data and the history of National Park Service archeological investigations in western Colorado, we present the 1975 Black Canyon report along with the more current 1977 investigations at Curecanti Recreation Area. More detailed archeological information in western

Colorado and the report of the recent finds will be presented in a report now being prepared by Tom Euler.

F. A. Calabrese
Midwest Archeological Center

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ARCHEOLOGICAL SURVEY OF
BLACK CANYON OF THE GUNNISON
NATIONAL MONUMENT

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ACKNOWLEDGEMENTS

During August 1973 and June 1974 a survey of archeological resources within the Black Canyon of the Gunnison National Monument was undertaken by members of the Anthropology Department, University of Colorado. The work was carried out under Purchase Orders PX-6047-3-0106 and PX-6115-4-0127 issued by the Midwest Archeological Center, National Park Service. Field and laboratory crew members were Scott L. Carpenter, William B. Gillespie and Mark A. Stiger, under the direction of Dr. David A. Breternitz.

The project was aided by the cooperation of Superintendent Gilbert and his staff at the Monument. Dr. F. A. Calabrese of the Midwest Archeological Center gave much insight and assistance in the final compilation of the report. The help of these people was essential to our work and is greatly appreciated.

CHAPTER 1

INTRODUCTION

The Black Canyon of the Gunnison National Monument was established by Proclamation of former President Herbert Hoover on March 2, 1933. The creation of this National Monument was undertaken in the hopes of preserving a section of the Gunnison River that displays some of the most spectacular areas of geologic formation and scenic beauty in the western United States (Warner 1934:86).

The Black Canyon of the Gunnison River cuts across segments of Gunnison, Montrose and Delta counties. Although the canyon is approximately 52 miles long, the Gunnison National Monument encompasses only about 10 linear miles of the canyon. The Monument area is located in the northeastern portion of Montrose county and includes an area of about 11,000 acres along both the North and South rims of the canyon. The depth of the canyon ranges between 1730 and 2425 feet. The width of the canyon at the Narrows rim is only 1300 feet and tapers to as little as 40 feet at the river. The elevation along the canyon rims is about 8000 feet above sea level.

The steep and massive gorge of the canyon, combined with the area's geology, wildlife and panoramic beauty attract many visitors to this small National Monument. Reverend Warner (1934:92), of Montrose, described the certain mystical splendor of the area as he stated, "Long ridges of jagged granite project out into the main heart of the canyon, with deep, narrow gorges on either side, through which one may occasionally get a glimpse of the rushing, roaring waters of the mighty

Gunnison. Towers, pinnacles, spires and other fantastic rock formations greet the eye with an ever new challenge, as sunshine and shadow in the creation of this ever-changing pageant of rugged grandeur and majestic beauty."

The South Rim of the Monument may be reached by traveling west from Gunnison or east from Montrose on U.S. Highway 50, and then at a point eight miles east of Montrose, by traveling north through the Bostwick Park farming area. Access to the North Rim is through the town of Crawford and along dirt roads for 14 miles to the south. The South Rim of the Monument is more heavily developed and more heavily visited than is the North Rim. Facilities on the South Rim include a campground, small visitor's center, snack bar and gift shop, roads and trails and Park Service facilities which include a Ranger Station, maintenance area and residences. The North Rim has a campground, a limited number of roads and trails and a Ranger's Station and quarters.

An archeological survey of the National Monument was conducted with the intention of producing an archeological base map of the Monument in compliance with Executive Order 11593. The inventory resulting from the survey provides the opportunity to consider archeological resources in the planning of future developments in the Monument. The information provided by the survey will contribute to the understanding of the regional archeology and will enable researchers and managers to better understand which cultural resources are significant in the area of the Monument. Further, this information should result in a data base that will be useful to Park Service planners and managers who must provide the necessary improvements for the Monument without endangering significant archeological resources.

CHAPTER 2

NATURAL HISTORY AND PHYSICAL ENVIRONMENT

The Colorado Plateau

The Black Canyon of the Gunnison River is located within the vast area known as the Colorado Plateau which ends in mountainous regions to the east (the Continental Divide) and to the south (the San Juans). The area is composed of high plains which have been deeply cut by rivers and streams. Grand Mesa, one of the largest and highest mesas in the United States, lies north of the Gunnison River. South and east of the Black Canyon lies the Uncompahgre Plateau.

Black Canyon of the Gunnison National Monument

Topography and Geology

The Black Canyon was formed by the slow continuous erosional cutting of the Gunnison River. Over a period of approximately two million years, the river has cut through several sedimentary and metamorphic formations to form the present canyon. Landslides, rockfalls and other geomorphological events have also contributed to the configuration of the canyon, but the spectacular landform is largely the result of downcutting. The erosional processes which created the canyon are still active, although they have been altered by the controlled flow of the Gunnison River.

The steep walls of the canyon were cut into the floor of a broad outer valley with gentle terrain consisting of Jurassic sedimentary formations of shale and sandstone (including the Entrada, Wanakah and Morrison formations). Below these sedimentary layers the canyon cuts into a rock foundation that is of Cambrian and Precambrian age. This foundation of metamorphic and igneous rock is composed principally of granite, gneiss and schists with intrusive dikes of pegmatite. Other constituents include mica, quartzite, feldspar and garnet. This mixture of geologic formations is more interesting when the structural placement of seams, faults and folds can be viewed and studied (Hansen 1971; Warner 1934:93; Hunter 1925). The rugged nature of the canyon terrain likely served as a landmark and partial barrier during the prehistoric and early historic occupation of the area.

It should be mentioned here that the upper sedimentary layers of shale and sandstone contain some inclusions of crypto-crystalline materials such as chert and chalcedony. These lithic resources, along with quartzite, are suitable for the manufacture of stone tools and may have been an important resource for the prehistoric adaptive systems operating in the Gunnison River area.

Water Resources

The Gunnison River is the main water resource of the Monument area; however, the access to the canyon bottom is quite treacherous, making the river relatively inaccessible. Access to the canyon bottom is possible in a few places by means of a few rugged routes that follow side drainages from both rims. The easiest access to the Gunnison River within the Monument is through Red Rock Canyon. This route also is quite rugged. It should be noted at this point that the Utes had a fear

of the canyon itself and believed that if anyone entered the dark chasm, they would never return. This belief could have also been held by the prehistoric occupants of the area.

Today, the drainages that empty into the canyon are dry except during runoff periods. The only semi-permanent stream within the Monument is that which flows through Red Rock Canyon. There are a very limited number of springs in the immediate vicinity of the North and South Rims of the canyon. The largest is Lion's Spring near the South Rim Ranger Station. Early inhabitants probably obtained water from seasonal runoff as well as sources from outlying areas and locally from a limited number of modern springs. Nevertheless, it is conceivable that the sources of water within the monument were greater in the past than today.

Floral Resources

The flora of the Monument includes many different species and families. The changes in the types of vegetation follow the topographic changes of the canyon area. The rim of the canyon exhibits an environment containing much scrub vegetation including sagebrush, fendler, buckthorn, wild rose, wild currant, mountain mahogany, chokecherry and the predominate shrub, Gambel's oak (Warner 1934:94). In areas with better moisture content and exposure, spruce, juniper and pinyon grow; occasional stands of aspen in areas especially moist are present as well. Some ponderosa pine grow on the North Rim. Along the river there are cottonwoods and willows. Many of the trees, such as the juniper and the spruce, occupy areas at the edge of the rocky canyon and exhibit a contorted and twisted shape as an adaptation to the harsh environment of the canyon walls.

The area is also covered with many types of wildflowers that may be found throughout the Rocky Mountain region. Included are the asters, lupine, mariposa or sego lily, mountain daisy, scarlet gilia, Indian paint-brush and the primrose. In the rocky areas of the Monument, cacti and yucca can be found, and within the shaded and moist areas of the canyon itself, there is a great display of mosses, lichens and ferns.

Of the vast and varied floral collection of the Monument, many of the plants and flowers are edible and, thus, could have supplied early inhabitants with an additional food source to that of the hunted game. A few of these edible forms include the wild currant, choke-cherry, wild rose, serviceberry, sego lily, yarrow and goldenrod.

A herbarium list for the Monument was compiled by Pat Miller of the Black Canyon National Monument and W. A. Weber of the University of Colorado Museum. It includes a majority of the floral specimens collected within the area (see Appendix A).

Faunal Resources

The fauna of the Black Canyon National Monument has never been formally studied, however, the University of Utah has compiled and published Ecological Studies of the Flora and Fauna of the Curecanti Reservoir Basins, Western Colorado (Woodbury 1962). The Curecanti reservoir project is located upstream or to the east of the Monument on the Gunnison River; consequently much of the findings of this study may be applied to the National Monument itself.

Birds of the Gunnison River area, for the most part, are those which are common to the same altitude zone of the mountainous regions of Colorado. The University of Utah study found that the birds form the bulk of the vertebrate population of the Curecanti area. The study

prepared a list which includes 165 species, of which, 63 are considered permanent residents, 71 as summer residents, and 31 as winter residents, migrants or casuals (Woodbury 1962:9).

Warner (1934:95), referring to the lack of a formal bird study of the Monument, mentioned his own observation of the birds of the canyon. Among the larger birds he noted the eagle, vulture and the sharp-shinned hawk which frequently soar high above the canyon. Smaller birds include the members of the sparrow family, the robin, mountain bluebird, hummingbird and the Rocky Mountain jay. Warner further notes that one of the most interesting birds of the Monument is the northern, violet-green swallow. Hundreds of the small, beautiful birds were seen each day during the archeological survey, while they raced in acrobatic flight with the wind currents that flow near the top of the canyon.

The mammalian fauna (identified by the University of Utah study) includes two species of shrews, six of bats, two of rabbits, 18 of rodents, six of carnivores and two of ungulates. Of this list, those mammals known to reside within the Monument include the mule deer, elk, coyote, mountain lion, porcupine, bats, ground squirrel, chipmunk and the black bear (Warner 1934:95). The Gunnison River supports an abundant fish population and a number of other water residents such as the beaver and muskrat.

The number and variety of animals in and around the area of the Monument has definitely decreased over the past due to the increase in human population and associated development. However, it is safe to say that the Gunnison River area and the surrounding Colorado Plateau, at one time, supported a large faunal population.

CHAPTER 3

CULTURAL HISTORY OF WESTERN COLORADO

Prehistoric Occupation of Western Colorado

The lack of durable art and architecture in the area of the Gunnison River is partially responsible for the relative lack of interest in the prehistory of the region. Therefore, work in this area has fallen behind other regions such as the Southwest which have relatively explicit descriptions of their past. Despite this situation, sufficient research has been conducted to suggest an outline of the progression of prehistoric cultural change.

Paleo-Indian Period

Generally speaking, the Paleo-Indian period of Intermountain Western Colorado is characterized by a scarcity of representative sites. Considerable inference must be drawn from the few sites which are known to exist in the area and from sites in other areas. For this reason, the Paleo-Indian sequence presented here must be considered tentative and in need of local substantiation.

Krieger (1964) has hypothesized a Preprojectile Point stage. By general convention, this stage precedes and is basic to the rest of the American sequence. However, the existence and dating of this stage is heavily disputed. Most archeologists refuse to recognize this culture, and the assignment of a site to the Preprojectile Point stage is likely to face much controversy (J. Jennings 1968). The definition of the Black Fork culture of Southwestern Wyoming as presented by Renaud

(1938, 1940) bears some similarity to the Preprojectile stage. Calvin Jennings (1968) feels that "choppers" from Dinosaur National Monument in northwestern Colorado (Breternitz 1965) resemble the core tools of Renaud's sites. However, the "choppers" from the Black Fork site have since been proven to be quarry material (Sharrock 1966).

No Llano or Clovis sites have been located in western Colorado. In other areas, sites attributed to this complex have been dated to 10,000-13,000 B.P. (Haynes 1966). The nearest site of such age is the Union Pacific Mammoth Site in southwestern Wyoming which yielded non-diagnostic type artifacts. Various private collectors have found Clovis points on the western slope, but these points have not been assigned to specific sites.

The first generally accepted Paleo-Indian occupation of western Colorado is the Folsom. Two of the diagnostically fluted points have been reported by Wormington (1957) from collections made in Montrose county by Albert Soderquist and Orville Parson. Huscher (1939a) also found two such points on the Uncompahgre Plateau. It was noted in the Black Canyon of the Gunnison National Monument Report of 1939 that two Folsom points were found near Kneeling Camel Point on the North Rim of the canyon within the Monument boundary. The points were sent to the Denver Museum of Natural History and an examination of the site by the Museum followed. Museum and the Park Service records do not document the disposition of the points or other visits to the site.

The Folsom complex is best defined by sites on the Great Plains such as the Lindenmier site. Tool kits of the distinctive points, knives, scrapers, choppers, hammerstones, rubbing stones, gravers, and worked bone were found at this campsite in northeast Colorado. These

nomadic hunters spent more time and energy on the manufacture of their points than was needed to make a purely utilitarian tool (Wilmsen 1974; Wormington 1957). Subsequently, we might speculate that the cultural patterns of the western Folsom culture in western Colorado may be different than the Folsom culture as a result of different adaptations to the different environments.

The Folsom complex is stratigraphically followed by the Plano complex. Plano occupations are also reported in western Colorado. The University of Colorado's work in Dinosaur National Monument has recovered a Scottsbluff and a Cascade point (Breternitz 1970). While the exact chronological location of Cascade points is not known, it has been argued that this complex should be given a Plano designation until further work indicates other (J. Jennings 1968). Hurst (1946) found several Yuma points near Nucla in western Colorado, and a Lake Mohave point has been reported from the nearby Uncompahgre Plateau (Smith 1966).

Excavations at sites yielding Plano material generally exhibit modern faunal remains and an absence of grinding stones. It appears that Plano peoples were diversifying their economic system by utilizing modern game species. It is believed that this economic diversification is also reflected in a diversification in artifact forms. Again, the Plano is defined from sites in the Plains region, and adaptive responses exhibited in western Colorado may differ in some aspects as a result of environmental differences.

Archaic Period

Whereas the earlier Paleo-Indian stage was characterized by the economic concentration on animal resources and lack of plant

preparation tools, the Archaic stage was marked by a change of lifestyle. A more extensive part of the environment was exploited, and ground stone technology came into wider use. Plant resources were modified with tools such as the grinding stone and grinding slab.

The Desert Archaic of the Great Basin is one of the more fully understood Archaic complexes. Sites such as Lovelock Cave and Danger Cave have yielded great quantities of perishables and other artifacts that illustrate the lifestyles of these peoples. Some of the earlier western Archaic material seems to indicate its coexistence with late Plano peoples. Calvin Jennings states that, "With further work I am confident that Desert Archaic sites with dates of comparable antiquity to the Lindenmier and Plano cultures will be found in western Colorado" (1968).

The Uncompahgre complex was defined from research conducted at several sites in western Colorado (two in Montrose county) by Wormington and Lister (1956). Typological and temporal similarities exist between the Uncompahgre Complex and Desert Archaic sites in the Great Basin. The complex is pre-horticultural and pre-ceramic.

Two Duncan-Hanna points found during the University of Colorado survey of the Black Canyon of 1974 (5MN203 and I.F.1.) indicates that early Archaic people used the Monument lands. This is the only evidence of Archaic occupation available at this time.

Ute Period

The late prehistoric period in the Monument area is attributed to ancestral Utes by Buckles (1968). These ancestral Utes can be described as a local variant of the Desert culture (J. Jennings 1957). Based upon the similarity of material culture and lifestyle, a high

degree of continuity with earlier Archaic complexes can be inferred. Only minor technological changes occurred in the late prehistoric period. The reduction in projectile point size somewhere in the eighth century A.D. (Buckles 1971) is the most obvious and is perhaps indicative of the change from the atlatl to the bow and arrow.

Historic changes in the Ute culture in western Colorado are the result of intrusive European items, particularly the horse and metal tools. However, all Ute archeology reflects a balance of hunting and plant gathering. No domestication is indicated. Pottery is scarce and only late in the prehistoric record. Shelter forms are the wickiup and the small tipi (Buckles 1968).

The archeological record documents the presence of man in the western area of Colorado from very early times, at least since the Folsom cultures. If, indeed, the Archaic complex is contemporaneous yet ethnically distinct from the Paleo-Indian cultures, an interesting problem arises as to the coexistence of two different lifestyles within overlapping territories.

Historic Occupation of the Black Canyon Area

The first white exploration into western Colorado was in 1765 when Captain Juan Maria de Rivera traveled through the area from Santa Fe. No records of his exact journey remain, but he probably traveled as far as the present town of Delta, Colorado (Buckles 1971; Schroeder 1953:4). Eleven years later, Father Escalante and his companions came through western Colorado following the Gunnison and Uncompahgre Rivers. No other official explorations occurred until after the area became a part of the United States in 1848 under the Treaty of Guadalupe Hidalgo (Schroeder 1953:4; Rose 1968:15-20).

Several trappers and traders made unsanctioned trips through the area during this period. Two such trappers were James Workman and Samuel Spencer, who, in 1809, discovered the Black Canyon of the Gunnison River (Schroeder 1953:4).

Antoine Roubideau built Fort Uncompahgre in the early 1830s on the site of the present town which bears his name. He also built Fort Roubideau near Delta in the 1820s but it was destroyed by fire shortly after construction. Roubideau, a St. Louis trapper, opened up the area, and several Americans visited the fort during its operation (Buckles 1971: Schroeder 1953:4; National Park Service n.d.:150).

Captain John W. Gunnison, while searching for railroad routes, followed the Gunnison River in 1853. John C. Fremont later followed Gunnison's route only to find that the course of the river was too rugged to be used as the location of the train route to California.

Miners and settlers flooded into the region and ended the pre-contact way of life for the Utes which finally resulted in their removal to Utah. By 1882, all but a few Utes had been removed from their homeland in western Colorado.

Archeological Work

The Uncompahgre Plateau has been the scene of several investigations which have studied the area's prehistoric occupations. To the north in Dinosaur National Monument, and to the west in Paradox Valley, Fremont sites have been recorded and studied. Buckles feels that the people of the Uncompahgre Plateau had little or no contact with either Fremont or Anasazi cultures (Buckles 1971:17), and it is likely that only the investigations of the Uncompahgre complex and similar sites have any relationship to the archeology of the Black Canyon.

In 1939, Harold and Betty Huscher recorded and excavated sites on the Uncompahgre Plateau (Huscher 1939a). Being archeological pioneers in this region, the Huschers attempted to establish chronologies and offer explanations to account for their findings. While they attributed the stone "circles" or "forts" to Athabascan migrants in the area (Huscher 1939b:9, 12-13, Huscher and Huscher 1943), today there is little empirical evidence to support any Athabascan influence in the area (Buckles 1971:8). Although outdated, the Huschers' work is invaluable because it provides information about many sites, including wickiup and lean-to sites, which have since been destroyed.

C. T. Hurst excavated two cave sites in the Tabeguache Creek drainage from 1939 until the early 1940s (Tabeguache Caves numbers I and II). Hurst reported that the material from these sites resembled the early Basketmaker material of both the Fremont and Anasazi (Hurst 1945).

The first definition of the Uncompahgre complex came about after several years of excavation in the 1950s. Wormington and Lister defined the complex on the basis of research at four sites. The complex seems to be a local variant of the Desert Archaic with its most diagnostic artifact being the Uncompahgre scraper. Wormington and Lister feel that the Tabeguache Caves are probably assignable to this complex (Wormington and Lister 1956:78-92).

William Buckles attempted to use the Direct Historical Approach to define prehistoric Ute culture. While working on the Uncompahgre Plateau, he outlined a cultural sequence beginning about 8000 B.C. and running through historic time. However, he believes that there are inadequacies in the oversimplification of his model and a need for further research using new methods exists (Buckles 1971:11-12).

CHAPTER 4

ARCHEOLOGICAL SURVEY OF THE BLACK CANYON OF THE GUNNISON NATIONAL MONUMENT

Purpose and Procedures

The Black Canyon of the Gunnison National Monument was examined for archeological remains in order to compile an archeological base map of the area. The study was also designed to evaluate sites in respect to future construction within the Monument, with the intention of minimizing the impact of modification projects on the important archeological remains of the area.

The field crew operated from 16 August to 26 August 1973, and from 26 May until 1 June 1974. The entire Monument was surveyed with the exception of the extreme northwestern area of the North Rim that is west of the level area on which site 5MN204 is located, and within one kilometer (.6 miles) either side of Red Rock Canyon on the South Rim. The reason for the omission is due to the inaccessibility of these areas. The archeological inventory was designed to locate and record surface cultural resources of the area. Intensive collections were made at the located sites.

Survey Results

During the August field season of 1973, 18 sites were found (5MN171 through 5MN188). Of these, 6 are located on the South Rim and 12 on the North Rim of the Black Canyon. In May of 1974, when the remainder of the survey was completed, a total of 20 sites were discovered (5MN194 through

5MN213), only one of which was found on the South Rim. This makes a total of 38 sites located and recorded within the surveyed area of the National Monument (Figure 1).

Through analysis, the sites are classified into one of six types: Source Area, Lithic Scatter, Lithic Area, Campsite, Other, and Isolated Finds. Source Areas are defined as sites where a source of raw material is located and was utilized in the production of stone tools, as indicated by the presence of lithic debris. A Lithic Scatter is simply a scatter of lithic debitage, sometimes in association with artifacts. This is more than likely due to the fact that the area was subject to natural wash. In comparison, Lithic Areas are found as a concentration of lithic debris with definable dimensions. Campsites are defined as assemblages of lithic material in association with grinding or milling stones and/or with the presence of a fire hearth. The Other category is a separate set containing special sites, in this case, a juniper structure 5MN185 and a possible rock shelter 5MN213. Isolated Finds consist of any artifact with no relationship to any site. Since these finds are not sites, each one has been assigned a separate designation letter (Table 1).

From a detailed study of the surface collections from two selected sites, information has been derived which reflects the nature of the habitation of the Black Canyon area. The study, by Mark Stiger and Scott Carpenter in the spring of 1974, dealt with the sites 5MN172 and 5MN182. Analysis of data from these sites showed that 90% of the flakes found were produced by soft hammer percussion and that some of the rock that was used for the production of tools was subjected to heat treatment in preparation. It was also observed, from the characteristics of

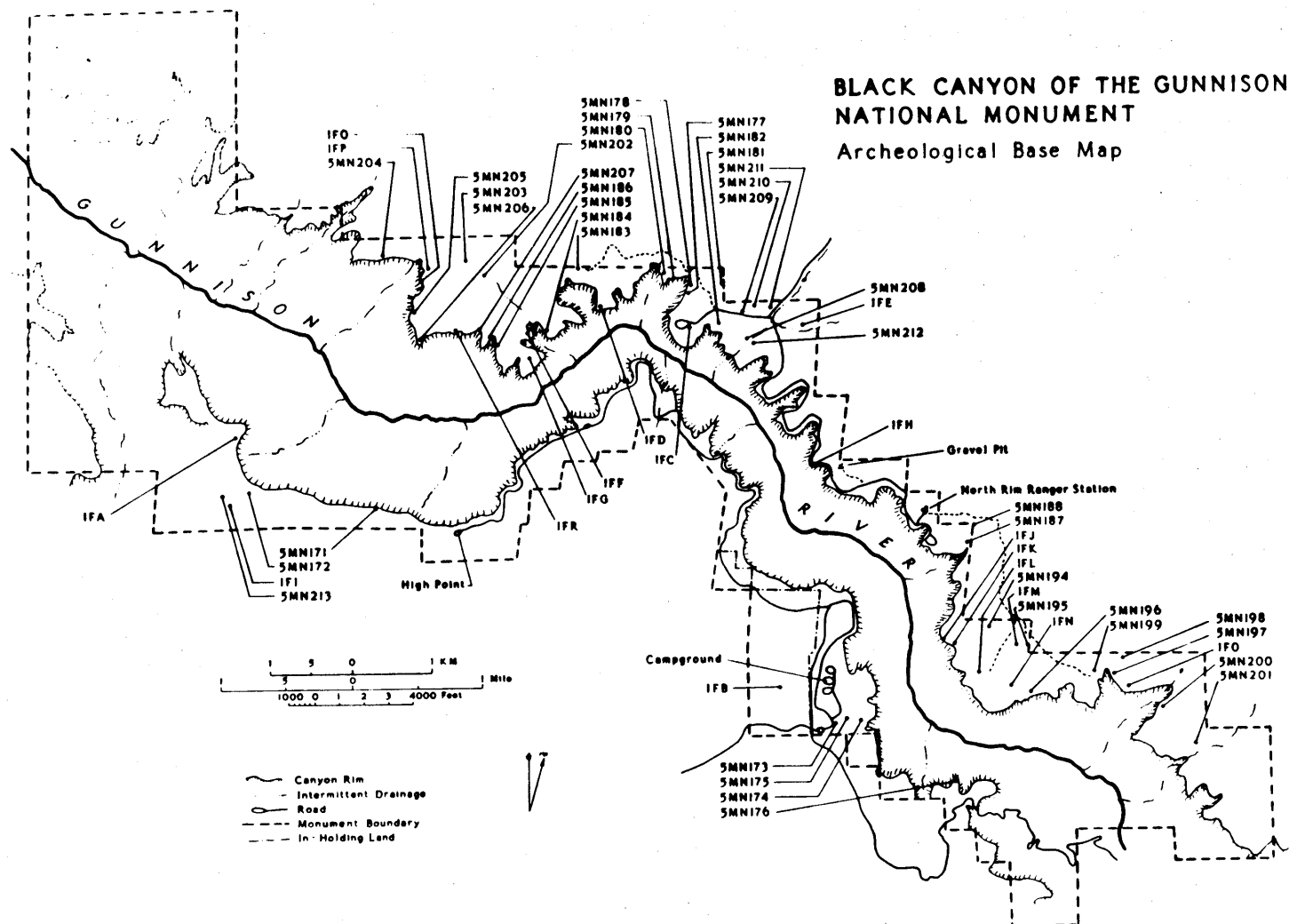


Figure 1. Map of Black Canyon of the Gunnison National Monument illustrating archeological site locations.

Table 1. Site Type Analysis for
Black Canyon of the Gunnison
National Monument

<u>Source Areas</u>	<u>Lithic Scatters</u>	<u>Lithic Areas</u>	<u>Campsites</u>	<u>Other</u>	<u>I.F.'s</u>
183 (N)	196 (N)	172 (S)	171(S)	184(N)	A(S)
	198 (N)	173 (S)	177(N)	213(S)	B(S)
	199 (N)	174 (S)	178(N)		C(N)
	200 (N)	175 (S)	180(N)		D(N)
	201 (N)	176 (S)	182(N)		E(N)
	202 (N)	179 (N)	187(N)		F(N)
	204 (N)	181 (N)	188(N)		G(N)
	205 (N)	185 (N)	206(N)		H(N)
		186 (N)	208(N)		I(N)
		194 (N)	212(N)		J(N)
		195 (N)			K(N)
		197 (N)			L(N)
		203 (N)			M(N)
		207 (N)			N(N)
		209 (N)			O(N)
		210 (N)			P(N)
		211 (N)			Q(N)
					R(N)

Totals

0-South	0-South	5-South	1-South	1-South	3-South
1-North	8-North	12-North	9-North	1-North	15-North

Note. Archeological resources have been classified into the six site types defined within this report. 'N' denotes a resource located in the North Rim of Black Canyon. 'S' denotes a resource located on the South Rim of Black Canyon.

the striations on grinding and milling stones, that the preparation of raw food stuffs by grinding occurred as both back and forth and circular motions, as well as by pecking and pounding.

Settlement patterns indicate that the Black Canyon area was used by both prehistoric and historic Indians on a seasonal basis. Winters along the canyon are somewhat severe and habitation was probably limited to temporary camps and tool production areas that were used during the spring, summer and fall. Probably movement in this area was governed by the availability of edible forms of vegetation and by the transitory movement of game. Many of the narrow points of land that jut out into the canyon have extremely steep sites which were probably used as game traps, as suggested by the presence of several isolated projectile points in location on such prominences.

Campsites are located primarily in areas with sandy soil, as opposed to the areas of abundant bedrock. These sites are favorable localities today, and consequently, the National Monument campgrounds are located near prehistoric campsites.

Only two above-ground architectural features were located during the survey. One is a juniper structure somewhat similar to a wickiup (5MN184), which may have been constructed by Utes. The other feature (5MN213) is a small rock shelter with one partial and three complete wooden beams near the ceiling. All of the other sites give no indication of depth or stratigraphy.

A general typology was formed for the projectile points collected from the survey. This classification system deals with characteristics of form and shape as seen in Table 2. The points are divided into four classes of base design. Corner Notched, Stemmed, Unnotched,

Table 2. Projectile Point Typology for Black Canyon Survey

Corner Notched	Stemmed	Unnotched	Side Notched
A Concave Base Convex Blade Large	E Indented Base Straight Blade E'-Serrated Edge	H Indented Base Straight Blade H'-Basally Ground	I Concave Base Straight Blade
B Straight to Convex Base Straight Blade B'-Serrated Edge	F Straight Base Straight Blade		J Straight Base Straight Blade
C Straight Base Convex Blade Large	G Straight Base Convex Blade		K Concave Base Straight Blade Triangular Shape
D Concave Base Straight Blade Small			

NOTE. In total, 59 points collected, including 18 points from the Gunnison Point collection. Of these, 32 were unclassifiable, 1 class A, 5 class B, 1 class B', 1 class C, 1 class D, 1 class E, 1 class E', 1 class F, 5 class G, 1 class H, 2 class H', 2 class I, 1 class J, and 4 from class K.



5MN184



I.F.M



5MN180



5MN208



5MN174



5MN171



5MN203



I.F.I

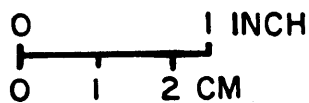


Figure 2A - Selected projectile points collected during the Black Canyon survey.



I

I.F.K



J

5MN188



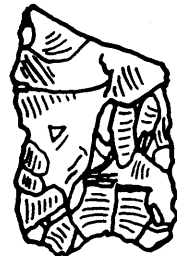
K

5MN208



L

I.F.L



M

5MN208



N

5MN179



O

I.F.P



P

I.F.N



Q

5MN178

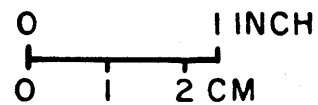


Figure 2B - Selected projectile points collected during the Black Canyon survey.

and Side Notched. Within each of these classes the points are classified according to attributes relating to the shape of the base and blade, and by general review of the size of the specimen. Figures 2a and 2b illustrates a collection of the points from the Black Canyon survey as they fit within the typology.

A general list of site data appears in Appendix B and includes pertinent information about site locations, site descriptions, artifacts collected, and general comments. Additional details are included in Breternitz et al. (1974). Illustrative examples of lithic areas, lithic scatters, campsites and a wooden structure have been depicted in Figures 3-10.

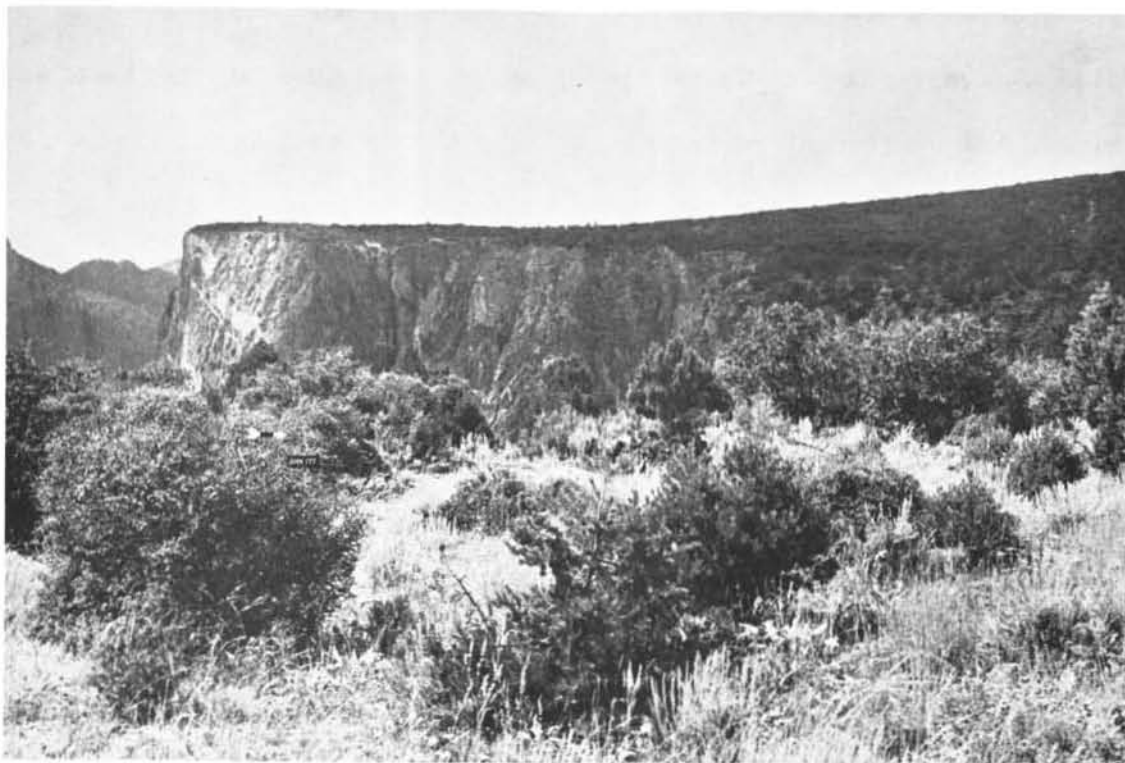


Figure 3. Looking west across site 5MN177 with canyon cliffs in background. Example of a North Rim lithic area in scrub vegetation near the canyon rim.



Figure 4. Wooden structure at 5MN184.



Figure 5. Looking southwest across site 5MN187 with South Rim in background. Example of a North Rim campsite in an eroded canyon rim.



Figure 6. Looking west at site 5MN195. Example of a lithic area on bedrock outcrop away from the canyon rim.

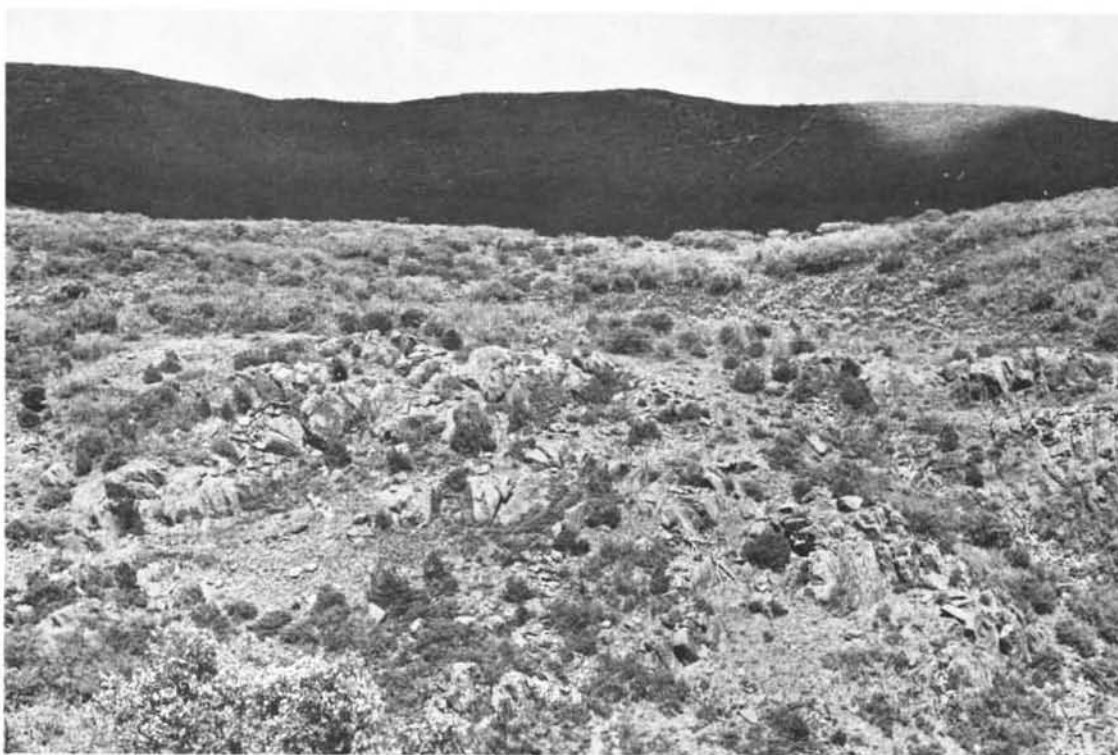


Figure 7. Looking east across a drainage towards site 5MN197. Example of a North Rim lithic area on bedrock outcrop.



Figure 8. Looking southwest at site 5MN200 located on a hilltop. Example of a lithic scatter in scrub vegetation near the canyon rim. South Rim and Crystal Dam road in background.



Figure 9. Looking south across site 5MN206. Example of a campsite in a pinyon-juniper location.



Figure 10. Looking northeast at site 5MN208 on a rocky knoll. Example of a campsite on a bedrock outcrop, away from the canyon rim.

CHAPTER 5

IMPACT ON ARCHEOLOGICAL RESOURCES AND RECOMMENDATIONS FOR MITIGATION

Discussion

There are a variety of activities which either have had an adverse impact on the archeological resources in the Black Canyon of the Gunnison National Monument or have the potential to be damaging in the near future. A summary of these impacts and recommendations for minimizing their effects are presented here.

Vandalism

Probably the most destructive activity in recent years has been the unrecorded collection of artifacts, mostly projectile points, from the ground surface on Monument lands. Due to the nature of the archeology in the Black Canyon area, a large portion of the total archeological information potential is represented by these surface artifacts. Removal of any part of the record is particularly damaging. This situation is due to two aspects of the Black Canyon archeological remains. First, stylistically sensitive artifacts, such as projectile points, are known to show changes through time. Thus, it is often possible to develop a regional sequence of projectile point styles. If specific forms can be correlated with dated remains, a general idea may be obtained of dates and cultural affiliations from the artifacts that are recovered. At the present time, there is not enough information to

establish such a regional chronological sequence for the Black Canyon area.

In order to establish such a chronological pattern, it is necessary to collect data from a large unbiased sample of artifacts. Therefore, it would be beneficial if adequate records were kept for each artifact that is found (i.e. descriptions, photographs, drawings, etc.).

The second critical characteristic of Black Canyon archeology is the observation that a considerable portion of the archeological record consists of essentially surface sites. Very few sites appear to have any depth of deposition. Therefore, the collection of artifactual material from the ground surface can result in the destruction of a considerable portion of the archeological record.

An example of this situation can be seen at Serpent Point on the North Rim. The survey crew was informed that there were a considerable number of artifacts on Serpent Point, but only a single fragment of a projectile point from that area is in the Gunnison Point Headquarters collection. When this area was examined, only a single grinding stone was found. Apparently, the area had been thoroughly collected before the crew's arrival. There is no record of what was found nor any knowledge of what has become of the collected material. Thus, knowledge of the prehistoric and historic use of Serpent Point is, for the most part, lost.

The Gunnison Point Collection consists of the tools and flakes that have been turned over to the custody of the Monument. It is presently housed at the Gunnison Point Ranger Station. Donors have been both employees and visitors, and finds have been collected from both

canyon rims. Usually, provenience of the artifacts is minimally recorded, if not absent, and some reported artifacts found on the Monument have not been placed in this collection. The materials comprising the Gunnison Point Collection have been examined and are documented in Breternitz et al. (1974).

In summary, it can be seen that these two characteristics of the archeological remains, the importance of projectile point attributes and the predominance of surface finds, make the unrecorded collection of surface artifacts a very destructive activity.

It is the opinion of the authors that this situation can be substantially improved if Park Service personnel devote a small amount of effort to the recording of minimal information on each finding that is made. In the early 1960s a group of rangers attempted to record information on location and material collected. However, these efforts recently seem to have lapsed. In an attempt to partially rectify this situation, we have included a short form (Table 3) designed to assist in recording the finds of Monument employees and visitors.

South Rim Pipeline

The construction of the proposed pipeline on the South Rim will have only minimal affect on the archeological resources. Most of the pipeline, as proposed, traverses terrain too steep to sustain substantial sites. Only one site (5MN173), a lithic area with very little depth, appears to be close to the right-of-way. At the time of our archeological survey, the survey crew did not have knowledge of the exact location of the pipeline. Therefore, it is uncertain whether or not this site lies within the path of construction. There are two other sites (5MN174 and 5MN175) which could possibly be affected, but only if

Table 3. Artifact Inventory Form

BLACK CANYON OF THE GUNNISON NATIONAL MONUMENT

Artifact Inventory Sheet for Gunnison Point Collection

Found in Monument Yes ___ No ___

Description of Location _____

Quad Map ___ Grizzly Ridge ___ Red Rock Canyon

___ $\frac{1}{4}$ of ___ $\frac{1}{4}$ of Sec. ___ Township ___ Range ___ Elevation ___

Description of Site _____

Material Collected _____

Material Observed _____

Where is Material Now? _____

_____ Package # _____

Drawings or Photographs of Site and Artifacts
(please show scale and north arrow)

Found By _____ Date _____

Recorded By _____ Date _____

the pipeline is to be constructed more than 200 meters (600 ft.) from the route indicated by Mr. Gilbert, Superintendent. Site reports and maps for these sites should be consulted for variables of location.

If any of these three sites will be destroyed by construction, it is recommended that provision be made for a minimal amount of intensive archeological investigation. This would involve no more than two to three days with a crew of three persons. A more accurate estimate is dependent upon knowledge of the exact route and limits of the right-of-way.

North Rim Development

Although there are no specific plans at this time for further development of facilities in the area of the North Rim, such development is not unlikely in coming years. We discuss the impact of this hypothetical action because the area within four-fifths of one kilometer (one-half mile) of the present North Rim campground contains the richest archeological resources within the Monument. Included here are 60% (6 out of 10) of all campsites that were found within the Black Canyon area. Two of these, 5MN182 and 5MN203, represent the most extensive habitations that were discovered on either rim. In addition, there are five other sites (four lithic areas and one source area) in this vicinity.

Future development of facilities on the North Rim would not only have a direct impact on archeological resources but also an indirect impact. Direct impact would result from construction and development activities. An indirect impact would arise from increased surface collecting from the added number of people visiting the area.

Direct impact can be largely avoided if construction locations avoid marked archeological sites.

Because the most significant archeological habitations are in this area, we recommend that any plans for substantial construction within the above mentioned area include provisions for archeological investigations.

Again, the point must be stressed that vandalism and amateur collecting can potentially destroy these sites, even when they are guarded from the path of construction. Thus, an evaluation, particularly of sites 5MN182 and 5MN208, would be valuable in obtaining information about the early occupations of the Monument area before this information is lost forever. Such an evaluation would involve about five days with a field crew of three or four persons. The juniper structure site, 5MN184, should also be considered for evaluation not only due to the threat of vandalism, but also due to the fact that the wooden structure, the main component of the site, is subject to rapid natural deterioration. Evaluation of this site would involve two days at the most with the same field crew.

The greatest potential for recovery of information concerning Black Canyon prehistory is in these sites near the North Rim campground. The destruction of these sites would be a substantial loss.

Summary

The impact of the planned construction of the South Rim pipeline is minimal. Probably only one site (5MN173) is in danger of disturbance. Complete archeological clearance cannot be given without

knowledge of the exact route of the pipeline and width of the right-of-way.

While there are no plans for the development of the North Rim facilities in the near future, it should be noted that the area of the current visitors campground includes the highest concentration of archeological remains. At the present time, the greatest adverse impact on the archeological resources is vandalism of the surface material. Until the recommended evaluation of such sites as 5MN182, 5MN184, and 5MN208 can be conducted, the situation can be improved through more conscientious efforts of the tourists and Park Service personnel.

Due to the minimal content and depth of the sites within the National Monument, we feel that none of them have a justified potential to be included in the National Register. However, under any future evaluation of the above mentioned sites or others, such a potential may be found.

APPENDIX A

LIST OF FAMILIES OF FLORAL SPECIMENS CONTAINED IN THE BLACK CANYON OF THE GUNNISON NATIONAL MONUMENT HERBARIUM*

<u>Family</u>	<u>Common Name</u>
Polypodiaceae	Fern Family
<u>Cystopteris fragilis</u> (L.) Bernh.	Bladder Fern
Equisetaceae	Horsetail Family
<u>Equisetum hyemale</u> L.	
Selaginellaceae	Selaginella Family
<u>Selaginella mutica</u> D. C. Eaton	Little Club Moss
<u>Selaginella densa</u> Rydb.	Little Club Moss
Graminae	Grass Family
<u>Poa longiligula</u> Scrin. et Williams	Bluegrass
<u>Poa fendleriana</u> (Steud.) Vasey	Bluegrass
<u>Poa secunda</u> Presl.	Bluegrass
Cyperaceae	Sedge Family
<u>Carex occidentalis</u> Bailey	Sedge
<u>Carex geyeri</u> Boott.	Sedge
<u>Carex pityophila</u> Mack.	Sedge
Liliaceae	Lily Family
<u>Smilacina racemose</u> Desf.	Wild Spikenard
<u>Zygadenus venenosus</u> S. Wats	
<u>Calochortus gunisonii</u> S. Wats	Mariposa Lily
<u>Allium acuminatum</u> Hook	Onion, Garlic
Pinaceae	Pine Family
<u>Juniperus scopulorum</u> Sarg.	Juniper
<u>Picea pungens</u> Engelm.	Blue Spruce
Salicaceae	Willow Family
<u>Populus tremuloides</u> Michx.	
Fagaceae	Beech Family
<u>Quercus gambellii</u> Nutt.	Gambel's Oak
Santalaceae	Sandalwood Family
<u>Comandrapallida</u> (L.) Nutt.	Bastard Toadflax
Polygonaceae	Buckwheat Family
<u>Eriogonum jamesii</u> Benth.	
<u>Eriogonum racemosum</u> Nutt.	
<u>Eriogonum umbellatum</u> Torr.	

*Compiled by Pat Miller and W. A. Weber, August 21, 1962

List of Floral Specimens (cont.)

<u>Family</u>	<u>Common Name</u>
Portulacaceae	Purslane Family
<u>Claytonia lanceolata</u> Pursh	Spring Beauty
Caryophyllaceae	Pink Family
<u>Stellaria jamesiana</u> Torr.	
<u>Arenaria congesta</u> Nutt.	
Ranunculaceae	Crowfoot Family
<u>Ranuncular glarerrimus</u> Hook.	Crowfoot, Buttercup
<u>Clematis hirsutissima</u> Pursh	Virgin's Bower
<u>Delphinium nelsonii</u> Greene	Larkspur
<u>Pulsatilla patens</u> (L.) Mill.	Pasque Flower
Berberidaceae	Barberry Family
<u>Berberis rapens</u> Lindl.	Barberry
Fumariaceae	Fumitory Family
<u>Corydalis aurea</u> Willd.	Corydalis
Cruciferae	
<u>Sisymbrium altissimum</u> L.	Hedge Mustard
<u>Sisymbrium elegans</u> (Jones) Payson	Hedge Mustard
<u>Sisymbrium linifolium</u> Nutt.	Hedge Mustard
<u>Sisymbrium juniperorum</u> (Payson) Harr.	Hedge Mustard
<u>Arabis gunnisonianna</u> Rollins	Rock Cress
<u>Arabis demissa</u>	Rock Cress
<u>Arabis lignefera</u> A. Nels.	Rock Cress
<u>Arabis crandallii</u> Robinson	Rock Cress
<u>Erysimum asperum</u> (Nutt.) D. C.	
<u>Thlaspi montanum</u> Auctt.	Pennygrass
<u>Descurainia richardsonii</u> Sweet	
<u>Stanleya albescens</u> M. E. Jones	
<u>Lepidium densiflorum</u> Schrad.	Peppergrass
<u>Lepidium perfoliatum</u> L.	Peppergrass
Crassulaceae	Orpine Family
<u>Sedum lanceolatum</u> Torr.	Stonecrop, Orpine
Saxifragaceae	Saxifrage Family
<u>Heuchera parvifolia</u> Nutt.	Alumroot
<u>Philadelphus microphyllus</u> A. Gray	Syringa
<u>Lithophragma tenella</u> Nutt.	
<u>Fenlera rupicola</u> A. Gray	
<u>Saxifraga bronchialis</u> L.	Saxifrage
<u>Ribes liptanthum</u> A. Gray	Gooseberry, currant
<u>Ribes cereum</u> Dougl.	Gooseberry, currant

List of Floral Specimens (cont.)

<u>Family</u>	<u>Common Name</u>
Rosaceae	Rose Family
	<u>Cercocarpus montanus</u> Raf.
	<u>Holodiscus dumosus</u> Nutt.
	<u>Peraphyllum ramoississimum</u> Nutt.
	<u>Amelanchier utahensis</u> Koehne
	<u>Geum triflorum</u> Pursh
	<u>Prunus virginiana</u>
Leguminosae	
	<u>Lupinus greenei</u> A. Nels.
	<u>Lupinus caudatus</u> Kellogg
	<u>Astragalus oophorus</u> S. Wats.
	<u>Astragalus miser</u> (Rydb.) Cronquist
	<u>Lathyrus leucanthus</u> Rydb.
	<u>Vicia americana</u> Muhl.
	<u>Trifolium gymnocarpon</u> Nutt.
Linaceae	
	<u>Linum lewisii</u> Pursh
Anacardiaceae	
	<u>Toxicodendron rydbergii</u>
Aceraceae	
	<u>Acer glabrum</u> Torr.
	<u>Acer negundo</u> , Var. <u>interius</u> L.
Rhamnaceae	
	<u>Ceanothus velutinus</u> Dougl.
Malvaceae	
	<u>Iliamna rivularis</u> (Dougl.) Greene
Violaceae	
	<u>Viola sheltonii</u> Torr.
	<u>Viola canadensis</u> L.
Cactaceae	
	<u>Echinocereus coccineus</u> Engelm.
Onagraceae	
	<u>Oenothera coronopifolia</u> T. et G.
	<u>Oenothera caespitose</u> Nutt.
	Mt. Holly
	Lupine
	Lupine
	Locoweed
	Locoweed
	Velching, Marsa Pea
	Vetch
	Clover
	Flax Family
	(Small) Erskine
	Maple Family
	Maple
	Maple
	New Jersey Tea
	Mallow Family
	Violet Family
	Violet
	Violet
	Cactus Family
	Cereus

List of Floral Specimens (Cont.)

<u>Family</u>	<u>Common Name</u>
Umbelliferae	
<u>Pteryxia hendersonii</u> Mat. et. Const.	
<u>Lisgusticum porteri</u> C. et R.	Lovage, Angelica
<u>Lomatium simplex</u> (Nutt.) MacBride	
<u>Lomatium grayi</u> C. et R.	
<u>Lomatium dissectum</u> (Nutt.) Math.	
<u>Cymopterus longipes</u> S. Wats.	
Cornaceae	Dogwood Family
<u>Cornus stolonifera</u> Michx.	Bunchberry
Polemoniaceae	Phlox Family
<u>Phlox hoodii</u> Rich.	Phlox
<u>Phlox multiflora</u> A. Nels.	Phlox
<u>Phlox longifolia</u> Nutt.	Phlox
<u>Microsteria humilis</u> (Dougl.) Greene	Phlox
<u>Ipomopsis aggregata</u> (Pursh.) V. Grant	
<u>Gilia sinuata</u> Dougl.	
Hydrophyllaceae	Waterleaf Family
<u>Hydrophyllum capitatum</u> Dougl.	Waterleaf
Boraginaceae	Borage Family
<u>Mertensia franciscana</u> Heller	Lungwort
<u>Mertensia fusiformis</u> Greene	Lungwort
<u>Lappula redowskii</u> (Hornem.) Greene	Stickseed
<u>Cryptantha gracilis</u> Osterhout	
<u>Cryptantha flavoculata</u> (A. Nels.) Payson	
<u>Cryptantha pterocarya</u> (Torr.) Greene	
<u>Lithospermum ruderales</u> Dougl. in Lehm.	Gromwell, Puccoon
Solanaceae	Nightshade Family
<u>Lycium pallidum</u> Miers	Matrimony Vine
Scrophulariaceae	
<u>Castilleja chromosa</u> A. Nels.	Painted Cup
<u>Castilleja linariaefolia</u> Benth in D.C.	Painted Cup
<u>Collinsia parviflora</u> Dougl. in Lindl.	Blue-eyed Mary
<u>Penstemon teucroides</u> Greene	Beardtongue
<u>Penstemon strictus</u> Benth. in D.C.	
Rubiaceae	Madder Family
<u>Galium asparius</u> L.	Bedstraw
Campanulaceae	Bellflower Family
<u>Campanula rotundifolia</u> L.	Bluebell, Bellflower

List of Floral Specimens (cont.)

<u>Family</u>	<u>Common Name</u>
<u>Compositae</u>	
<u>Machaeranthera canescens</u> (Pursh) A. Gray	
<u>Machaeranthera rubricaulis</u> Rydb.	
<u>Achillea lanulosa</u> Nutt.	Yarrow
<u>Solidago petradoria</u> Blake	Goldenrod
<u>Artemisia tridentata</u> Nutt.	Sagebrush
<u>Artemisia frigida</u> Willd.	Sagebrush
<u>Crepis acuminata</u> Nutt.	Hawk's-beard
<u>Wyethia arizonica</u> A. Gray	
<u>Hymenoxys acaulis</u> (Pursh) Parker	Colo. Rubber Plant
<u>Erigeron speciosus</u> (Lindl.) D.C.	Fleabane
<u>Erigeron eatonii</u> A. Gray	Fleabane
<u>Senecio mutabilis</u> Greene	
<u>Senecio integerrimus</u> Nutt.	
<u>Senecio multilobatus</u> T. et G.	
<u>Antennaria rosea</u> Greene	Cat's-foot
<u>Antennaria dimorpha</u> (Nutt.) T. et G.	Cat's-foot
<u>Antennaria parviflora</u> Nutt.	Cat's-foot
<u>Viguiera multiflora</u>	
<u>Haplopappus armerioides</u> (Nutt.) A. Gray	
<u>Arnica cordifolia</u> Hook.	

Summary:

128 species
 90 genera
 39 families

Note: No work has been done to update this list.

APPENDIX B

SITE DATA, BLACK CANYON SURVEY

Site	Location	Description	Materials	Remarks
5MN171	T50N, R8W Along Warner Point Nature Trail.	Campsite with lithic area, 25 m north-south by 50 m east-west.	4 projectile point frag- ments, flakes, grinding stone. Also package #3 Gunnison Point Collection.	Site could have been used as game drive.
5MN171-B	40 meters south of 5MN171.	Satellite lithic area of 5MN171, high concentration of lithics in 3 m area.	50 unutilized flakes, others observed.	Campfire within site may be remains of survey camp.
5MN172	SW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 34, T50N, R8W	Small lithic area, on steep slope among rocks, 2 min. diameter	1 scraper, 1 scraper fragment, 1 biface, 5 flakes.	
5MN173	SW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 5, T49N, R7W	Lithic area located near South Rim campground road, 38 m by 77 m.	1 retouched flake, 3 utilized flakes, 1 core, other flakes.	Site may be damaged by future construction and pipeline. See recommendations.
5MN174	SE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 5, T49N, R7W	Lithic area with con- centration, 18 m by 10 m.	1 projectile point frag- ment, 1 core, flakes.	Site could be asso- ciated with 5MN173 and 5MN175.
5MN175	SE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 5, T49N, R7W	Lithic area, on knoll east of 5MN173 and west of 30 m by 20 m.	1 projectile point frag- ment, 1 scraper, flakes.	Site could be asso- ciated with 5MN173 and 5MN174.
5MN176	SW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 4, T49N, R7W	Lithic area on narrow point with sheer cliffs, near road to Crystal Dam.	1 biface, flakes.	

SITE DATA, BLACK CANYON SURVEY (Cont.)

Site	Location	Description	Materials	Remarks
5MN177	NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 24, T50, R8W	Campsite on North Rim, 150 m north of campground, 90 m by 15 m.	ground stone, 1 knife fragment, numerous flakes	Site should be tested if North Rim is developed.
5MN178	NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 24, T50N, R8W	Campsite, on long wide bench near rim 50 m by 50 m.	ground stone, 1 projectile point, 1 projectile frag- ment, 4 scrapers, flakes.	
5MN179	NW $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 24, T50N, R8W	Lithic area with good con- centration and surrounding scatter, 65 m by 45 m.	2 projectile point frag- ments, 2 biface fragments, cores, numerous flakes.	
5MN180	NW $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 24, T50N, R8W	Campsite with good concen- tration of material, 60 m by 25 m.	Projectile points and fragments, ground stone, cores, bifaces, and numerous flakes.	Site should be tested if North Rim developed.
5MN181	NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 24, T50N, R8W	Lithic area with good con- centration over gentle slope, 30 m diameter.	1 core, 1 scraper, flakes.	
5MN182	SE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 24, T50N, R8W	Campsite with large area of scattered material near rim of canyon, about 400 m east of North Rim campground.	Ground stone, projectile points, other tools, numerous flakes.	If campground is to be expanded or North Rim is to be developed, site should be tested. See recommendations.
5MN183	unsectioned land T50N, R8W	Source area on talus with quartzite fragments.	Cores, numerous flakes. Untouched quartzite.	

SITE DATA, BLACK CANYON SURVEY (Cont.)

Site	Location	Description	Materials	Remarks
5MN184	SW $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 23, T50N, R8W	Lithic area with juniper structure of uncut timbers, small scatter of material, structure is 5 m by 1.75 m site is 35 m by 20 m.	Projectile point, flakes.	Site should be tested and recorded fully before timbers deter- iorate.
5MN185	NE $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 23, T50N, R8W	Lithic area with 10 m concentration of varied lithic material, scatter	Projectile points, drill fragments, bifaces, core, numerous flakes.	
5MN186	unsectioned land NW of Serpent Point. T50N, R8W	Lithic area concentrated in area 20 m in diameter.	Projectile point, 1 core utilized as chopper, bifaces, chopper, flakes.	
5MN187	NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 32, T50N, R7W	Campsite east of Kneeling Camel Point, 70 by 100 m.	2 gravers, ground stone, hammerstone, 1 obsidian flake, numerous flakes. Also package #6 Gunnison Point Collection.	
5MN188	NE corner marker of Sec. 32, T50N, R7W	Campsite located on the corner of Monument boun- dary, general lithic scatter, 70 m diameter.	Hammerstone, bifaces, scrapers, drill fragment, ground stone, numerous flakes.	
5MN194	SW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 33, T50N, R7W	Lithic area on gentle slope with small mound, 20 by 30 m.	Chopper fragment, flakes.	
5MN195	SW $\frac{1}{4}$, SE $\frac{1}{4}$, Sec. 33, T50N, R7W	Lithic area amongst out- cropping of bedrock, 50 by 40 m.	Projectile point fragment, biface fragments, 2 utilized flakes, nonutilized flakes.	

SITE DATA, BLACK CANYON SURVEY (Cont.)

Site	Location	Description	Materials	Remarks
5MN196	NW $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 4, T49N, R7W	Lithic scatter, no concen- tration, area is washed, 30 m in diameter.	1 projectile point frag- ment, 1 scraper, 1 utilized flake, 8 flakes.	
5MN197	NE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 3, T49N, R7W	Lithic area on small knoll with scatter down slope, 15 by 10 m.	Cores, chopper, projectile, point fragment, flakes.	
5MN198	NE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 3, T59N, R7W	Lithic scatter, very sparse down slope, 70 by 10 m.	Blade base, projectile point fragment, flakes	
5MN199	NW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 3, T59N, R7W	Lithic scatter along crest of low ridge, no noticeable concentrations, area is badly washed 40 by 20 m.	Core, 4 utilized flakes, other flakes.	
5MN200	SW $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 3,	Lithic scatter down a small wash, 30 by 1 m.	Blade base, 8 unutilized flakes.	
5MN201	NE $\frac{1}{4}$, SE $\frac{1}{4}$, Sec. 3, T49N, R7W	Lithic scatter with possible camp area, very sparse scatter, area is heavily washed and trampled by cattle, occupation unknown, scatter: 100 by 300 m.	1 grinding stone, cores blade base, 2 utilized flakes, other flakes.	
5MN202	NE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 23, T50N, R8W	Lithic scatter on a series of three small benches, area is washed, no concentration, 60 by 20 m.	Core, few flakes.	

SITE DATA, BLACK CANYON SURVEY (Cont.)

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Site	Location	Description	Materials	Remarks
5MN203	SW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 14, T50N, R8W	Lithic area within a 15 m concentration, amongst bedrock, some scatter down slope, 15 m in diameter.	Projectile point, blade, blade fragments, 2 utilized flakes, other flakes.	
5MN204	SW $\frac{1}{4}$, SE $\frac{1}{4}$, Sec. 15, T50N, R8W	Lithic scatter on small point overlooking canyon, area is disturbed by forest fire and subsequent wash, 45 by 20 m.	Core, scraper fragment, blades, 24 unutilized flakes.	
5MN205	SE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 22, T50N, R8W	Lithic scatter, sparse but continual along rim and out on point, occupation unknown, scatter, 150 by 50 m.	Biface fragments, flakes.	
5MN206	NE $\frac{1}{4}$, SE $\frac{1}{4}$, Sec. 22, T50N, R8W	Campsite with well concentrated area of lithics, some charred wood--possible hearth. 20 by 25 m.	Blade, numerous flakes	Information could be gained concerning the possible hearth by testing this site.
5MN207	SE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 23, T50N, R8W	Lithic area with small defined area of lithics with surrounding scatter, 25 m in diameter.	Projectile point fragment cores, blade, numerous flakes.	
5MN208	NW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 19, T50N, R7W	Campsite, 250 m southwest of visitor information station at entrance of North Rim. Heavily concentrated site along bench above drainage of Grizzly Gulch; Semi-circular area with 40 m radius.	Projectile points, blades, scrapers, cores, graver, chopper, hammerstones, ground stone, numerous flakes.	This is the most extensive site in the Monument, any development should be preceded by extensive testing. See recommendations.

SITE DATA, BLACK CANYON SURVEY (Cont.)

Site	Location	Description	Materials	Remarks
5MN209	SW $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 19, T50N, R7W	Lithic area on low ridge near Grizzly Gulch, moder- ate concentration of lithics in a poorly defined area, 30 by 15 m.	1 utilized flake, other flakes.	
5MN210	SW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 19, T50N, R7W	Lithic area with high con- centration on a low ridge near Grizzly Gulch, 20 m in diameter	Projectile point fragment, core, flakes.	
5MN211	SE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 29, T50N, R7W	Lithic area with two areas of concentration on two small adjacent ridges, About 50 m in diameter.	Ground stone fragment core, 1 utilized flake, other flakes.	
5MN212	NW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 19, T50N, R7W	Campsite directly across Grizzly Gulch, on opposite bench, from 5MN208, Site not as extensive as 5MN208, 20 by 40 m.	Ground stone, blade, unutilized flakes.	This site is possibly associated with 5MN208. Same recommendations as with 5MN208.
5MN213	NE $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 28, T50N, R8W	Rock shelter in small, 6 by 3 by 3 m cave, 3 whole and 1 partial wooden beams wedged near ceiling, covered with bat guano, no other evidence of use.	No material collected, only beams observed.	N.P.S. designation for this site is "Burial Cave" or "Crematorium", no evidence of either found. Beams positioned to suggest possible use for hanging material to enclose the shelter. Future testing of the beams would find use of site.

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ARCHEOLOGICAL INVENTORY AND
EVALUATION OF CURECANTI
RECREATION AREA

by

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NATIONAL PARK SERVICE

LINCOLN, NEBRASKA

PREFACE

During the summer and fall of 1976, the University of Colorado conducted an archeological inventory of Curecanti Recreation Area, Colorado. Funded by National Park Service Purchase Order No. PX-6115-6-0115, the purpose of the survey was to complete an archeological inventory of Curecanti Recreation Area pursuant to Executive Order 11593 and National Park Service historic preservation policies.

Dr. David A. Breternitz, University of Colorado, was the project Principal Investigator. I wish to thank him for his confidence and encouragement during the field work and his patience during the analysis and report preparation.

Field aspects of the project were under my direction. The crew, which varied in size and composition, consisted of at one time or another: Peter J. Gleichman, Betsy L. Tipps, T. Reid Farmer, Todd R. Metzger and Steve D. Emslie. Tipps and Metzger worked on the base maps and analyzed the stone tools under the supervision of Kellie Masterson. Bertrand A. DePeyer and Wayne Nelson processed the photographic materials. Typing chores were done by Louisa Flanders, Betsy Tipps, Claudia Shaffer and Sharon Rezac. Susan Breternitz and Melodie Tune helped with the reproduction of maps. They were an enjoyable group to work with and without their assistance this report would be somewhat less complete and the months of work considerably less rewarding. Their assistance is greatly appreciated.

In addition, I wish to thank the Midwest Archeological Center staff, especially Drs. Calabrese and Anderson, for its support during completion of this report.

CHAPTER 1

INTRODUCTION

Curecanti Recreation Area in western Colorado consists of three contiguous reservoirs (Morrow Point Reservoir, Blue Mesa Reservoir, Crystal Reservoir) and adjacent lands along the Gunnison River (Figure 11). The purpose of these reservoirs is to provide hydroelectric power and recreational opportunities. The Bureau of Reclamation administers the power distribution from the Curecanti reservoirs and dams, while the National Park Service administers the area as a recreational unit.

In 1976 the National Park Service contracted with the University of Colorado to conduct an archeological inventory of all lands within Curecanti Recreation Area. This inventory was to be used as an aid in managing cultural resources in Curecanti and as a basis for evaluating the archeological resources in relation to western Colorado prehistory. The following report is a summation of the data gathered during the summer and fall of 1976. More detailed descriptions of sites and artifacts as a supplement to this report are on file at the Midwest Archeological Center, National Park Service, Lincoln, Nebraska.

Environment

Geomorphology and Geology

Curecanti is located in western Colorado between the Cochetopa Hills along the continental divide to the east and the Colorado Plateau region to the west. The Gunnison River has cut deep gorges in several

ARCHAEOLOGICAL RESOURCES OF THE CURECANTI RECREATION AREA

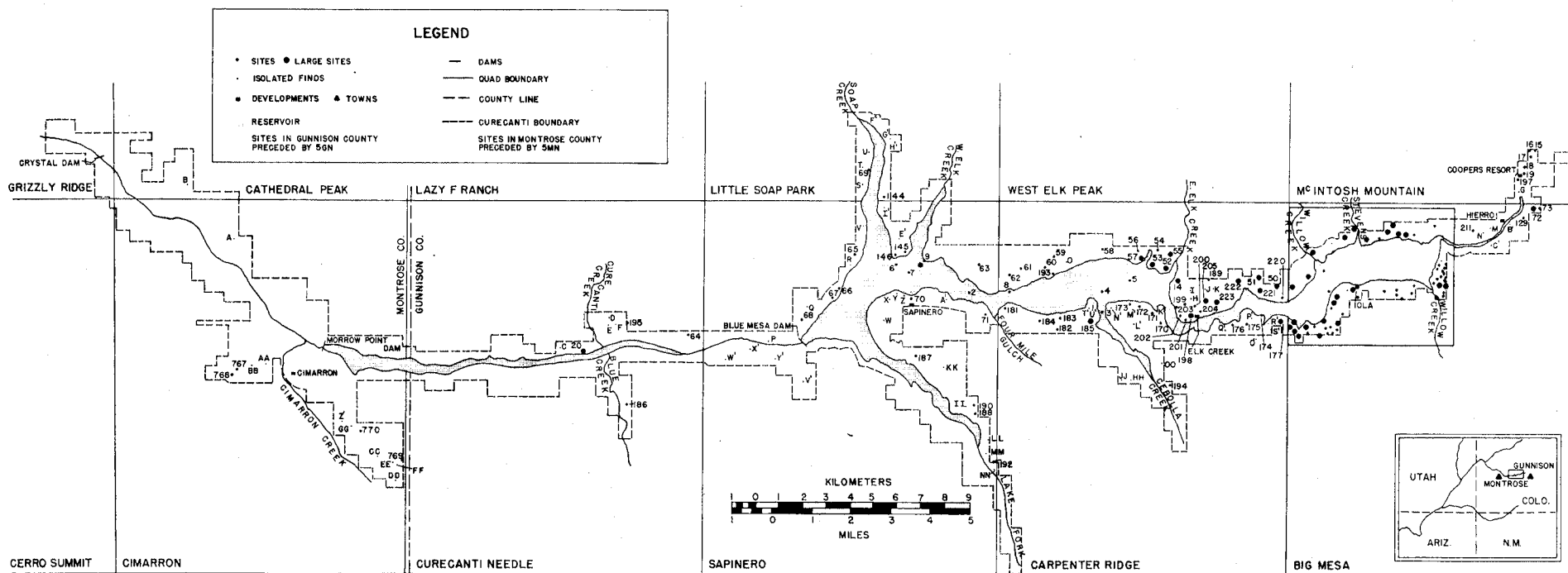


FIGURE 11

ARCHAEOLOGICAL RESOURCES OF

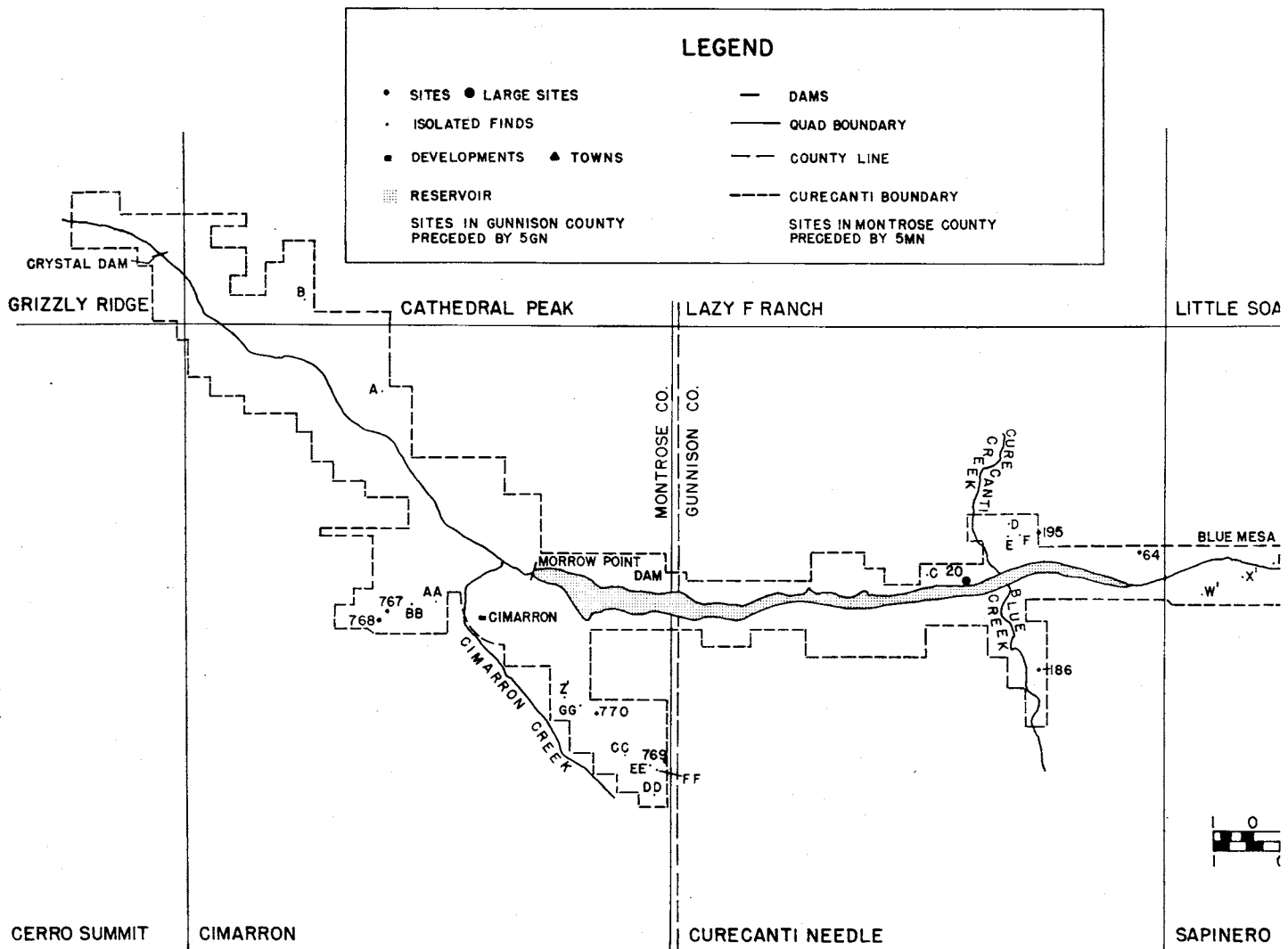
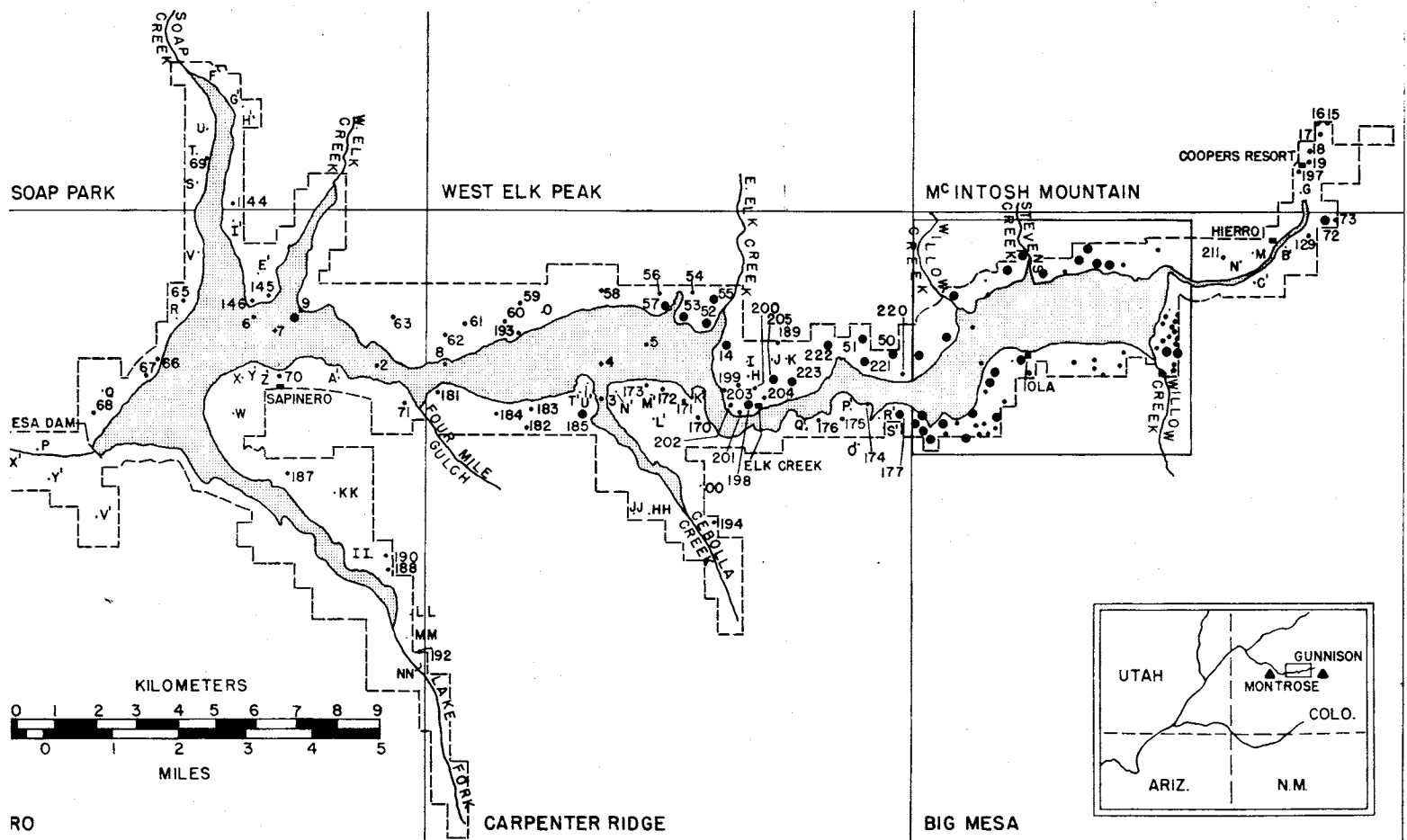


FIGURE 11

OF THE CURECANTI RECREATION AREA



sections of an ancient Gunnison River valley. In other areas broad valley floors were present along the river. This original topography is not evident today. The reservoirs have filled the canyons and give a false impression of the local topography.

In several locations the underlying strata are exposed. These exposures reveal a foundation of pre-Cambrian metamorphics overlain by Morrison, Dakota and Mancos Formation sedimentary rock. Erosion removed some of the sedimentary outcrops before volcanics in the area deposited West Elk Breccia across the area. Pleistocene gravels have washed in on the floodplains. All types of rock (sedimentary, metamorphic, intrusive and extrusive igneous) are found within the study area (Lister 1962:3-4; Oetking et al. 1967).

Soils across most of the area are shallow and mixed with weathering bedrock. A few local areas have aeolian deposits or alluvium of unknown depth.

Climate

Curecanti Recreation Area lies between the towns of Gunnison (to the east) and Montrose, Colorado (to the west). The United States Weather Bureau reports for Montrose, a town at 5,830 feet elevation, an average annual precipitation of 9.08 inches and an average annual temperature of 49.5°F. Upstream from Curecanti National Recreation Area, Gunnison, at 7,694 feet elevation, is reported to average 10.59 inches of moisture annually with a 40.1°F. average annual temperature (Woodbury 1962:15). A late spring and early summer dry season is broken by midsummer to early fall thunderstorms. The greatest precipitation occurs in August (National Park Service 1976:16). The growing season is short, and the weather changes quickly and is often severe.

Flora and Fauna

The biotic communities of Curecanti were extensively studied during the initial construction phase of the three reservoirs in 1961. The following flora and fauna sections of this paper are extracted from the published reports resulting from this work (Woodbury, Durrant and Flowers 1962; Woodbury, Durrant, Flowers, et al. 1962).

The ecological communities may be divided into three zones classified by topography. These are streamside zones, terrace zones, and hillside, talus and upland zones. The plant communities largely differ because of the type of water available. The streamside communities have generous soil moisture due to percolating water levels along waterways. The terrace zones receive capillary soil moisture in addition to precipitation. The hillside, talus and upland zones are dependent upon rain and snowfall and a small amount of runoff.

Streamside zones reflect the plentiful moisture and the effect of fluctuating, moving water as an ecological perturbation by flooding. Trees are predominantly cottonwoods, although in the side canyons Douglas fir and Blue spruce are present. A variable understory of shrubs is common. A low herbaceous group of plants is found on the gravel bars and floodplains.

The terrace zones are usually treeless, with occasional conifers sporadically taking root. By far the most common plants in this community are sagebrush, rabbitbrush, saltbush and grasses. Occasionally a few herbs are found.

The talus slope, hillside and upland zones are dominated by conifer trees, including Mountain Red juniper, Blue spruce, Pinyon

pine, Ponderosa pine and Douglas fir. Pinyon pine is found only downstream from the Morrow Point area. Shrubs form an understory of scrub oak, service berry, mountain mahogany, chokecherry, currants, rabbitbrush and sage. Grasses and forbs are scattered throughout.

The avifaunal resources of Curecanti Recreation Area are varied. Of the 165 species recorded in 1961, 71 are considered permanent. Species present today that were probably used aboriginally are ducks, hawks, eagles, falcons, grouse, ptarmigans, owls and flickers.

Mammals observed, collected or reported represent 83 species. The 13 species of rodents, cottontail, jackrabbit, elk and mule deer were probably eaten by the prehistoric populations of the area. Before their decimation, bison, antelope, mountain sheep and bear were found in the area and were also utilized. The Gunnison River is known as an excellent trout stream and may have been fished prehistorically, although evidence is lacking.

CHAPTER 2

CULTURAL CHRONOLOGY OF THE CURECANTI AREA

Curecanti Recreation Area is located in a geographical area whose archeological remains have been overshadowed by the extensive resources in the nearby Anasazi territory. Few archeologists have been interested enough to study this region with the vigor afforded the more spectacular areas because intermountain sites are usually open and limited in extent, seldom are of demonstratable antiquity and lack aesthetically pleasing pottery and architecture. Although lacking spectacular remains, the archeological resources in the Curecanti area offer the opportunity for studying the cultural dynamics of hunting and collecting societies as in any other archeological district. With future research in the area perhaps this may be accomplished.

The following is a summation of the cultural history of western Colorado as it pertains to Curecanti archeology.

Paleo-Indian Stage

Llano Occupation

The Llano complex, dating from 9000 B.C., is poorly represented in western Colorado (Stiger and Carpenter 1975; Jennings 1968). Although several amateur collectors have found Clovis points in the

area, all of them are isolated finds and are not from well defined sites. Consequently, their significance is difficult to evaluate. Recently, however, a single Clovis point was found a few miles from the downstream end of Curecanti Recreation Area on a lithic scatter site (Carpenter et al. 1976). The lithic debitage was predominantly of the same material (gray quartzite) as the projectile point and a scraper recovered from the site. The site is in an open area in shrubland, overlooking a small spring.

The Llano complex is generally considered to represent small bands of hunter-gatherers preying on mammoth when possible and other game when available (Jennings 1968:92). Remnants of New World mammoth are found mainly in the plains east of the Rocky Mountains, although mammoth remains have been reported from the Gunnison Valley (Hurst 1943:251). From the data on hand, we can be relatively certain that man was present in the Curecanti area by 9000 B.C.

Folsom Occupation

The Folsom Complex is well represented in the Curecanti area. Diagnostic Folsom projectile points have been located as isolated finds and associated with surface sites. Wormington (1964:30) reports two points from Montrose County. One of these came from "6 miles east of Cimarron, Colorado" (Wormington 1955:120), which would put it on the north edge of Fitzpatrick Mesa in Curecanti Recreation Area. As discussed later in this report, this area was not surveyed because it is inaccessible.

Huscher (1939) found two Folsom projectile points on the Uncompahgre Plateau. The Black Canyon of the Gunnison National Monument Report of 1939 mentions that two Folsom points were found near Kneeling Camel Point. Reportedly the points were sent to the Denver Museum of Natural History. A field inspection of the site followed. However, there is no record of these actions in the museum files or monument reports.

More recently, two sites were discovered that yielded Folsom material. One site is located a few miles south of Curecanti. A site record is on file with the Colorado State Archeologist and the material is available for study. Some of the collected material is illustrated (Colorado Archeological Society 1977:7).

The second site was found by Alan Reed, Staff Archeologist for the State Highway Department. This site is located near Cimarron, Colorado, about one mile from the Curecanti boundary. The site overlooks a spring and the Cimarron Valley to the south (Alan Reed, personal communication) and consists of a surface lithic scatter which yielded a diagnostic paleo-point.

The Folsom complex was originally defined on the high plains. Its material culture is very similar to that of the earlier Llano complex, with the substitution of Folsom style points, the addition of grinding implements and a higher frequency of sites (Jennings 1956). The association of Folsom man and extinct bison is well known. Most Folsom material dates between 9000 B.C. and 7000 B.C.

Hurst reports extinct bison remains from the Gunnison Valley (Hurst 1943:251). Modern bison remains were found by Gunnison during the 1850s in the upper Gunnison River drainage (Levy 1968:32).

Plano Occupation

The latest Paleo-Indian complex is the Plano. Projectile point styles show a range not found in earlier occupations. Jimmy Allen, Eden Scottsbluff (including so-called "Yuma"), Midland Plainview, Hell Gap and Dalton points are reported from the area (Stiger and Carpenter 1974; Hurst 1943:251; Tom Euler, personal communication; Carpenter et al. 1976; Martin 1977:76; Colorado State Archeological files). Excavated sites on the Plains with these projectile point styles date from 7000 B.C. to 5000 B.C. (Jennings 1968).

The Plano occupation differs from the preceding Folsom occupation, with more diverse types of game hunted, more ground stone tools and a greater frequency of sites.

Archaic Stage

Whereas the earlier Paleo-Indian stage is characterized by economic concentration on animal resource exploitation with minor importance placed on plant processing, the Archaic is marked by realignment of environmental exploitation. This change is in degree, not kind. In other words, from Llano to early Archaic times man gradually turned from a seemingly singular dependence on animal foods to the utilization of a wider variety of low priority food items. Low priority foods are those that require high labor costs to harvest and process and/or those that are low in terms of preference (Cohen 1977:36). The shift is suggested throughout the Plano stage by increasing frequencies of ground stone tools. By the beginning of the Archaic, the high frequency and density of ground stone tools suggest a heavy dependence on floral exploitation supplemented by established hunting patterns.

Most of the sites in Curecanti represent Archaic occupation. These sites date from around 5000 B.C. to historic times with the 1880 expulsion of the Utes. In the absence of pottery, radiocarbon dates and other horizon markers, dating is restricted to the comparison of projectile point types with material from dated sites elsewhere in the west.

The following generalized projectile point chronology is based on Tipps' (1976:21-31) discussion with Joe Ben Wheat, University of Colorado Museum, and reported dated projectile point types. All projectile point types discussed, except Duncan-Hanna, were found in Curecanti.

The earliest Archaic stage projectile point style found in Curecanti is dated at 5000 B.C.-4000 B.C.. These points are similar to the Duncan-Hanna points found in Black Canyon of the Gunnison National Monument (Stiger and Carpenter 1975).

From 5000 B.C. to approximately A.D. 700 projectile points are predominantly large, corner-notched types. At about A.D. 700 the frequency of smaller corner-notched points increases. This is most likely a reflection of the introduction of the bow and arrow (Buckles 1971:1221).

After the transition from larger projectiles to smaller projectiles and by A.D. 1000, side-notch projectile points appear and increase in popularity until historic times. This change from corner-notch to side-notch projectile point types is remarkably consistent with similar changes at roughly the same time in the Anasazi area to the southwest (Hayes and Lancaster 1975:144-145), along the front range of

Colorado (Nelson 1967, 1969, 1970, 1971; Leach 1966) and along the continental divide of northern Colorado (Benedict 1975a, 1975b).

In cultural complexes in the surrounding areas, such as the Pueblo in the southwest and the Woodlands on the front range, the increase in use of lower priority plant foods includes the eventual development of incipient horticulture. In the early centuries of the Christian era, gradual increase in dependence on domesticated foods appears to occur in areas where incipient farming is successful. It is apparent that these farmers were in contact, either directly or indirectly, with the intermountain area since pottery, corn and other distinctive trade items are occasionally found on sites close to Curecanti (Martin 1977:81; Pearsall 1939; Hurst 1939; Joe Lischka, personal communication; Husted 1964).

Historic Stage

The only historic Indian group known from the Curecanti area is the Ute (Buckles 1968). The first written description of the Utes in the region is in the 1776 journal of Fathers Escalante and Dominguez (Bolton 1959), reporting their travels through the Spanish frontier territory. Although the Fathers passed to the west of Curecanti, they report the Utes to the east in the area of Curecanti. Types of artifacts indicative of an historic American Indian site are European trade items and/or remnants of wooden architecture (wickiups) in addition to Late Archaic projectile points.

Soon after the first European explorations, the Gunnison drainage became an east-west travel route for Spanish, and later, American traders and travelers (Hafen and Hafen 1954:100-101). When the

territory was ceded to the United States by the Treaty of Guadalupe Hidalgo and the Utes were removed, the area opened up to the railroads, ranchers and tourists. Evidence of modern occupation in Curecanti abounds. Detailed histories of the region and Curecanti Recreation Area proper may be found in Schroeder (1953, 1965), Buckles (1968), Rose (1968) and Levy (1968).

CHAPTER 3

PREVIOUS ARCHEOLOGICAL WORK IN CURECANTI RECREATION AREA

Before Curecanti Recreation Area existed, C. T. Hurst and his students at Western State College in Gunnison did some work in the area (Schroeder 1953:5). However, except for a single published article, his work is not reported. The only record of this research is passing mention of individuals working near now inundated towns (Hurst n.d.). The only published report (Hurst and Hendricks 1952) describes two sites that were later recorded by Lister (1962) as 5GN7 and 5GN2.

Professor Robert Lister and students from the University of Colorado surveyed the Blue Mesa Reservoir basin in 1962. Although the primary purpose of the survey was to determine cultural resources in the reservoir basin, two of the 10 recorded sites are above the high water line (Lister 1962). Neither excavations nor gridded surface collection were made at these sites.

Two years later William Buckles, who had worked with Lister in 1962 as a member of the Blue Mesa survey crew, did a complete survey of the area to be inundated by the Morrow Point Reservoir (Buckles 1964). No cultural material was located. The third reservoir basin created by Crystal Dam, was evaluated by University of Colorado Professor David A. Breternitz and a student crew. Again, cultural resources were not found (Breternitz 1974).

The last archeological investigations prior to this study was by Adrienne Anderson (1975), Midwest Archeological Center, Lincoln, Nebraska. Anderson spent one day checking the Pine Creek area at the head of Morrow Point Lake during a preconstruction inventory. She also located an isolated mano in a stand of pinyon trees at a proposed picnic site at Hermits Rest near the Morrow Point Dam.

In summary, the previous investigations resulted in two published articles (Hurst and Hendrick 1952; Lister 1962), 10 sites recorded (eight now under water), and one isolated artifact (Anderson 1975).

CHAPTER 4

FIELD PROCEDURES - 1976 UNIVERSITY OF COLORADO SURVEY

The archeological inventory at Curecanti Recreation Area was accomplished by crew members walking in sweeps with intervals varying from 10 to 50 meters, depending on landform. Likely site locations (areas near springs, benches and sheltered spots) were intensively evaluated.

When artifacts were found, the crew stopped and investigated all surrounding areas. If artifactual material was found in a concentration of 10 or more flakes in a 20 meter diameter area, then that locality was designated an archeological site. If additional material was not found, then the artifact or artifacts were considered an isolated artifact (I.A.).

Isolated artifacts and sites were located on U.S. Geological Survey topographic maps in the field. Due to the rugged topography, field locations could not be plotted accurately without the use of surveying equipment to shoot azimuths. Field notes and photos were taken to describe sites and topography. Subjective "grab sample" collections were made of representative lithic materials and all observed flaking tools. Site forms were written and sketch maps were drawn within two months after the field work was finished to help relocate sites (Stiger 1977). Subsurface testing was not done.

During the course of the survey, a few areas were not thoroughly evaluated because of their relative inaccessibility. The former areas are National Park Service lands on Fitzpatrick, Dillon, and Poverty Mesas and within the Black Canyon of the Gunnison.

CHAPTER 5

ARCHEOLOGICAL RESOURCES OF CURECANTI RECREATION AREA

American Indian

The data recovered from the original survey are presented in an unpublished volume and are on file at the Midwest Archeological Center, Lincoln (Stiger 1977). This volume includes site locations, maps, site descriptions, photos and an inventory of all material collected. A short summary of this information is contained in Appendix A of this report. Tool types were defined through functional analysis (Tipps 1976).

Euro-American

Only one pure Euro-American site was recorded during this survey. It is 5GN17, a petroglyph on a boulder, which reports the name D. Byler and either a date "88" or the initials "BB." Since the site was at the location of a U.S. Geological Survey survey marker, we originally thought it might be a claim corner marker. A check of county records failed to reveal the name of Byler around 1888.

Three structures in Curecanti are listed on the National Park Service's List of Classified Structures. A trestle of the Denver and Rio Grande narrow gauge railroad at Cimarron below the Morrow Point Dam and the East Portal of the Gunnison River Diversion Tunnel have both

been recommended for preservation. Both are interpreted by the National Park Service. The trestle is on the National Register of Historic Places and the tunnel is a National Engineering Landmark. The third structure listed is the Cooper Ranch, an 1880s homestead and later a famous sportsman's resort.

Several other historic sites in the Recreation Area were encountered, but were not recorded during this survey. These include a cabin on West Elk Creek, a series of foundations at East Elk Creek and at Hierro and irrigation ditches in several locations.

CHAPTER 6

INTERPRETATION OF THE AMERICAN INDIAN OCCUPATION OF CURECANTI RECREATION AREA

Few projectile points were found in Curecanti Recreation Area. For this reason, no attempt was made to use them for dating specific sites where they do occur. Their value to this survey is in that taken as a group, with the data from nearby sites, they demonstrate that prehistoric populations were in the area by at least 9000 B.C. If numbers of projectile points were reliable indicators of population size, then a population increase through time could be suggested. This, unfortunately, is too simplistic, as there are differences between traditional morphological and functional classes, subsistence bases at different times and different places and the surface collecting practices of local collectors. For all datable artifacts, there are increasing numbers through time. Whether this is due to changes in population size, technology or site collection is unknown. A number of models could be suggested, but are beyond the scope imposed by funding limitations of the project.

The settlement pattern in Curecanti reflects the subsistence base of the Indians who used the area. Other workers in the region have found that there is a positive correlation between site density and pinyon-juniper forest density (Martin 1977:86, Buckles 1971:1197). This is understandable, since pinyon nuts were a highly favored food

item among the historic Ute. They are easy to collect and are a high calorie food. However, pinyon trees do not produce every year and large areas of pinyon forest per person are needed. In Curecanti, pinyon trees are only found west of the Morrow Point area. Notation that pinyon exist east of Blue Mesa Dam appears on several Curecanti archeological site reports (Part II of this report on file at the Midwest Archeological Center, Lincoln); these are incorrect. Pinyon camps are absent in the eastern area of Curecanti.

Martin (1977), working in the Uncompahgre Environmental Area, found few sites in the valley bottoms. In this area the valley bottoms are narrow, less than 150 meters wide. Buckles, however, surveyed several wider valley areas near the Uncompahgre Plateau and found more sites in the lower areas. These sites are later in date and are "denser perhaps than the sites in the forests higher on the Plateau" (Buckles 1971:1197).

In the dry, broad valleys of Curecanti, Indian ricegrass (Oryzopsis hymenoides) is a major specie (11th in order of coverage, Woodbury et al. 1962:36). This grass has large grains and was an aboriginal food source, as suggested by the name. Grasses are good producers of calories when considered on a per acre basis, but they require a relatively high labor input for caloric return.

Vegetal processing equipment (grinding tools) and hearths found in Curecanti that were used for food processing represent an investment of labor in non-portable capital. An investment of this type probably means that a site was revisited or occupied for longer periods of time than where these tools and remains are absent.

Vegetal processing sites are evident at Curecanti. When plotted on a topographic map, all have the following in common: (1) a water source with easy access, (2) location near a level, open valley bottom, and (3) a higher elevation overlooking a potential gathering area. The one exception is 5GN195. This site, near a spring, overlooks a high terrace instead of a valley bottom.

The sites that represent higher investments of labor appear to be related to grass collecting. In Buckles' research area, valley sites are more recent in date and appear "to be related to changes in technology (and) economic activities . . ." (Buckles 1971:1197). Since they probably also represent larger populations, these sites seem to suggest a situation of population pressure generating a more efficient subsistence base, in terms of productivity per acre, at the expense of leisure time (Cohen 1977).

CHAPTER 7

RECOMMENDATIONS

Recommendations for further work needed to preserve archeological sites in Curecanti are provided for each individual site in Part II of this report on file at the Midwest Archeological Center, Lincoln.

Research that should be conducted in the following areas:

- (1) Subsistence. Those sites with hearths should be tested and sampled using techniques for the recovery of organic material reflecting utilized food resources. These data will allow testing of the hypothesis that the Curecanti basins were prehistoric grass gathering grounds.
- (2) Dating. Hearths provide an opportunity to obtain charcoal for radiocarbon dating to test the hypothesis that most of the grass gathering is a late prehistoric adaptation.
- (3) Occupation. Many of the small lithic scatters may yield information on flaking technology and enable the development of a chronology of short term occupations in Curecanti. This will permit segregation of sites as parts of the entire prehistoric settlement system.

The archeological sites in Curecanti appear to represent prehistoric activities different from those in nearby areas. These sites will be more important when studied as a group for each site must be

considered as only part of the entire settlement system. As of yet there are insufficient data to determine the eligibility of many of the archeological sites in Curecanti Recreation Area for nomination to the National Register. Further research is necessary to make the determinations of eligibility that are required by existing historic preservation legislation.

CHAPTER 8

SUMMARY

Curecanti Recreation Area, located in the Colorado intermontane area, was surveyed in accordance with Executive Order 11593 and National Park Service historic preservation policies. One hundred and thirty archeological sites were located within the Recreation Area.

Curecanti Recreation Area is a grass and sage-covered, broad river valley area. Pinyon pine is virtually nonexistent within the Recreation Area.

Archeological sites in the region demonstrate prehistoric occupation for at least the last 11,000 years. However, there are increasing numbers of later, time-sensitive artifacts, perhaps suggestive of population growth. Because of the lack of pinyon, it is proposed that the Curecanti area was used as a grass gathering ground. Due to the economics and technology involved, grass gathering is probably a late adaptation required by population pressure. Further research is needed to answer some of these archeological questions.

APPENDIX A

SITE DATA, CURECANTI RECREATION AREA SURVEY

Site	Location	Description	Materials Collected ¹	Remarks
5GN 1 Area A	SE $\frac{1}{4}$ and SW $\frac{1}{4}$ of SW $\frac{1}{4}$ Sec. 30, T49N, R2W	Quarry and workshop	20 Nonutilized flakes, 7 QE 13 FQE, 7 Utilized flakes 6 FQE 1 VFQE	Recorded by Lister. Collected by arrowhead hunters.
Area B			14 Nonutilized flakes, FQE 2 Utilized flakes, FQE 2 Nonutilized cores 1 QE 1 VFQE	
Area C			40 Nonutilized flakes 4 QE 35 FQE 1 CT 6 Utilized flakes, FQE 1 Scraper, QE 1 Blank, QE 1 Blank, QE	
Area D			21 Nonutilized flakes 7 QE 7 QE 13 FQE 1 CT 5 Utilized flakes, FQE	
5GN 10	NW $\frac{1}{4}$ of SW $\frac{1}{4}$ Sec. 30, T49N, R2W	Open campsite and workshop	No collection	Recorded by Lister.
5GN 14	SE $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 27, T49N, R3W	Lithic scatter 40m E-W X 20m N-S	54 Nonutilized flakes, 53 FQE 1 CT 5 Utilized flakes, 4 FQE 1 CT	Highly disturbed by historic developments.
5GN 15	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 7, T49N, R1W	Lithic scatter 50m E-W X 60m N-S	65 Nonutilized flakes, 4 QE 38 FQE 22 VFQE 3CT 1 knife QE 1 Blank, QE	Disturbed by historic developments.

Site	Location	Description	Materials Collected ¹	Remarks
5GN16	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 7, T49N, R1W	Lithic scatter with ground stone 150m E-W X 75m N-S	78 Nonutilized flakes, 8 QE 51 FQE 3 VFQE 16CT 17 Utilized flakes 2 VFQE 12 CT 2 Scrapers, QE 2 projectile points 1 VQE 1 QE 1 Knife, FQE 1 Blank, FQE 1 Grinding stone FE 1 Chopper, QE	Undisturbed except for powerline. Possible stone alignment.
5GN 17	NW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 18, T49N, R1W	Historic petroglyph, 75cm X 60cm	No collection	
5GN 18	NE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 13, T49N, R2W	Lithic scatter, with ground stone, 20m diameter	18 Nonutilized flakes, 1 QZ 4 QE, 10 FQE 1 VFQE 1 QP (quartzite porphory) 2 Grinding stones 1 SS 1 VB (vesicular basalt) 1 Grinding slab, RE 1 Core, QE	Cut by road and powerline.
5GN 19	NE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 13, T49N, R2W	Lithic scatter with ground stone, 25m E-W X 40m N-S	58 Nonutilized flakes, 2 QE 50 FQE 6 CT 4 Utilized flakes 1 QE 2 FQE 1 VFQE 1 Hammerstone, QE	Road cut on site.
5GN 20	NW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 3, Area A T48N, R5W	Lithic scatter, 50m N-S X 30m E-W	13 Nonutilized flakes 4 QE 6 FQE 30 VFQE 6 Utilized flakes 1 QE 3 FQE 2 VFQE 3 Nonutilized cores 1 QE 1 FQE 1 VFQE 1 Hammerstone, FQE	Eroding downslope.
Area B			17 Nonutilized flakes 8 QE 7 FQE 2 VFQE 2 Utilized flakes, FQE	

Site	Location	Description	Materials Collected ¹	Remarks
5GN 50	SE & SW of SE $\frac{1}{4}$ of Sec. 25, T49N, R3W	Lithic scatter, possible quarry 100m N-S X 500m E-W	24 Nonutilized flakes 7 QE 17 FQE 1 Utilized flake 1 Chopper, CT 1 Scraper, QE	Undisturbed.
5GN 51	NE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 25, T49N, R3W	Lithic scatter 220m N-S X 200m E-W	20 Nonutilized flakes 2 QE 18 FQE 2 Utilized flakes 17 QE 1 CT 3 Blanks, FQE	Undisturbed but unconcentrated.
5GN 52	SW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 27 T49N, R3W	Lithic scatter with ground stone, 200m E-W X 100m N-S	19 Nonutilized, FQE 1 Mano FEPY	Cut by highway. Partially destroyed by gravel pit.
5GN 53	SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 28, T49N, R3W	Lithic scatter, 210m N-S X 125m E-W	23 Nonutilized flakes 22 FQE 1 CT 11 Utilized flakes 7 QE 4 FQE 2 VFQE 4 CT	Eroding and collected.
5GN 54	NW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 27 T49N, R3W	Lithic scatter 25m N-S X 30m E-W	16 Nonutilized flakes, FQE 3 Utilized flakes, FQE 1 Nonutilized core, QE	Eroding.
5GN 55	NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 27, T49N, R3W	Lithic scatter 200m N-S X 100m E-W	10 Nonutilized flakes 2 FQE 6 VFQE 2 CT 3 Utilized flakes, FQE	Cut by irrigation ditch.
5GN 56	NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 28, T49N, R3W	Lithic scatter 25m E-W X 15m N-S	19 Nonutilized flakes 1 QE 18 FQE 4 Utilized flakes FQE 1 Nonutilized core, VFQE	Undisturbed.
5GN 57	NW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 28, T49N, R3W	Lithic scatter 225m N-S X 80m E-W	23 Nonutilized flakes, FQE 4 Utilized flakes 1 QE 3 FQE 1 Nonutilized core, FQE	Bisected by highway.
5GN 58	NW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 29 T49N, R3W	Lithic scatter 15m diameter	13 Nonutilized flakes 1 QE 12 FQE 5 Utilized flakes, FQE 1 Nonutilized core, QE	Eroding. Cut by powerline. Historic trash present

Site	Location	Description	Materials Collected ¹	Remarks
5GN 59	NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 30, T49N, R3W	Lithic scatter 25m in diameter	14 Nonutilized flakes 1 QE 13 FQE 2 Utilized flakes, VFQE	Cut by irrigation ditch.
5GN 60	SE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 30, T49N, R3W	Lithic scatter, 6m N-S X 5m E-W	13 Nonutilized flakes 12 FQE 1 VFQE 7 Utilized flakes 6 FQE 1 VFQE	Undisturbed and well concentrated.
5GN 61	NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 25, T49N, R4W	Lithic scatter, 20m NW-SE X 10m SW-NE	12 Nonutilized flakes 11 FQE 1 CT 8 Utilized flakes 3 FQE 1 VFQE 3 CT 1 Chopper, CT	Undisturbed.
5GN 62	NW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 25, T59N, R4W	Lithic scatter, 40m 40m N-S X 10m E-W	10 Nonutilized flakes, 5 FQE 5 CT 5 Utilized flakes 1 FQE 4 CT 1 Hammerstone, FQE 1 Blank, CT 1 Scraper, CT	Slightly eroding.
5GN 63	SW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 26, T49N, R4W	Lithic scatter, 50m N-S X 30m E-W	15 Nonutilized flakes, 13 QE 2 FQE 1 Nonutilized core, FQE	Undisturbed.
5GN 64	T48N, R5W	Lithic scatter, 35m E-W X 25m N-S	13 Nonutilized flakes, 11 FQE 1 VFQE 1 CT 3 Utilized flakes 1 QZ 7 FQE 1 CT 1 Nonutilized core, QE	Eroding. Trampled by livestock.
5GN 65 Area A	SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 29 T49N, R4W	Lithic scatter, 15m diameter	10 Nonutilized flakes, 7 FQE 2 VFQE 1 CT 3 Utilized flakes 2 FQE 1 VFQE 1 Blank, FQE 1 Scraper, CT 1 Nonutilized core, QE	Eroding.
Area B		20m diameter	22 Nonutilized flakes, 15 FQE 7 CT 5 Utilized flakes, FQE 1 Projectile point, VFQE 1 Blank, VFQE	

Site	Location	Description	Materials Collected ¹	Remarks
5GN 66	SW¼ of SE¼ of Sec. 29, T49N, R4W	Lithic scatter and ground stone 150m N-S X 120M E-W	34 Nonutilized flakes 3 Quartz crystalline 28 FQE 2 VFQE 1 CT 5 Utilized flakes 1 FQE 3 VFQE 1 CT 1 Grinding slab, RE	Undisturbed.
5GN 67	NE¼ of NW¼ of Sec. 32, T49N, R4W	Lithic scatter 25m N-S X 10m E-W	19 Nonutilized flakes 2 QZ 16 FQE 1 VFQE 3 Utilized flakes 2 FQE 1 CT	Eroded and collected.
5GN 68 Area A	NW¼ of SE¼ of Sec. 31 T49N R4W	Lithic scatter 40m diameter	14 Nonutilized flakes 13 FQE 1 VFQE 2 Utilized flakes 1 FQE 1 VFQE	Partially bulldozed and cut by jeep road.
5GN 68 Area B	NW¼ of SE¼ of Sec. 31, T49N, R4W	Lithic scatter, 50m NW-SE X 20m NE-SW	8 Nonutilized flakes, FQE 2 Nonutilized cores 1 RE 1 QE	
5GN 69	NE¼ of NW¼ of Sec. 16, T49N, R4W	Lithic scatter, 70m N-S X 40m E-W	11 Nonutilized flakes 9 FQE 1 Projectile point, CT	Undisturbed.
5GN 70	NE¼ of NW¼ of Sec. 34, T49N, R4W	Lithic scatter, 30m N-S X 15m E-W	10 Nonutilized flakes, 6 FQE 2 VFQE 1 CT 1 RE 3 Utilized flakes 2 VFQE 1 CT	Undisturbed.
5GN 71	SW¼ of NW¼ of Sec. 36, T49N, R4W	Lithic scatter, 30m D-W X 30m N-S	8 Nonutilized flakes 7 FQE 1 VFQE 3 Utilized flakes, FQE	Undisturbed but sparse.
5GN 72	NW¼ of NW¼ of Sec. 19, T49N, R1W	Lithic scatter with hearth and ground stone, 200m N-S X 50m E-W	59 Nonutilized flakes 19 QE 40 FQE 5 Utilized flakes 2 VFQE 3 CT 1 Projectile point, VFQE 1 Grinding stone, SS	Cut by dirt road and collected.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 73	NW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 19, T49N, R1W	Lithic scatter, main concentration is 30m diameter	26 Nonutilized flakes 2 QE 24 FQE 3 Utilized flakes 1 FQE 1 VFQE 1 CT 1 Scraper, QE	Historic trash present and eroding.
5GN 129	SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 24, T49N, R2W	Lithic scatter 10m E-W X 15m N-S	23 Nonutilized flakes, FQE 4 Utilized flakes, FQE	Eroded.
5GN 130	SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 27, T49N, R2W	Lithic scatter with ground stone 100m E-W X 30m N-S	24 Nonutilized flakes 23 FQE 1 Serpentine 5 Utilized flakes 1 FQE 4 VFQE 1 Projectile point, QE 2 Knives 1 CT 1 QE 2 Scrapers 1 QE 1 FQE	Eroded
5GN 131	SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 27, T49N, R2W	Lithic scatter with ground stone 200m E-W X 90m N-S	31 Nonutilized flakes 30 FQE 1 CT 3 Utilized flakes 1 QE 2 CT 1 Grinding stone, SS 2 Blanks, QE 1 Scraper, QE	Collected, eroded, historic trash present, cut by road.
5GN 132	SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 27, T49N, R2W	Lithic scatter 13m N-S X 25m E-W	19 Nonutilized flakes 9 QE 8 FQE 2 CT 4 Utilized flakes 2 QE 2 CT 2 Knives 1 Scraper, QE 1 Blank, QE	Collected and eroded.
5GN 133	SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 27, T49N, R2W	Lithic scatter with ground stone 40m E-W X 20m N-S	18 Nonutilized flakes 1 QE 16 FQE 1 VFQE 6 Utilized flakes 4 FQE 1 VFQE 1 CT 1 Blank, FQE 1 Scraper, QE	Eroded.
5GN 134	SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 27, T49N, R2W	Lithic scatter with hearth and ground stone 50m E-W X 30m N-S	26 Nonutilized flakes 2 QE 20 FQE 1 VFQE 3 CT 8 Utilized flakes 3 QE 4 FQE 1 CT 3 Scrapers 2 QE 1 CT 1 Projectile point, QE 1 Blank, QE	Eroded.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 135	SE $\frac{1}{2}$ of NE $\frac{1}{2}$ of Sec. 27, T49N, R2W	Lithic scatter 25-70m N-S X 85m E-W	11 Nonutilized flakes 6 QE 5 FQE	Cut by highway, fence and power line, collected.
5GN 136	NE $\frac{1}{2}$ of NE $\frac{1}{2}$ of Sec. 34, T49N, R2W	Lithic scatter 90m E-W X 13m N-S	16 Nonutilized flakes 1 QE 5 FQE 10 VFQE 3 Utilized flakes 1 QE 2 VFQE	Cut by road, collected and eroded.
5GN 137	NE $\frac{1}{2}$ of NE $\frac{1}{2}$ of Sec. 34, T49N, R2W	Lithic scatter with ground stone 100m E-W X 20m N-S	44 Nonutilized flakes 37 FQE 1 VFQE 6 CT 5 Utilized flakes 1 QE 4 FQE 1 Knife/ Scraper, CT	Cut by powerline and eroded.
5GN 138	SE $\frac{1}{2}$ of SE $\frac{1}{2}$ of Sec. 27, T49N, R2W	Lithic scatter with ground stone 250m NE-SW X 75m NW-SE	34 Nonutilized flakes 3 QE 22 FQE 9 VFQE 5 Utilized flakes 4 FQE 1 VFQE	Eroded.
5GN 139	SE $\frac{1}{2}$ of SE $\frac{1}{2}$ of Sec. 27, T49N, R2W	Lithic scatter with hearths and ground stone 250m E-W X 75m N-S	25 Nonutilized flakes 23 FQE 1 VFQE 1 CT 6 Utilized flakes 4 FQE 1 VFQE 1 CT 1 Knife, FQE 1 Blank, QE 1 Mano, SS	Eroded.
5GN 140	NE $\frac{1}{2}$ of SE $\frac{1}{2}$ of Sec. 27, Area A T49N, R2W	Lithic scatter with ground stone 150m E-W X 40m N-S; Area A - 8m N-S X 6m E-W	27 Nonutilized flakes 1 QE 25 FQE 1 VFQE 3 Utilized flakes 2 FQE 1 CT 1 Scraper, CT	Cut by road, historic trash present, collected.
Area B		40m N-S X 20-25m E-W	32 Nonutilized flakes 4 QE 27 FQE 1 CT 1 Utilized flake, FQE	
Area C		56m E-W X 30m N-S	29 Nonutilized flakes 10 QE 18 FQE 1 CT 3 Utilized flakes, FQE 1 Grinding slab, RE 1 Blank, QE	

Site	Location	Description	Materials Collected ¹	Remarks
5GN 141 Area A	NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 27, T49N, R2W	Lithic scatter with hearths and ground stone, three areas each 75-100m diameter	42 Nonutilized flakes 3 QE 35 FQE 3 VFQE 1 CT 2 Utilized flakes, FQE	Eroded.
Area B			61 Nonutilized flakes 50 FQE 9 VFQE 1 CT 1 SE 2 Utilized flakes, VFQE 2 Knives 1 QE 1 FQE 1 Blank, QE	
Area C			43 Nonutilized flakes 41 FQE 2 CT 11 Utilized flakes 3 QE 2 FQE 6 CT	
5GN 142	NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 27, T49N, R2W	Lithic scatter with hearth and ground stone 5 m diameter	21 Nonutilized flakes, FQE 5 Utilized flakes, FQE	Eroded.
5GN 143	NW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 27,	Lithic scatter 10m X 10m	24 Nonutilized flakes 17 QE 7 FQE 4 Utilized flakes 3 QE 1 FQE	Cut by powerline, eroded collected.
5GN 144	SW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 16, T49N, R4W	Lithic scatter 45m N-S X 30m E-W	14 Nonutilized flakes 8 FQE 6 FEPY 2 Utilized flakes CT 1 Scraper, QE	Eroded.
5GN 145	NW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 27, T49N, R4W	Lithic scatter 10m diameter	32 Nonutilized flakes, 10 FQE 22 CT 5 Utilized flakes 2 VFQE 3 CT	Trampled by livestock.
5GN 146	NE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 28, T49N, R4W	Lithic scatter 1m X 1m	9 Nonutilized flakes 6 QE 1 VFQE 2 CT 1 Utilized flake, CT 1 Chopper, FQE	Undisturbed

Site	Location	Description	Materials Collected ¹	Remarks
5GN 147	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 27, T49N, R2W	Lithic scatter 35m N-S X 25m E-W	17 Nonutilized flakes 8 QE 8 FQE 1 CT 3 Utilized flakes, FQE 3 Knives 2 QE 1 FQE 2 Blanks, QE	Eroded.
5GN 148	NW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 34, T49N, R2W	Lithic scatter 40m E-W X 15m N-S	38 Nonutilized flakes 3 QE 34 FQE 1 CT 5 Utilized flakes 2 QE 2 FQE 1 CT 1 Nonutilized core, FQE	Undisturbed
5GN 149	NW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 33, T49N, R2W	Lithic scatter with ground stone 30m E-W X 15m N-S	23 Nonutilized flakes 2 QE 18 FQE 3 VFQE 6 Utilized flakes 2 FQE 4 VFQE 1 Nonutilized core, FQE 1 Knife, CT 1 Mano, FE	Undisturbed
5GN 150	NW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 33, T49N, R2W	Lithic scatter 50m E-W X 10m N-S	21 Nonutilized flakes, QE	Eroded
5GN 160	NW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 32, T49N, R2W	Lithic scatter 60m E-W X 50m N-S	46 Nonutilized flakes 22 QE 21 FQE 3 CT 3 Utilized flakes, QE 1 Nonutilized core, QE.	Cut by road and powerline Partially inundated.
5GN 161	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 32, T49N, R2W	Lithic scatter with hearth 30m N-S X 20m E-W	15 Nonutilized flakes 7 QE 7 FQE 1 CT 2 Utilized flakes 1 QE 1 FQE	Undisturbed.
5GN 162	NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 32, T49N, R2W	Lithic scatter 65m N-S X 70m N-S	14 Nonutilized flakes 11 QE 11 QE 1 FQE 2 CT 4 Utilized flakes 2 QE 1 FQE 1 Scraper, QE 1 Knife, CT	Undisturbed.
5GN 163	NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 32, T49N, R2W	Lithic scatter 60m X 60m	24 Nonutilized flakes 4 QE 19 FQE 1 VFQE 1 Utilized flake, FQE	Undisturbed.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 164	NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 32, T49N, R2W	Lithic scatter 100m N-S X 75m E-W including submerged area	33 Nonutilized flakes 2 QE 27 FQE 3 VFQE 1 CT 11 Utilized flakes 1 QE 6 FQE 2 VFQE 2 CT 1 Blank, FQE 1 Knife, CT	Cut by road. Partially inundated.
5GN 165	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 32, T49N, R2W	Lithic scatter 50m NW-SE X 25m NE-SW	22 Nonutilized flakes 5 QE 17 FQE 4 Utilized flakes 2 FQE 1 VFQE 1 CT	Undisturbed.
5GN 166	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 32, T49N, R2W	Lithic scatter 45m diameter	15 Nonutilized flakes 3 QE 7 FQE 5 VFQE 1 Utilized flake, VFQE	Eroding.
5GN 167	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 32, T49N, R2W	Lithic scatter 35m diameter	10 Nonutilized flakes, FQE 1 Utilized flake, FQE 1 Knife, FQE 1 Nonutilized core, QE	Undisturbed.
5GN 168	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 32, T49N, R2W	Lithic scatter with ground stone 35 m diameter	10 Nonutilized flakes 3 QE 7 FQE 2 Utilized flakes 1 FQE 1 CT 1 Knife, FQE 1 Blank, QE	Eroding.
5GN 169	NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 31, T49N, R2W	Lithic scatter 40m E-W X 30m N-S	20 Nonutilized flakes 1 QE 19 FQE 6 Utilized flakes 5 FQE 1 CT	Collected, eroded
5GN 170	NW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 34, T49N, R3W	Lithic scatter 6m diameter	20 Nonutilized flakes 14 QE 4 FQE 2 CT 5 Utilized flakes 4 QE 1 FQE	Cut by powerline.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 171	SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 33, T59N, R3W	Lithic scatter with ground stone, 20m diameter	31 Nonutilized flakes 1 QE 29 FQE 1 CT 1 Utilized flake, QE 1 Scraper, CT 1 Knife, QE 3/Knife/Scrapers, QE	Undisturbed.
5GN 172	NW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 33 T49N, R3W	Lithic scatter 10m N-S X 15m E-W	23 Nonutilized flakes 21 FQE 2 CT 1 Projectile point, CT	Undisturbed.
5GN 173	NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 33, T49N, R3W	Lithic scatter 25m N-S X 10m E-W	22 Nonutilized flakes, QE 1 Utilized flake, QE 1 Blank, QE	Eroded.
5GN 174	NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 36, T49N, R3W	Lithic scatter 15m N-S X 20m E-W	22 Nonutilized flakes 6 QE 16 FQE 1 Projectile point CT 1 Blank, QE	Undisturbed.
5GN 175	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 36, T49N, R3W	Lithic scatter with ground stone 45m NW-SE X 15m SW-NE	62 Nonutilized flakes 15 QE 46 FQE 1 VFQE 7 Utilized flakes, FQE 4 Knives 1 QE 1 FQE 2 VFQE 2 Projectile points 1 QE 1 A 3 Scrapers 2 QE 1 VFQE 2 Blanks 1 QE 1 FQE 1 Drill, QE	Eroded.
5GN 176	SW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 35, T49N, R3W	Lithic scatter 40m E-W	10 Nonutilized flakes, QE	Eroded.
5GN 177 Area A	NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 36, T59N, R3W	Lithic scatter 10m NS X 5m E-W	9 Nonutilized flakes, FQE 5 Utilized flakes 4 FQE 1 Nonutilized core, FQE	Collected
5GN 177 Area B	NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 36, T49N, R3W	Lithic scatter 15m N-S X 25m E-W	6 Nonutilized flakes, FQE 1 Chopper, FQE	

Site	Location	Description	Materials Collected ¹	Remarks
5GN 177 Area C		15m N-S X 20m E-W	3 Nonutilized flakes, FQE	
5GN 178	NW¼ of SW¼ of Sec. 31, T49N, R2W	Lithic scatter 20m N-S X 15m EW	21 Nonutilized flakes 5 QE 16 FQE	Collected.
5GN 179	SE¼ of SW¼ of Sec. 31, T49N, R2W	Lithic scatter 20m N-S X 20m E-W	34 Nonutilized flakes 2 QE 32 FQE 3 Utilized flakes 2 FQE 1 VFQE	Collected.
5GN 180	SE¼ of SW¼ of Sec. 31, T49N, R2W	Lithic scatter 150m E-W X 60m N-S	18 Nonutilized flakes 3 QE 14 FQE 1 CT 2 Utilized flakes 1 VFQE 1 CT 1 Scraper, QE	Cut by powerline, collected, eroded.
5GN 181	SE¼ of NW¼ of Sec. 36, T49N, R4W	Lithic scatter 5m diameter	16 Nonutilized flakes, QE 3 Utilized flakes, QE 1 Scraper, QE	Partially inundated.
5GN 182	SW¼ of SE¼ of Sec. 31, T49N, R3W	Lithic scatter 10m X 10m	32 Nonutilized flakes 8 QE 24 FQE 4 Utilized flakes FQE	Undisturbed.
5GN 183	NW¼ of SE¼ of Sec. 31, T49N, R3W	Lithic scatter 15m diameter	11 Nonutilized flakes 1 QE 10 FQE 2 Utilized flakes, FQE 1 Scraper, FQE	Cut by road and powerline.
5GN 184	NE¼ of SW¼ of Sec. 31, T49N, R3W	Lithic scatter 40m N-S X 15m E-W	39 Nonutilized flakes, FQE 12 Utilized flakes 6 FQE 1 VFQE 5 CT 1 Scraper, QE	Eroded, stone historic trash present.
5GN 185 Area A	NW/SW¼ of SE¼ of Sec. 32, T49N R3W	Lithic scatter with ground stone	24 Nonutilized flakes 4 QE 20 FQE 2 Utilized flakes 1 FQE 1 CT 1 Blank, FQE a can opener, 1 fish hook swivel	Cut by road, eroded collected.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 185				
Area B	NW/SW¼ of SE¼ of Sec. 32, T49N, R3W	Lithic scatter with ground stone	60 Nonutilized flakes 42 FQE 18 CT 4 Utilized flakes 2 FQE 1 VFQE 1 CT 1 Rejuvenation, CT 1 Mano, SS 1 Knife, CT 1 Blank, QE	
Area C			42 Nonutilized flakes 33 FQE 1 VFQE 8 CT 1 Utilized flakes 1 FQE 4 VFQE 6 CT 1 Scraper, FQE	
5GN 186	SE¼ of SW¼ of Sec. 2, T48N, R5W	Lithic scatter 6m diameter	11 Nonutilized flakes 7 FQE 2 VFQE 2 CT 1 Utilized flake, FQE	Trampled by livestock.
5GN 187	SW¼ of NE¼ of Sec. 2, T48N, R4W	Lithic scatter 15m diameter	8 Nonutilized flakes, QE 1 Projectile point, VFQE	Undisturbed.
5GN 188	SW¼ of NW¼ of Sec. 7, T58N, R4W	Lithic scatter 10m diameter	17 Nonutilized flakes, QE 1 Utilized flake, QE 1 Nonutilized core, QE	Undisturbed.
5GN 189	NE¼ of SE¼ of Sec. 27, T49N, R3W	Cave 2-3m high X 10m? deep	25 Nonutilized flakes 2 QE 7 FQE 9 VFQE 5 CT 2 FEPY 7 Utilized flakes 2 FQE 4 VFQE 1 CT	Partially looted.
5GN 190	SW¼ of NW¼ of Sec. 7, T48N, R3W	Lithic scatter 20m E-W X 35m N-S	11 Nonutilized flakes, FQE 1 Blank, QE	Undisturbed.
5GN 191	NE¼ of SW¼ of Sec. 31, T49N, R2W	Lithic scatter with hearths and ground stone	35 Nonutilized flakes 24 FQE 11 CT 6 Utilized flakes 3 FQE 2 VFQE 1 CT 1 Grinding stone 2 Projectile points 1 QE 1 FQE 1 Knife, QE 1 Scraper, QE 4 Blanks 1 QE 3 FQE 2 Scraper/Knives 1 QE 1 VFQE	Collected and inundated.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 192	SW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 18, T48N, R4W	Lithic scatter 5m X 5m	30 Nonutilized flakes 1 QE 2 FQE 1 Utilized flake, FQE	Undisturbed.
5GN 193	NW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 30, T49N, R3W	Lithic scatter 25m NE-SW X 15m NW-SE	6 Nonutilized flakes, QE 2 Nonutilized cores, QE	Eroded.
5GN 194	NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 2, T48N, R3W	Lithic scatter 40m E-W X 100m N-S	27 Nonutilized flakes 15 QE 9 FQE 2 VFQE 1 CT 1 Utilized flake, QE	Undisturbed.
5GN 195	NE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 33, T59N, R5W	Lithic scatter with ground stone 40m diameter	42 Nonutilized flakes 5 QE 31 FQE 1 VFQE 2 CT 2 QC 6 Utilized flakes 1 FQE 2 VFQE 3 CT 1 Mano, SS 1 Grinding slab, SS, 2 Buttons, Shell 1 Knife, FQE	Undisturbed.
5GN 196	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 21, T49N, R2W	Lithic scatter 400m diameter	63 Nonutilized flakes 55 FQE 3 VFQE 5 CT 4 Utilized flakes 3 VQE 1 VFQE	Partially destroyed by gravel pit and campground area. Collected.
5GN 197	SW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 13, T49N, R2W	Lithic scatter 20m N-S X 30m E-W	39 Nonutilized flakes 37 FQE 1 VFQE 1 CT 3 Utilized flakes 2 FQE 1 CT 2 Non- utilized cores, VFQE	Cut by road, ditches, fence and powerline
5GN 198	SW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 34, T49N, R3W	Lithic scatter 250m E-W X 100m N-S	7 Nonutilized flakes, FQE 9 Utilized flakes 1 QE 8 FQE 1 Scraper, QE	Collected and eroded.
5GN 199	SE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 34, T59N, R3W	Lithic concentration with ground stone 2m N-S X 2m E-W	12 Nonutilized flakes 1 QZ 2 QE 9 FQE 2 Utilized flakes, FQE	Undisturbed.
5GN 200	SW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 34, T49N, R3W	Lithic scatter 175m E-W X 40m N-S	16 Nonutilized flakes, FQE 1 Utilized flake, FQE 1 Hammerstone, FQE	Disturbed by modern development.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 201	NW¼ of SW¼ of Sec. 34, T59N, R3W	Lithic scatter 25m diameter	56 Nonutilized flakes 5 QE 49 FQE 2 CT 2 Utilized flakes, FQE 1 Scraper knife, QE 2 Scrapers 1 QE 1 RE 1 Blank, VFQE	Disturbed by modern development.
5GN 202	SE¼ of NW¼ of Sec. 34, T49N, R3W	Lithic scatter with ground stone 20m diameter	11 Nonutilized flakes 1 QE 9 FQE 1 VFQE 3 Utilized flakes 2 FQE 1 VFQE 1 Mano, SS 1 Grinding stone, SS	Collected.
5GN 203	SE¼ of NW¼ of Sec. 34, T49N, R3W	Lithic scatter with ground stone 30m E-W X 20m N-S	4 Nonutilized flakes, FQE 2 Utilized flakes, FQE 1 Mano, SS	Collected.
5GN 204	SE¼ of NE¼ of Sec. 34, T49N, R3W	Lithic scatter 150m N-S X 40m EW	35 Nonutilized flakes, 34 FQE 1 VFQE 4 Utilized flakes FQE 1 Knife, QE	Disturbed by modern development.
5GN 205	NW¼ of NW¼ of Sec. 35, Area A T49N, R3W	Lithic scatter 500m N-S X 200m E-W	36 Nonutilized flakes 3 QE 32 FQE 1 CT 2 Utilized flakes, FQE	Cut by road and modern development. Collected.
Area B			58 Nonutilized flakes 3 QE 52 FQE 1 VFQE 2 CT 7 Utilized flakes, FQE	
Area C			25 Nonutilized flakes 3 QE 20 FQE 2 VFQE 3 Utilized flakes 2 FQE 1 VFQE 1 Fork 2 Knives 1 QE 1 FQE 2 Blanks, QE 1 Scraper/Knife, FQE	
5GN 206	SW¼ of NW¼ of Sec. 29, T49N, R2W	Lithic scatter	50 Nonutilized flakes 49 FQE 1 CT 2 Utilized flakes, FQE	Collected.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 207	NE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 30, T49N, R2W	Lithic scatter 100m N-S X 300m E-W	29 Nonutilized flakes 3 QE 19 FQE 7 VFQE 5 Utilized flakes 3 FQE 2 VFQE 1 Nonutilized core, FQE	Cut by highway.
5GN 208	NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 29, T49N, R2W	Lithic scatter 30m NW-SE X 10m NE	8 Nonutilized flakes 1 QE 6 FQE 1 VFQE	Cut by canal and partially inundated.
5GN 209	SW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 20, T49N, R2W	Lithic scatter 60m N-S X 15m E-W	5 Nonutilized flakes, VFQE 1 Utilized flake, VFQE	Modern trash present.
5GN 210	NE & SE of SE $\frac{1}{4}$ of Sec. 20, T49N, R2W	Lithic scatter 350m N-S X 100m E-W	18 Nonutilized flakes, FQE 6 Utilized flakes, FQE	Cut by highway.
5GN 211	NW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 34, T49N, R2W	Lithic scatter 25m e-W X 35m N-S	14 Nonutilized flakes 4 QE 10 FQE 1 Utilized flake FQE	Undisturbed.
5GN 212	SE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 29, T49N, R2W	Lithic scatter 120m E-W X 80m N-S	53 Nonutilized flakes 1 QE 46 FQE 5 VFQE 1 CT 2 Utilized flakes 1 FQE 1 VFQE 1 Nonutilized core, FQE	Heavily damaged by modern development and collected.
5GN 213	NW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 22, T49N, R2W	Lithic scatter 70m N-S X 20m E-W	40 Nonutilized flakes 4 QE 36 FQE 6 Utilized flakes 2 QE 3 FQE 1 VFQE 2 Nonutilized cores, 1 QE 1 FQE	Undisturbed.
5GN 214	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 22, T49N, R2W	Lithic scatter 20m E-W X 15m N-S	6 Nonutilized flakes, QE 7 Utilized flakes, QE	Cut by road, fence and powerline.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 215	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 22, T49N, R2W	Lithic scatter with ground stone 45m N-S X 20m E-W	22 Nonutilized flakes 21 FQE Eroded. 1 CT 6 Utilized flakes, FQE 1 Blank, FQE 2 Manos 1 SS 1 Igneous 1 Scraper, QE	
5GN 216	NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 21, T49N, R2W	Lithic scatter 400m N-S X 200m E-W	15 Nonutilized flakes 2 QE 13 FQE 2 Utilized flakes, FQE	Cut by highway.
5GN 217	NW $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 21, T49N, R2W	Lithic scatter with ground stone, Possible Firepits 250m N-S X 100m E-W	21 Nonutilized flakes, FQE 3 Utilized flakes, FQE 1 Mano, BT	Heavily collected.
5GN 218	SW & NW of SE $\frac{1}{4}$ of Sec. 21, T49N, R2W	Lithic scatter 400m N-S X 100m E-W	29 Nonutilized flakes 6 QE 22 FQE 1 VFQE 1 Utilized flake, FQE 1 Rejuvenation, FQE 2 Hammerstone/Choppers, FQE 1 Scraper/Graver, CT	Cut by highway.
5GN 219	SE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 21, Area A T49N, R2W	Lithic scatter 200m E-W X 125m N-S	21 Nonutilized flakes, FQE 2 Utilized flakes, FQE	Collected, eroded.
	Area B		32 Nonutilized flakes 4 QE 27 FQE 1 CT 13 Utilized flakes 11 FQE 1 VFQE 1 CT 1 Nonutilized core, QE	
5GN 220	NE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 36, T49N, R3W	Lithic scatter 50m N-S X 80m E-W	21 Nonutilized flakes, QE 2 Utilized flakes 1 QE 1 CT	Undisturbed.
5GN 221	SE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 25, Area A T49N, R3W	Lithic scatter and ground stone 425m E-W X 300m N-S	24 Nonutilized flakes 22 FQE Eroded. 2 CT 2 Utilized flakes, FQE 1 Blank, VFQE 1 Projectile point, QE 1 Knife, QE	

Site	Location	Description	Materials Collected ¹	Remarks
5GN 221	Area B		21 Nonutilized flakes 2 QE 18 FQE 1 VFQE 2 Utilized flakes, FQE 1 Blank, QE	
	Area C		23 Nonutilized flakes, FQE 1 Blank, FQE 1 Grinding stone	
5GN 222	E $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 26, T49N, R3W N $\frac{1}{2}$ of NE $\frac{1}{4}$ of Sec. 35, T49N, R3W	Lithic scatter 1.25 km N-S X 1.1km E-W	43 Nonutilized flakes 11 QE 31 FQE 1 VFQE 8 Utilized flakes 1 QE 6 FQE 1 CT 2 Choppers 1 QE 1 FRQ 2 Blanks, QE 1 Projectile point, QE 1 Knife, QE	Cut by highway, eroded.
5GN 223	NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 35, T49N, R3W	Lithic scatter, possible charcoal stains 200m E-W X 500m N-S	37 Nonutilized flakes 2 QE 30 FQE 3 VFQE 2 CT 4 Utilized flakes, CT 1 Projectile point, FQE 1 Misc. item	Collected. Partially destroyed by sewage pond construction.
5GN 224	NE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 33, T49N, R2W	Lithic scatter 30m diameter	23 Nonutilized flakes 1 QE 21 FQE 1 CT 1 Utilized flake, FQE	Eroded.
5GN 225	NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 33, T49N, R2W	Lithic scatter with ground stone 10m diameter	2 Nonutilized flakes, QE 3 Utilized flakes, FQE 1 Nonutilized core, FQE 1 Mano, SS	Eroded, collected.
5GN 226	SW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 32, Area A T49NR 2W	Lithic scatter with ground stone 5m X 5m	7 Nonutilized flakes 6 FQE 1 CT 2 Utilized flakes 1 FQE 1 CT 1 Mano, SS 1 Scraper, QE 2 Hammerstones, QE	Collected. Cut by road.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 226				
Area B		2m X 3m	10 Nonutilized flakes 5 QE 5 FQE 3 Utilized flakes 2 QE 1 FQE 1 Projectile point, FQE 1 Scraper, CT	
	Area C	70m E-W X 100m N-S	12 Nonutilized flakes 2 QE 9 FQE 1 CT 7 Utilized flakes 1 QE 4 FQE 2 CT	
5GN 227	NW¼ of SE¼ of Sec. 31, T49N, R2W	Lithic scatter with ground stone 250m E-W X 200m N-S	51 Nonutilized flakes 5 QE 37 FQE 6 VFQE 3 CT 6 Utilized flakes 5 FQE 1 CT 2 Knives, FQE	Eroded.
5GN 228	SW¼ of SE¼ of Sec. 31, T49N, R2W	Lithic scatter with ground stone 30m diameter	22 Nonutilized flakes 5 QE 17 FQE 9 Utilized flakes 7 FQE 2 CT 2 Knives, QE 2 Scrapers 1 QE 1 FQE 1 Projectile point/blank?, FQE	Partially destroyed by powerline construction.
5GN 229	SE¼ of SE¼ of Sec. 31, T49N, R2W	Lithic scatter 30m diameter	26 Nonutilized flakes 10 QE 16 FQE 4 Utilized flakes 3 FQE 1 CT	Cut by road and powerline.
5GN230	SW¼ of NW¼ of Sec. 32, T49N, R2W	Lithic scatter A--70m E-W X 60m N-S; B--50m E-W X 60m N-S; C--5m X 5m	17 Nonutilized flakes 8 QE 8 FQE 1 VFQE 3 Utilized flakes 2 FQE 1 VFQE	Undisturbed.
5GN 231	SE¼ of NW¼ of Sec. 32, T49N, R2W	Lithic scatter 80m N-S X 30m E-W; including scatter 130m E-W	15 Nonutilized flakes 3 QE 11 FQE 1 VFQE 1 Utilized flake, VFQE 1 Rejuvenation, VFQE 1 Nonutilized core, FQE	Eroded.

Site	Location	Description	Materials Collected ¹	Remarks
5GN 232	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 32, T49N, R2W	Lithic scatter 60m E-W X 80m N-S	25 Nonutilized flakes 1 QE 18 FQE 6 VFQE 4 Utilized flakes 3 FQE 1 VFQE 1 Projectile point, QE	Cut by road, collected.
5MN 767	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 6, T48N, R6W	Lithic scatter 30m N-S X 10m E-W	18 Nonutilized flakes 15 FQE 1 VFQE 2 CT 2 Utilized flakes 1 VFQE 2 CT 1 Projectile point, QE 1 Scraper/Knife, QE	Undisturbed.
5MN 768	SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Sec. 6, T48N, R6W	Rockshelter with lithics and ground stone 5m diameter	4 Nonutilized flakes, FQE 3 Utilized flakes, FQE 1 Grinding Stone 1 Mano 1 Knife, QE	Eroding, some historic trash.
5MN 769	SE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 15, T48N, R6W	Lithic scatter with ground stone 35m E-W X 25m N-S	17 Nonutilized flakes 6 QE 9 FQE 1 VFQE 1 CT 3 Utilized flakes 1 QE 1 FQE 1 CT 1 Projectile point base, FQE 1 Mano SS 1 Knife, QE	Some historic trash.
5MN 770	SW $\frac{1}{4}$ of NW $\frac{1}{4}$ of Sec. 15, T48N, R6W	Lithic scatter 15m E-W X 10m N-S	11 Nonutilized flakes, FQE 1 Utilized flake, FQE 2 Nonutilized cores, QE	Eroding.

ABBREVIATION KEY

F = fine

V = very fine

QE = quartzite

CT = chert

RE = rhyolite

SS = sandstone

QP = quartz porphory

VB = vesicular basalt

FE = felsite

QZ = quartz

QC = quartz crystalline

SE = siltstone

I = igneous

BT = basalt

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