

**ARCHEOLOGICAL INVESTIGATIONS
IN THE MAZE DISTRICT
CANYONLANDS NATIONAL PARK, UTAH**

**Edited by
WILLIAM A. LUCIUS**

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University of Utah**

ANTIQUITIES SECTION SELECTED PAPERS

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INTRODUCTION

In accordance with agreements between the National Park Service and the University of Utah, an archeological survey was undertaken in selected portions of the Maze District, Canyonlands National Park. The Maze District incorporates approximately 325 square miles of rugged plateau parkland and canyons to the west of the gorges of the Green and Colorado rivers between Lake Powell and Dead Horse Point (Fig. 1). The following report is an edited version of two separate reports submitted to the National Park Service in 1975. The initial survey was performed and reported by Patrick Hogan, Leonard Losee, and James Dodge. A second survey and report was accomplished by Leonard Losee and William Lucius with Kendall Malstrom aiding in the Green River portion of the survey. This paper contains portions of both Maze survey reports combined to document the previously unknown archeological resources of the Maze District of Canyonlands National Park.

The survey was conducted on an interrupted basis in the spring and late summer of 1975 by two three-member survey teams from the Department of Anthropology, University of Utah. Access to sites adjacent to the river or in the canyons below the major jumps was gained by boat. The bulk of the survey in the upper canyon regions was accomplished by backpacking into the canyons from their heads.

It was deemed advisable for reasons of preservation as well as logistics to limit collections to environmental sampling leaving all cultural material in situ, it was felt that field recording and identification of observed materials would be sufficient for survey analysis and interpretation. The field investigators, where possible, assigned cultural affiliation to sites relying on their familiarity with diagnostic and distinctive artifacts of those cultures known to have used the area (Sharrock 1966; Gunnerson 1969). Survey records typically consisted of a written description and location, a measured map of the site, an area sketch of the immediate environment, notes on artifact categories present, photographs, and, where applicable, botanical and soil specimens.

Prior to this survey there had been no professional archeological study of the Maze District, although the existence of some pictograph panels was known. There was, therefore, uncertainty as to what would be encountered. Pre-survey research of work done in adjacent areas and a familiarization flight over the area itself, led to the prediction that sites would be scattered and there would be few, if any, permanent agricultural villages. The goal of the study, as stipulated, was an intensive survey in order to learn the probable cultural affinity and use of the area.

PREVIOUS INVESTIGATIONS

The exploration of the Maze District can be viewed as a continuation of University of Utah concern with the prehistory of the Canyonlands region of Southeastern Utah. As a guide to previous investigations of Canyonlands prehistory by the University, as well as others, an annotated history of archeological research follows.

The first professional work on record was a series of expeditions undertaken by Dr. Byron Cummings (1910) of the University of Utah between 1907 and 1909. Cummings described the ruins of White and Montezuma canyons, Fable Valley and the Beef Basin-Ruin Park area and Alkali Ridge. As Brew (1946) noted: "his two short generalizing papers contain little of use to students of the region." Nevertheless, Cum-

mings was able to establish that the area had been occupied by a Puebloan group and did recognize the general settlement pattern which would be found to characterize the entire area.

Between 1928 and 1931 a major expedition under the auspices of the Peabody Museum at Harvard University undertook the exploration and description of the Upper Colorado drainage encompassing most of eastern Utah. Of specific interest in this treatise is the work of Henry Roberts in 1929 and 1930 (Gunnerson 1969). Roberts conducted surveys and limited excavations in the Salt Creek drainage, Ruin Park, Fort and Woodruff Bottoms on the Green River, and Barrier Canyon.

In general, the results of his work indicated that the

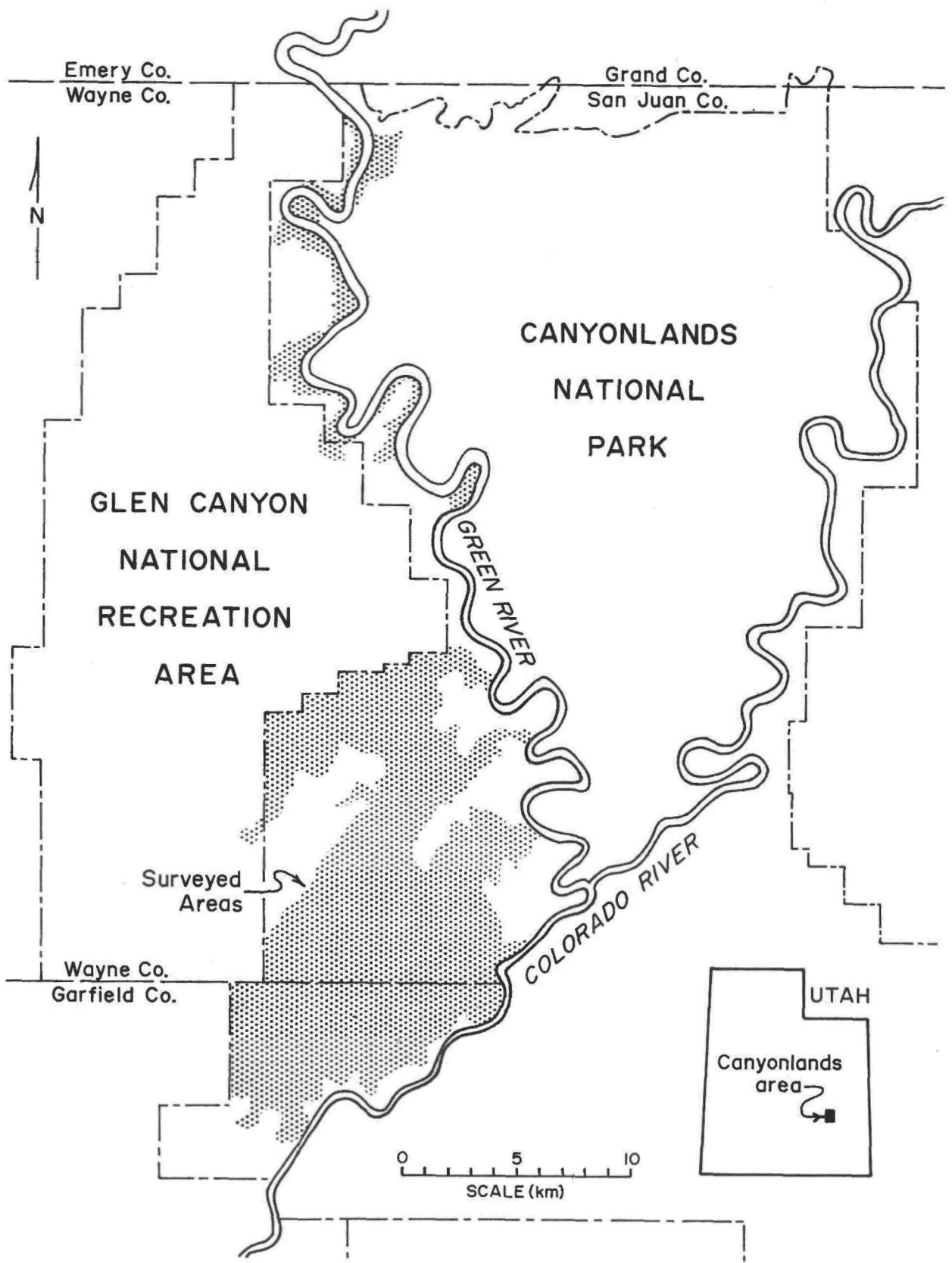


Fig. 1 Map showing area of the Maze Survey.

areas were occupied primarily during Pueblo II — Pueblo III times by small groups of Mesa Verde Anasazi. The monumental architecture of the Mesa Verde area was not in evidence although several multiroom masonry structures were noted. The most spectacular find of the survey was the Great Gallery rock art panel in Barrier Canyon. Since the colossal, extremely detailed painted figures had no positive affiliation with the Anasazi, Roberts excavated the only major habitation site in Barrier Canyon in hopes of gaining more evidence of those artists. His notes, as interpreted by Gunnerson, indicate three occupation phases by Fremont and Pueblo I — Pueblo II Anasazi. Gunnerson's own interpretation of the data suggested that based on differential pottery distributions between the first and second occupations, the original habitation may have been by an earlier pre-ceramic people (Gunnerson 1969). Whichever interpretation proves valid, the site is important as one of the earliest stratigraphic excavations done in the area, and remains the only published site in Canyonlands with any indication of significant time depth.

Between 1931 and 1933, Harvard University sponsored a second study in the general area of Canyonlands on Alkali Ridge. The Peabody Museum Southeastern Utah Expedition, under the direction of John Otis Brew, differed from previous work in the area in that it was conceived in order to answer a specific archeological question. Brew began excavations on Alkali Ridge "with the aim to define the culture of Pueblo II or to eliminate it from the Pecos Classification" (Brew 1946). Thirteen sites, excavated during the three field seasons, convincingly demonstrated the reality of the Pueblo II period. Moreover, the work provided the only comprehensive reported archeological study in southeastern Utah until the late 1950's when the University of Utah and the Museum of Northern Arizona began a joint study in the Glen Canyon area. The scope and intensity of those studies permitted the archeological reconstruction of the culture history of the area and details of the lifeway of the aboriginal inhabitants of the Canyonlands region.

Between 1945 and 1947, the Carnegie Museum of Pittsburgh sponsored three expeditions into the White Canyon, Fable Valley area. The expedition was variously under the field direction of J. LeRoy Kay, a geologist and paleontologist, and David W. Rial of the Carnegie Museum staff. The party made extensive surface collections and records for the Museum, but they were never analyzed nor was a report published. As part of the Glen Canyon project, Floyd Sharrock and Edward Keane reexamined collections and records from the Carnegie Museum and published descriptions of artifacts noting their provenience when known and redesignating the sites reported with the trinomial numbering system in use by the University of Utah (Sharrock and Keane 1962).

In October 1945, Gordon C. Baldwin conducted a brief survey of the Beef Basin, Fable Valley, and Dark

Plateau area for the National Park Service at the request of the Bureau of Reclamation (Baldwin 1949). The party visited 72 sites and noted the presence of hundreds of others. Occupation by both Basketmaker and Pueblo I — Pueblo II Anasazi was documented by ceramics, rock art, and other cultural details. Finally, a detailed study following Brew's (1946) work at Alkali Ridge was suggested.

The first Park Service interest in the archeology of what is now Canyonlands National Park occurred in 1952 when Bates Wilson and Alice Hunt examined Horse Canyon and its tributaries in the Needles District (Hunt and Wilson 1952). The party located 44 sites and reported numerous well-preserved ruins in Cottonwood, Lavender, and Davis canyons as well. In a later report, Alice Hunt (Hunt 1952) noted the beginnings of vandalism and recommended further more intensive study and protection.

In 1952, Jack R. Rudy conducted a survey of Beef Basin as part of the Statewide Archeological Survey of the University of Utah. His report (Rudy 1952) noted the beginnings of systematic looting which he attributed to increasingly easy access to the area brought about by the construction of a new road and an unimproved airstrip. As the chances of protecting the sites seemed slim, Rudy returned in 1953 to excavate nine ruins, including seven surface pueblos, under salvage conditions (Rudy 1955). All sites dated between Pueblo II and Pueblo III periods, with a single exception thought to be a watchtower, were apparently occupied year-round.

In August of 1955, James Gunnerson, while conducting surveys for the University of Utah, examined eight open camps and chipping stations on Bureau of Land Management land near Ekker's Cabin and French Springs in and near the present Maze District. (Not reported; data derived from University of Utah site records.)

In 1958, Gunnerson conducted a survey of a proposed state park in the Dead Horse Point-Junction Butte area (Gunnerson 1958). A portion of that land is now the Island-in-the-Sky District. Sixteen ruins were reported including surface masonry structures, open sites, rockshelters, and rock art sites. No work other than that of a protective nature was recommended.

In 1959, Lloyd Pierson (Pierson 1959) of Arches National Monument, visited Beef Basin, Ruin Park, and the Needles to reconnoiter the potential of the area's cultural resources for recreational activities. The report, which concentrated on the accessibility, picturesque nature, and other generally aesthetic features of the ruins, stood in marked contrast to traditional site descriptions.

In October 1963, C. Melvin Aikens, then with the University of Utah, visited the Needles District and in a letter report to Bates Wilson suggested a systematic mapping and collection of sites be begun by the rangers to offset increasing vandalism. For that same reason, some salvage excavations were suggested.

In 1965, Floyd Sharrock conducted an extensive survey of the Needles and Island-in-the-Sky Districts under contract to the Park Service. His report (Sharrock 1966), in addition to providing a site inventory, made some preliminary statements of cultural affiliation and culture history, postulated migration routes into the Park and made some casual comments about settlement and subsistence patterns.

John P. Marwitt and Henry J. Hall conducted right-of-way surveys for the proposed road from Squaw Flat to the Confluence Overlook in 1970 (Marwitt 1970). They located 15 sites, all chipping scatters. The report marked the first of several surveys initiated expressly to assess the impact of area development on the affected cultural resources.

In 1973, a survey of road realignments in the Needles and Grandview Point areas by La Mar Lindsay and Rex Madsen noted lithic scatters along each route and recom-

mended testing prior to construction (Lindsay and Madsen 1973).

Marvin Kay, a Park Service archeologist, was also involved in 1973 road surveys in the Maze District (Kay 1973). Kay located several special use camps, and re-examined sites in Horseshoe Canyon. Recommendations were made for surface collection and mapping of the sites as well as for the protection of the sites from damage due to increases in visitation brought about by the construction of the new roads.

In 1974, rangers Brian McHugh and Richard Simmons conducted a two-month survey of the Needles District (not formally reported) to complete the inventory records of the area. In addition to the basic locational and descriptive documentation, those features of the sites that specifically related to the administration of cultural resources, such as the state of preservation and evidence of vandalism, were noted.

SETTING

The stark grandeur of the Canyonlands Park area has prompted many popular and scholarly articles on the general topography of the region. Little, however, has been written beyond scenic description of the Maze District, Canyonland's most recent addition. Therefore, a short description of the structurally complex region is provided to establish the background for a discussion of aboriginal settlement and economic patterns.

GEOLOGY AND GEOMORPHOLOGY

Physiographically, the Maze District falls within the Canyonlands Section of the Colorado Plateau Province (Hunt 1967). As the name implies, this region is characterized by numerous deep canyons dissecting the plateau surface. Principal among the canyons are the gorges of the Green and Colorado rivers which form the eastern boundary of the Maze District. Along most of the eastern boundary the Pennsylvanian marine sediments of the Hermosa and Rico Formations are exposed and form the cliffs of the river gorges. Rimming the formations and forming a bench about seven miles wide is the Cedar Mesa member of the Cutler Formation. "This platform is dissected by numerous canyons tributary to the Green and Colorado Rivers, and its surface is marked by buttes, rounded domes, and several tall slender spires . . ." (Baker 1946). That is the area of the Maze itself, the Doll House, and the Land of the Standing Rocks. Capping many of the 100 to 400 ft. red cliffs are the white sandstones of the Organ Rock Tongue and White Rim members of the Cutler Formation. From the inner fringes of the benchlands of the Cutler Formation, an irregular line of cliffs — formed by the Triassic Moenkopi Formation and Moss Back

Member of the Chinle Formation — rise approximately 300 ft. to a broad, open flatland. Those formations also form the sloping bases for remnants of the cliff-forming Wingate in the many isolated buttes that dot the lower bench. Outcrops of the Lower Glen Canyon Group occur in canyons such as Horseshoe and Millard which cut the district's uplands. The domelike weathering of the Navajo Sandstone is commonly the rimrock present there.

Sharrock (1966) has correctly pointed out the importance of the Canyonlands terrain in terms of the restrictions it places on "migration routes, population (site) density, and site type and locale . . ." The information from this survey tends to support those conclusions for the canyons and headlands of the Maze District.

WATER AND CLIMATE

Apart from the Colorado and Green rivers, no perennial streams flow through the Maze District. Total annual precipitation is less than 10 inches, the majority falling during the winter and late summer. Because of a high percentage of exposed rock and poorly developed soil much of the rainwater and snow-melt runs off into the Colorado or Green River thereby providing little usable moisture. The low humidity and high temperatures produce ideal conditions for extreme evaporation and further aid in dessication of the area. Only the water absorbed by the permeable sandstones of the Moenkopi, Kayenta, Navajo and Cutler formations (Baker 1946) remains, discharging slowly from springs and seeps to provide a year-round usable water source. The springs, therefore, become a critical factor in man's presence within the Maze.

Within the survey area, run-off is usually depleted

by late May and the bountiful flows of the Green and Colorado are usable only within their respective gorges and the mouths of the tributary canyons. Jumps (dry waterfalls) up to 300 ft. high block access from the canyons themselves. In late July and August torrential thunderstorms flashflood the canyons and provide usable water only where potholes trap some of the flow.

VEGETATION

The nature of the vegetation within the Maze District is sensitive to the limited availability of water. Following Woodbury (1959), the flora of the Maze District can be divided into several general types based primarily on moisture requirements.

STREAMSIDE OR RIVER BANK VEGETATION

The occurrence of this community within the Maze District is confined to the banks of the Colorado and Green rivers. Here the water table remains high and the roots of the plants are often underwater. The dominant shrub here is tamarisk (*Tamarix pentandra*), an exotic that has rapidly replaced the sandbar willow (*Salix exigua*) which now occurs only in isolated stands. The use of the willow by the aboriginal inhabitants of the river canyons is indicated by its use as framing for doors and hatches of granaries.

Streamside vegetation is largely replicated around seeps of the larger canyons, and includes shadscale (*Atriplex canescens*), rabbitbrush (*Chrysothamnus viscidiflorus*), reed cane (*Phragmites* sp.), Fremont cottonwood (*Populus fremontii*), and various grasses and herbs.

TERRACE VEGETATION

This group occurs on river terraces such as the Spanish Bottom and at the mouths of the benchland canyons where they enter the Green River. These plants are rarely flooded, but have a good moisture supply from river water carried through the soil by capillary action. Dominant species include squawbush (*Rhus trilobata*), greasewood (*Sarcobatus vermiculatus*), saltbush (*Atriplex confertifolia*) and arrowweed (*Pluchea serices*). Also occurring are Fremont cottonwood, cane reed, hedgehog cactus (*Echinocereus aggregatus*), narrow-leafed yucca (*Yucca angustissima*) and various bunchgrasses.

HILLSIDE VEGETATION

The plants of the hillside vegetation group are dependent directly on local precipitation to meet their moisture requirements. The group occurs, within the survey area, on the canyon floors and on the talus slopes. Those areas are dry most of the time and plant cover is sparse, often less than 20%. The communities of the group vary as local soil conditions range from sand dune to

clay to rock talus. Generally dominant is the shadscale with joint-fir (*Ephedra* sp.) and grasses subdominant. Narrow leaf yucca and Utah juniper (*Juniperus osteosperma*) also occur, the latter mostly on the canyon bottoms and on wide shelves within the canyons. In those areas having shallow soil, the shrubs are dominant; where deeper alluvium is present there is a higher proportion of grasses. Of the many grass species present in the Maze, several, notably Indian rice grass (*Oryzopsis hymenoides*), produce seeds known to be attractive to Pueblo gathering groups (Jennings 1966). It is rice-grass that Schaafsma (1971) believes to be depicted at the Bird Site (better known as the Harvest Scene) in South Fork Canyon, along with two figures thought to be harvesters (Fig. 2). Certainly the presence of these grasses in the area could be a major reason for the occupation of the Maze District by aboriginal groups.

BLACKBRUSH SHRUB STEPPE

This community has been described by Walter Loope (personal communication) for the benchlands, such as the Doll House and Maze Overlook, and the upland flats, such as Hans Flat and Flint Flat. As with the hillside flora, the blackbrush steppe vegetation is dependent solely upon precipitation for its moisture. As implied, blackbrush (*Coleogyne ramosissima*) is the dominant shrub with two species of joint-fir and shadscale as subdominants.

UPLANDS

Present at higher elevations, such as the benches of Millard Canyon and Hans and Flint flats, are forests of pinyon (*Pinus edulis*) and juniper (*Juniperus osteosperma*). Extensive grasslands also occur at these higher elevations in areas with deep, eolian deposits.

FAUNA

The animal life of the Maze District as it relates to man appears, from informal observation, to include relatively few species. While various species of reptiles and small rodents are the most numerous animals of the area and were no doubt utilized for food by aboriginal groups, rabbits and large artiodactyls provide much more meat per individual and so were probably more significant to the effective environment of the prehistoric inhabitants. Mule deer (*Odocoileus hemionus*) are today the most common of the big game animals, followed in number by the pronghorn (*Antilocapra americana*), and the desert bighorn sheep (*Ovis canadensis*). The relative proportions of these species have apparently changed since aboriginal times, as archeological sites throughout the west show an abundance of mountain sheep bone, outnumbering deer by a ration of about 7 to 1 (Jennings 1966). Sheep, of course, may have been the preferred aboriginal prey.

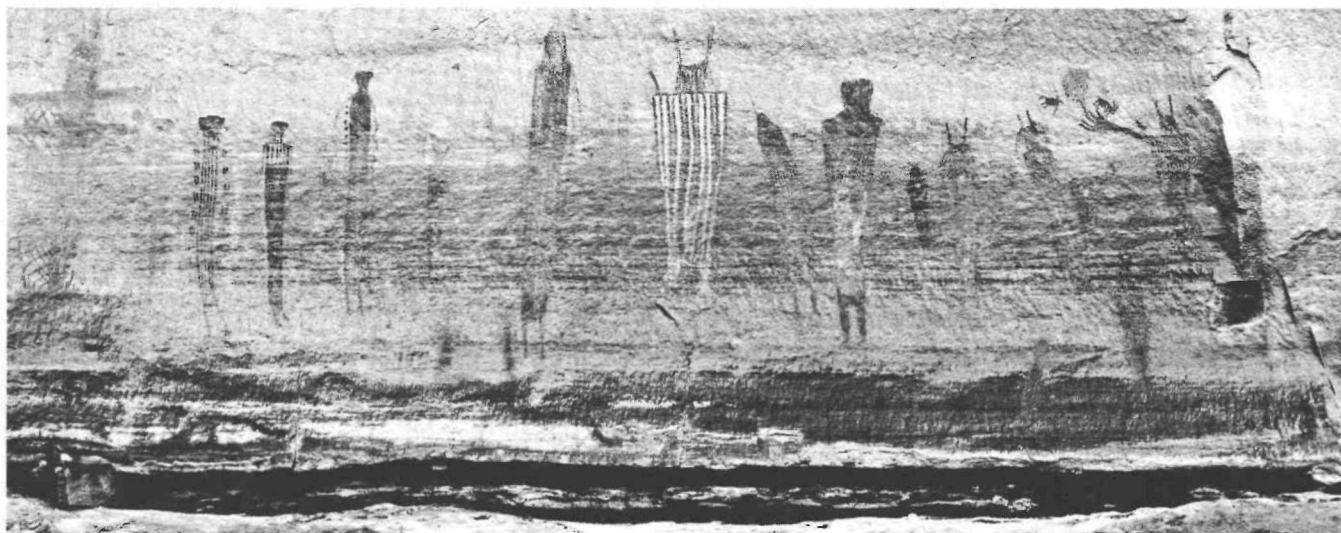


Fig. 2 Bird Site (Harvest Scene) rock art panel of the Barrier Canyon style; located in Maze Canyon.

Similarities in the amount of meat and in the non-food raw materials provided by any of these three species makes the identification of the primary game animal

of the Maze area an unnecessarily fine distinction for the broad generalities of this report.

SITE CLASSIFICATION

In the course of the survey within the Maze District, 248 sites were located and recorded. Following Sharrock (1966) they were grouped into habitation sites, storage structures, rockshelters, open camps, chipping stations, and pictograph/petroglyph panels. In cases where a site fit into more than one category a hierarchy was established with occupation superceding special use. For example, a rockshelter with a chippage scatter and a rock art panel would be considered primarily as a habitation site with the other aspects of the site considered secondary. The divisions were made on the following criteria:

HABITATION SITES

No sites were found in the Maze area that match Sharrock's characteristics of a habitation site as defined for the Salt Creek drainage: ". . . one or more structures obviously used for habitation, kivas, mealing bins, open-air use areas, extensive pictograph/petroglyph panels, and artifacts for domestic use . . ." (1966). However, 11 sites on the Green River showed evidence of more than short-term occupation and were therefore placed in this separate category. Those eleven sites were of Anasazi cultural affiliation and reflect the essentially sedentary nature of that culture. One, a single tower structure, was essentially circular with walls of wet-laid, unshaped sandstone slabs standing on an exposed, relatively inaccessible ridge jutting from the mouth of Jasper Canyon.

The canyon bottom has thick alluvial deposits and the presence of two granary sites nearby suggests that cultivation of crops was practical.

The intensity of occupation at these sites is difficult to judge. The shallow deposits and paucity of artifacts suggest a short span of use. However, the sites are readily visible from the river and probably have been looted repeatedly.

Two additional habitation sites located in the uplands were both near the Doll House, one of the few spots in the southern portion of the Maze District where access to the river was possible. Those two sites are, however, of uncertain cultural affiliation. They will be discussed further in the section on storage sites in the context of the unusual granaries they contain.

STORAGE SITES

Thirty-two sites with storage facilities were recorded during the survey. Of those, 21 were primary storage sites, while 11 had storage facilities in association with habitation remains. As expected, the large majority of the storage sites were along the rivers where good farmland was available.

Storage structures noted during the survey were of four distinct types: typical Anasazi masonry granaries, bell-shaped capped pits, upright stone slab and mud granaries, and slab-lined floor cists. A majority of the

storage sites were of the first type, consisting of one or more masonry granaries (Fig. 3). All such sites occurred at river bottom locations. Generally the granaries consisted of semicircular, wet-laid, single-coursed walls, built against the back wall of a protective overhang or under a large boulder. Unworked sandstone blocks were used in the construction and workmanship overall was, with a few exceptions, rather crude. River mud was employed as mortar, occasionally strengthened with juniper bark or other vegetal fibers. Mortar often made up a considerable portion of the total wall volume. Commonly the roofs of the overhangs were incorporated into the structures but others had apparently been roofed with poles and mud. Doorways were small and designed to be sealed with a sandstone slab. A late Pueblo II/early Pueblo III Anasazi cultural affiliation was assigned to most riverine granary sites on the evidence of pottery types.

A second type of storage unit found at one site was a bell-shaped pit lined with adobe plaster. Willow was used to frame a hatchway in the top of the dome and a square sandstone "manhole cover" was used to close the opening. A structure similar in design was described by Morss (1931) as occurring in Coleman Canyon in the Fremont River drainage.

A third type of storage structure was found at five sites, four of them in the Doll House area, and the fifth on the river (Fig. 4). These structures were formed of large, upright sandstone slabs held in place and usually completely plastered with fiber-strengthened mud. Whole granaries of this type showed that poles were employed for reinforcement and roofing.

Cultural affiliation of these sites is uncertain. Similar structures were noted by Morss in the Fremont River drainage near Fruita, suggesting a Fremont origin (Morss 1931). However, no Fremont artifacts were found at the Doll House sites. A black-on-white Anasazi sherd was found downslope from one of the granaries but not in definite association with it. One habitation site had the basal remains of what appears to have been a granary of this type. Artifacts and rock art at that site suggested an Archaic or early Basketmaker affiliation. Also problematic is the location of these sites in an area apparently unsuitable for agriculture. Three possible explanations can be offered. First, the area may have had higher summer precipitation and therefore been more suitable for agriculture at the time of aboriginal occupation (Baerreis and Bryson 1965). Second, the structures may have been used for storage of pine nuts or wild grass seeds. Third, corn and other cultivated plant foods may have been carried up from Spanish Bottom for storage at the upland sites. It may be significant in this regard that all of the upland granary sites were located near the Doll House where access to Spanish Bottom is possible. All of the structures had been invaded by rodents and none of the original stored foods remained to help answer the question.

A fourth type of storage facility was found at two sites, one in Range Canyon and the other near the Doll House. This type consists of slab-lined cists in the floors of two rockshelters. The cists averaged 50 cm. in diameter and about the same depth. Identical cists were found in a late Archaic/early Basketmaker con-

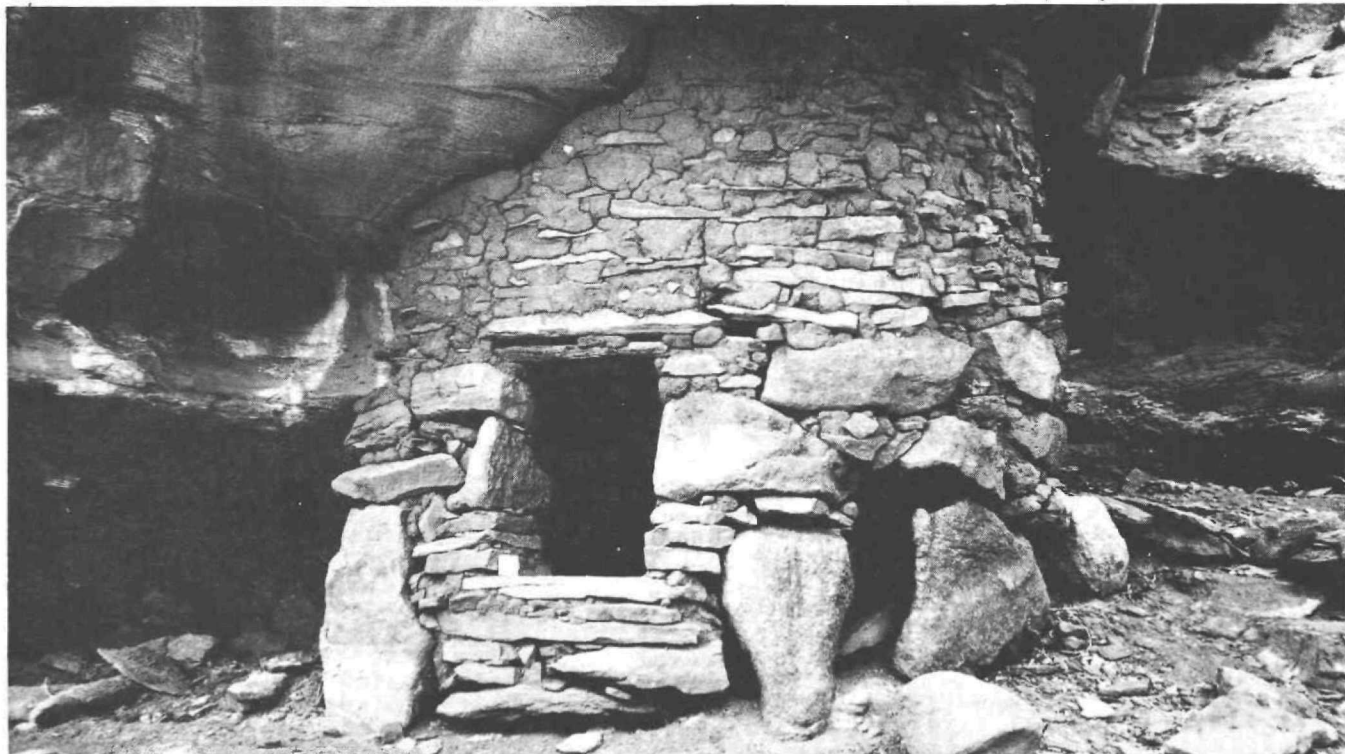


Fig. 3 Anasazi masonry granary located on Turks Head Bottom of the Green River.

text in nearby Cowboy Cave (Jennings 1975). The Range Canyon cist site produced Fremont sherds, but this could be due to re-use of the rockshelter. It is unknown what was stored in the cists; of the three cists at the two sites, two had been cleaned out completely while the third remained sealed with poles and mud and was left intact by the surveyors.

ROCKSHELTER CAMPS

Overhangs and rockshelters showing evidence of brief or occasional occupation were classified as rock shelter camps. Seventy-three of this type were recorded during the survey. Typically, these sites had one or more fire areas and debitage indicating stone tool manufacture. Chipped and ground stone tools, most frequently shallow basin metates and small one-hand manos, were also common at these sites.

Low, dry-laid stone structures were often found in sheltered camps with walls of two types: one was a complete enclosure of low walls (about 0.5 m.); the second had only two low walls with the front left open. Both types enclosed an average area of 9-12 sq. m. and were devoid of interior features. Judging from the artifact scatter, the structures were sleeping rooms while the open areas of the rockshelter served as kitchen and work room.

Few finished tools were found in the alcove sites and those present were generally broken or worn out. A common assemblage included a scatter of percus-

sion flakes (several showing use for cutting and scraping) jasper or quartzite hammerstones, jasper cores, blanks and preforms, broken knives and scrapers, occasionally one-hand manos and/or flat milling stones, and a rare projectile point fragment or a few sherds of pottery. One to three task-specific tool kits are thus in evidence. The hammerstones, cores, unfinished tools, and detritus indicate tool production. Judging from the apparent predominance of secondary flakes and two instances of caches of blanks, it appears likely that blanks were quarried elsewhere and brought to the camps for further reduction and/or finishing. The knives, scrapers, and projectile points as well as the utilized flakes imply the hunting and butchering of game and the preparation of hides. These activities were less in evidence than tool manufacture as far as total artifact numbers go. However, in view of the ease of recognition and desirability of the hunting tool kit as compared with the relatively nondescript nature of evidence of manufacture of tools, it seems feasible that hunting was a generally practiced activity which, for the most part, has escaped detection. This hypothesis can be supported only by systematic testing of sites, but evidence from undisturbed sites in Horse Canyon seems to bear out the suggestion. The milling of seed or grain was evidenced by the presence of ground stone.

Rock art was found in or adjacent to twelve rockshelter camps. Styles present in those sites included Anasazi, Fremont, and Barrier Canyon.

Cultural affiliation could be assigned to thirty-one rockshelter camps on the basis of pottery remains.

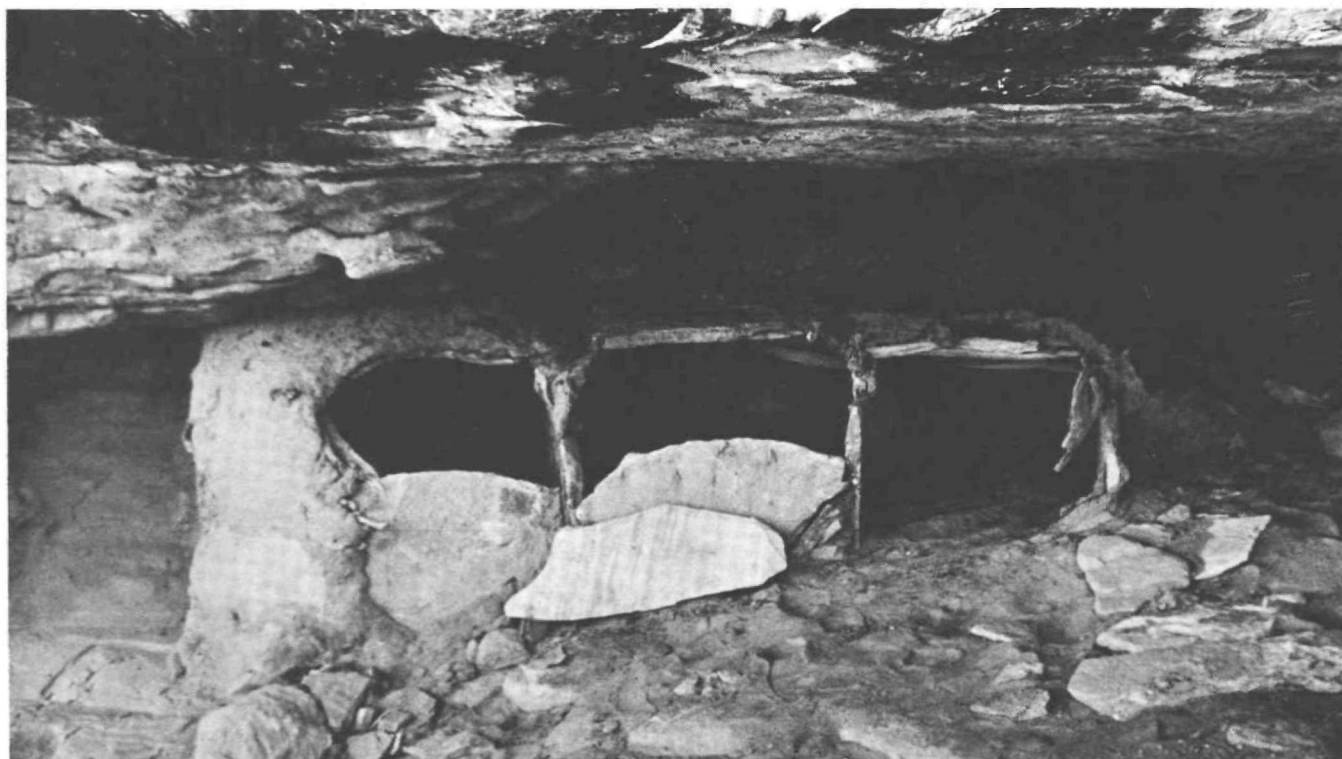


Fig. 4 Upright slab and mud granary of unknown cultural affiliation located in the Doll House area.

Of those, 24 were of Anasazi affiliation and six were Fremont. Two sites, one at Fort Bottom and one in Horse Canyon, had both Anasazi and Fremont pottery. Rockshelter sites with pottery were found throughout the uplands as well as along the river. The majority of the rockshelter camps contained no pottery. On the basis of projectile point and ground stone types, as well as the lack of pottery, many of those sites were tentatively assigned to a pre-agricultural period.

OPEN CAMPS

Forty-one open sites showing evidence of brief occupation — possibly a few days or less — were classified as open camps. Often they were located in the lee of sand dunes with the cultural deposits in a blow-out. For this reason, the true nature of these sites is elusive because any structures or other features may be covered, or the depth of the deposit misjudged. The number of these sites is almost meaningless as their presence or absence on the surface changes from day to day with the shifting of the sands. Many of the recorded camp sites appeared to have been buried for an undetermined period before being recently exposed by erosion.

A typical open camp consisted of a fire area surrounded by a sparse artifact scatter, usually simple chipping debris. A few open sites without evidence of fires were classified as open camps on the basis of the presence of pottery and/or ground stone in addition to the chipped stone characteristic of chipping stations. Erosion may easily account for the lack of camp fire evidence in such cases.

Twenty-seven of the open camp sites, all in the upland areas, had one or more slab-lined fire basins. These basins, formed by a ring of upright sandstone slabs, ranged from .75 to 1.5 m. in diameter and contained ashy soil (Fig. 5). The large size of these basins and the frequent occurrence of two or more together, suggest that they served a special function, possibly for roasting some undetermined plant food. Open sites with slab-lined basins consistently lacked pottery. That fact plus the presence of Archaic type ground stone artifacts at a few of those sites, suggests that they date from the Archaic or early Basketmaker period. Kowta (1963) recorded an open camp with a large slab-lined basin in Capitol Reef National Park. That site also yielded only stone artifacts. Systematic excavation of a few of these sites might securely answer the questions of cultural affiliation and function.

Nine slab-lined basin sites lacked any surface artifacts. They were assumed to be prehistoric on the basis of similarity to other such sites with artifacts, and the lack of associated historic remains. Other open camp sites were assigned to the Anasazi and Fremont cultures on the basis of pottery remains. These generally occurred in areas lacking suitable rockshelters.

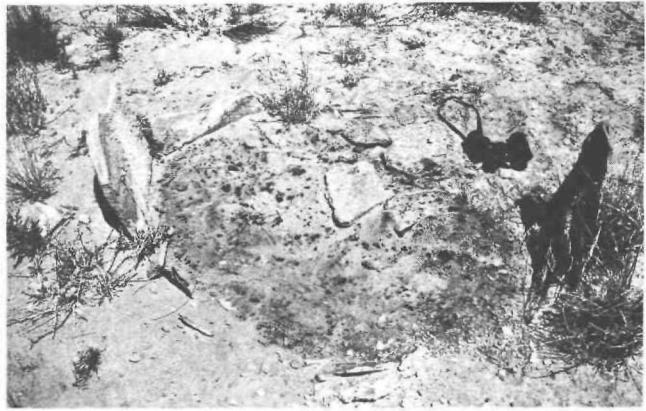


Fig. 5 Typical slab-lined firepit with ashy soil, possibly of Archaic or Basketmaker affiliation.

CHIPPING STATIONS

Throughout the area covered by the Maze survey, chert may be found weathering in large nodules from veins in the limestones of the Cutler Formation. The cryptocrystalline silicates vary in quality from a flawed, but serviceable brown chert to a bright red, high quality material. The abundance of cryptocrystalline material precludes the necessity for any concentrated quarrying activity. Rather, the procurement of lithic raw materials may be seen as an ever present cultural feature of the canyon region.

Seventy-six sites were classified as chipping stations on the basis of the presence of finished stone tools, cores, blanks, hammerstones, and waste flakes, and a lack of evidence for activity other than tool manufacture. Many of these sites contained only waste flakes, but this may be due in part to the activities of souvenir collectors.

Judging from the materials noted at the sites, the siliceous stone was reduced to a size practical for transport by the removal of cortex materials and transported from the site as irregular cores or blanks. The presence of caches of blanks at two alcove sites argues that in many cases, finishing phases of manufacture were done somewhere other than the collecting locality.

Other small and diffuse chipping scatters were noted in large numbers, but were not specifically recorded. Commonly, these were comprised of small secondary flakes as might come from percussion retouch or finishing. Since these sites occurred most often near modern game trails at strategic points in the canyons it is felt that they are the work of hunting parties awaiting game or reworking their tools at a kill.

Thirteen sites fall into Kay's proposed Quarry/Primary Lithic Reduction Station category while the small scatters and the camps are classified as Secondary Manufacturing Stations (Kay 1973). However, the distinctions, at least in the Maze, are not fine.



Fig. 6 Previously unrecorded Barrier Canyon style rock art panel located in Range Canyon.

Such grouping describes only the modal activity and it must be emphasized that all construction phases took place to a greater or lesser degree at all sites with a lithic component.

Diagnostic projectile points were rare at the chipping sites though the presence of Elko series points at a few suggests a possible Archaic/Basketmaker affiliation. Undoubtedly, some of the chipping stations were produced by the later Fremont and Anasazi inhabitants of the area.

ROCK ART SITES

Rock art was recorded at 42 sites. Twenty-one of those were primary rock art sites while 21 were habitation, camp, and storage sites with rock art present. The sites are evenly divided between petroglyphs (pecked) and pictographs (painted), but when separated on the basis of location — river vs. upland — a different picture emerges. Petroglyph sites outnumber pictograph sites along the Green River while the reverse is true in the uplands, where pictographs outnumber petroglyphs.

Following Schaafsma's (1971) stylistic designations, three major styles were evident in the rock art sites — Anasazi, Fremont, and Barrier Canyon. The Anasazi style was present at ten sites, nine of them along the river and one in the uplands. Painted handprints, both negative and positive, similar to those reported by

Sharrock (1966) in the Needles District, were present at two Anasazi storage sites on Valentine Bottom and at an alcove site with storage structures in lower Horse Canyon. Pecked Anasazi motifs present at other sites include: burden-bearing human figures, a row of handholding dancing figures, animal tracks, deer, bighorn sheep, snakes, bullseyes, and a variety of geometric elements.

Rock art of typical Fremont style was present at 11 sites, six of them along the river and five in the uplands. With one exception, the panels consisted of pecked or incised figures. Common elements at these sites were trapezoidal and triangular anthropomorphs (frequently horned) bighorn sheep, deer, and various abstract elements. One site, on a high ledge at Valentine Bottom, had a large panel of painted Fremont style anthropomorphs adjacent to a row of Anasazi granaries. Another site, at Anderson Bottom, though apparently the work of a single artist, combined Fremont style elements — armless trapezoidal anthropomorphs and a well-executed shield-bearing figure with typical Anasazi style elements — animal tracks, and burden-bearing human figures. These two sites raise again the question of the authorship of Fremont rock art in the Canyonlands as discussed by Sharrock (1966) who recorded numerous Fremont style pictograph panels associated with Anasazi cultural remains in the Needles District. The Anderson Bottom panel may be evidence for the borrowing of Fremont rock art

motifs by Anasazi peoples as suggested by Sharrock. Unlike the Needles District situation, however, sherds and other evidence of both Fremont and Anasazi occupation were found on the Maze District side of the river. The canyonlands area was obviously a zone of Fremont/Anasazi interaction, but the nature and consequences of the contact remain unclear.

The Barrier Canyon style was present at 13 upland pictograph sites. Motifs at these sites included anthropomorphs, zoomorphs — frequently at the sides of the anthropomorphs, plants, and raining clouds. Colors noted in the sites were red, purple, orange, and gray, with red by far the most common. The pigments appeared to consist of mineral materials — largely hematite — available in the area. One particularly noteworthy panel of this style was recorded in Range Canyon (Fig. 6). The panel consisted of lifesize human figures with varied torso decoration and halo-like headdresses. At the feet of eight of the figures were small upright animals, while a rainbow arched over others. The panel is reminiscent of the “Great Gallery”

panel in Horseshoe Canyon and the Bird Site (Harvest Scene) in the middle fork of the Maze Canyon (Fig. 2).

Six of the 13 Barrier Canyon style panels occurred at camp and habitation sites. In all such cases pottery was lacking. Chipped stone and grinding implements, where present, suggesting a pre-agricultural origin for the sites. This would support Schaafsma's (1971) contention that the Barrier Canyon Style is the product of a pre-agricultural group, rather than of the Fremont as had previously been supposed. However, rock art/artifact associations are always somewhat tenuous.

Two panels in South Fork, although of uncertain stylistic affiliation, appear relatively recent and may be of Ute or Paiute origin. An interesting panel of boxy-bodied zoomorphs in Jasper Canyon are similar to some assigned by Turner (1963) to Glen Canyon style 5 and may be Archaic in origin. Seven more sites encountered during the survey are of less certain origin but could be assigned to either the Fremont and/or Barrier Canyon style.

THE SITES IN THEIR PHYSICAL SETTINGS

Due to the diversity of terrain found in the Maze District, it was deemed useful to discuss individually the various environments and the types of sites found in them.

THE RIVER BOTTOMS

Along the stretch of river that forms the eastern boundary of the Maze District are more than a dozen bottoms and canyon mouth areas with land suitable for agriculture. Averaging about 3,900 ft. in elevation, these bottomlands are characterized by level, well-watered areas along the river, surrounded by a series of increasingly higher and drier terraces backed by high cliffs.

Three formations make up the bottomlands and terraces in the area surveyed; from north to south these are the Chinle, the Moenkopi, and the Cutler. The Chinle and Moenkopi are, for the most part, unsuitable for formation of rockshelters and it was in the Cutler Formation, particularly at the base of the White Rim Member, where the majority of the riverside sites were found.

Climate along the river, as well as elsewhere in the district, is arid. Annual rainfall is under ten inches and it is only the presence of the river that allows for the comparatively rich habitat of the bottomlands.

Fish, including channel catfish (*Ictalurus* spp.), squawfish (*Ptychocheilus lucius*), suckers (*Castomus* spp.), and chubs (*Gita* spp.) are common in the Green

and Colorado rivers (Woodbury 1959), but whether they were exploited by the prehistoric inhabitants of the area is unknown.

Undoubtedly the major attraction of the river bottoms was the rich soil where such crops as corn, beans, and squash could be grown. Of the 55 sites recorded along the river, 45 could be securely attributed to Anasazi horticulturalists. Over half — 28 — were storage sites or habitation and rockshelter sites with storage facilities. Although a dozen named and unnamed bottoms were examined, the great majority of the river sites were located at four bottoms where conditions were particularly well suited for agriculture. Those were: Valentine Bottom (21 sites), Anderson Bottom (8 sites), Fort Bottom (5 sites), and Turks Head (4 sites).

No surface evidence — field boundaries, irrigation ditches, etc. — was visible to indicate the location and extent of prehistoric fields. Flooding and, in at least two cases (Anderson and Fort Bottoms), historic farming have probably destroyed such features. Presumably, however, corn and squash and perhaps beans (corn cobs and a squash button were noted) were planted near the river where groundwater level was high, and along stream channels emerging from side canyons where summer flash flood waters could be easily diverted.

Though higher terraces were also examined, most of the river bottoms sites were found at the base of the first terrace above the floodplain in rockshelters and under large boulders. A notable exception to this



Fig. 7 Two story tower and adjacent structures located at Fort Bottom on the Green River.

rule was found at Fort Bottom where a group of structures including a circular two-story "tower" were perched atop a high butte (Fig. 7). The site commanded a view of a considerable area up and down the river and was accessible at only one spot. It appeared to be a defensible retreat or observation post, but may also have served some unknown ritual function.

Pottery found at the river sites indicated that the great bulk of the occupation is traceable — as in the Needles District — to the Pueblo II/early Pueblo III Anasazi expansion that occurred at about 1075 to 1150 A.D. (Sharrock 1966). The lack of large habitation sites and midden material also indicates that the majority of the occupation occurred within a short timespan — perhaps 50 years — and involved small groups, possibly inhabiting the sites only seasonally to plant and harvest their crops.

THE BENCHLANDS

Level to slightly sloping benchlands, averaging about 5,000 ft. in elevation, surround Horse Canyon and comprise Petes Mesa and the uplands west of the Standing Rocks around the heads of the Maze, Fins, and Range canyons. The environment in these areas is the most marginal in the district. Water is dependent

entirely upon precipitation and is available only in potholes in the exposed upper surface of the White Rim Sandstone, and then only for brief periods in the spring and following summer thunderstorms. Seeps and springs occur in the nearby canyons, but canyon walls are so abrupt that access is possible at only a few places.

The benchlands are characterized by low semi-stabilized dunes and extensive areas of exposed sandstone. Vegetation is that described by Loope (personal communication) as "blackbrush steppe."

As might be expected, sites were sparse in the benchland areas and of a very transient nature. Of 25 recorded, 20 were only chipping scatters while the remaining five were small open camps. The sites were concentrated along canyon rims where the uneven sandstone surface traps rainwater in shallow potholes. With the exception of Petes Mesa, the benchlands probably served more as access routes between more favorable areas than as resource centers. The north rim of Horse Canyon is particularly well suited as an access route, connecting the Green River with the pinyon-juniper covered uplands to the west.

The few diagnostic artifacts — pottery was lacking — in the benchland sites suggested that an Archaic/Basketmaker affiliation was likely for a large percentage of them.

THE CANYONS

Canyons are the dominant landform in the Maze District, comprising about 75% of the total area. Although varying considerably in width and resulting environment, the canyons of the district are all characterized by abrupt, at times even slightly overhanging walls, numerous side canyons, sandy floors and, in most cases, a series of stepped benches. Canyon floors average about 4,800 ft. in elevation.

Stream channels fill briefly with raging torrents following summer thunderstorms, but the only permanent water sources in the canyons are the infrequent springs and seeps. All else being basically equal, canyon width is the single most important factor in determining water availability and resulting vegetation types. Narrow canyon areas not only concentrate precipitation run-off more, but also retard evaporation by providing more shade than wide canyons.

With the exception of Range Canyon, the canyons of the district contained relatively few sites. Those found, however, showed considerable variety, both in type and cultural affiliation. Rockshelter camps, many of them showing evidence of re-use, predominated. Chipping stations, open camps, and rock art in a variety of styles including Anasazi, Fremont, and Barrier Canyon were also documented. Habitation sites, as earlier defined, were lacking in the canyons and occupation throughout appeared to have been of a transient nature reflecting resource exploitation by various groups.

Acquisition of lithic material was probably the major activity in South Fork, Jasper, Shot, and Water canyons where good quality jasper is found weathering out of extensive beds in the Cutler Formation. The presence of Anasazi camps on the ridge extending north from Chimney rock to Petes Mesa suggests an access route from the uplands into the canyons.

Range Canyon had a relatively large number of sites (33) and two reasons can be suggested. First, lower Range Canyon has, as noted, a considerable area of grasslands offering Indian ricegrass and dropseed as well as the typical canyon plant resources and game; second, lying between the Wide Valley-Ernies Country area and the pinyon covered uplands to the west, Range Canyon was probably on a major passageway.

Although artifacts in the canyon sites indicated occupation by Anasazi and Fremont groups as well as Archaic/Basketmaker, no evidence of agriculture was noted anywhere in the canyons.

THE GRASSLANDS

Deep, sandy soils occur at North Flat between Standing Rocks and the Dollhouse, Wide Valley, Main Flat, and portions of Ernies Country. These areas vary from level to gently rolling and average about 5,200 ft. in elevation. With the exception of a very few occasionally filled potholes, water is lacking and vegetation there is entirely dependent on the scanty precipitation. Nevertheless, these areas support a plant community that probably constituted one of the major attractions of the Maze District for prehistoric peoples of the area. The community consists largely of several species of sand-loving grasses, including dropseed (*Sporobulus* spp.), Indian ricegrass (*Oryzopsis hymenoides*), needlegrass (*Stipa* spp.) and grama grass (*Bouteloua curtipendula*). Also occurring are shadscale, snakeweed, and prickly pear, as well as an occasional juniper and barberry shrub. That the grasses were exploited prehistorically seems amply documented by the common occurrence of grinding stones in sites of the district.

Sheep and cattle grazing was practiced until recently in the grassland areas but never on a large scale because of the scarcity of water. Apparently, little if any alteration of the local plant communities has resulted from those activities (Loope 1975, personal communication).

Fauna of the grasslands include deer, antelope, rabbits, and rodents, but again, numbers are not high. Hunting was probably of secondary importance to plant food collection.

Sites are relatively numerous in the grasslands, particularly in the area northeast of the Doll House. As would be expected, open sites including camps and chipping stations are most common. In the low cliffs surrounding much of the grasslands are many rockshelter camps and rock art panels. The latter are, with few exceptions, of the Barrier Canyon style. Storage structures occur at a few sites near the Doll House, including two habitation sites. As noted earlier, however, it seems unlikely that horticulture was practiced in the uplands.

Artifactual evidence for both Fremont and Anasazi occupation of the grasslands was recorded, suggesting that wild plant food collection and hunting were important supplements to riverine agriculture for those groups. The majority of the grassland sites, however, were apparently of Archaic/Basketmaker affiliation and seasonal exploitation of wild grass seeds must have formed an integral part of the yearly hunting-collecting round.

In addition to their importance prehistorically as resource areas, the grasslands of the Maze District, by their very nature, must have served as important access routes between the river/canyon area and up-

land areas to the north and west. It seems likely that this fact accounts in part for the number as well as cultural variety of sites in the grasslands.

ARTIFACTS

As mentioned, no collections of cultural materials were made during the course of the Maze area survey. It was deemed advisable that, since field observations could provide the basic information about cultural affinity and site utilization it would be of more value to leave the sites as untouched as possible for future intensive investigations. This approach was possible because of the relative remoteness of the survey area and lack of development of the Maze District. Standard procedure for in-field analysis involved the identification of any ceramic material, notation on the nature of any ground or chipped stone artifacts, and an approximation of the type and relative percentages of siliceous detritus. Assumptions based on this analysis were then incorporated along with environmental and locational clues into the site description and classification.

In general, the sites recorded during the survey contained scanty artifact material. On the river sites, the lack of surface material is most likely due to years of collecting by river runners because the sites are readily visible and accessible from the rivers. Amateur collecting may also account for an absence of the more easily recognizable artifacts near areas of limited visitor use in the Maze proper, although our examination of many apparently undisturbed sites showed them to be only slightly more productive in terms of artifact yield. In general, therefore, the paucity of artifacts seems to be an actual feature of Maze district sites.

CERAMICS

Pottery sherds, and in one case a restorable vessel, were observed at 58 sites. Ceramic sites yielded less than 20 sherds, each normally representing less than five vessels. Forty-five sites contained ceramics of Pueblo manufacture, which can be assigned to the Mesa Verde Anasazi. No recognizable Kayenta sherds were found. Three upland sites produced sherds of Pueblo I or early Pueblo II (800-1000 A.D.) affiliation with no later ceramics present. Cortez Black-on-white and Deadmans Black-on-red sherds (see Breternitz et al. 1974) at those sites suggests a sporadic early use of the upland regions which was

followed, as indicated by the preponderance of Mancos and McElmo Black-on-white pottery types, by increased Pueblo II and Pueblo III (900-1300 A.D.) use of both riverine and upland environments.

Fremont ceramics were observed at 12 sites, four of which also contained Anasazi ceramics. All Fremont sherds were either Emery or Sevier Gray (700-1200 A.D.) with field identification indicating Emery Gray as the most common type (Madsen 1973). One site contained six sherds of an anomalous vessel which could not be comfortably placed in either Fremont or Anasazi typologies and has no parallels in Shoshoni wares in University of Utah collections.

No clay sources were discovered in any area of the survey and coupled with the general scarcity of pottery at all ceramic sites — only partially accounted for by visitor removal of portable artifacts — it is probable that vessels were manufactured outside the survey area and transported in by groups using the district.

CHIPPED STONE

In-field analysis of the chipped stone material was carried out with three questions in mind: (1) the function of the artifact as it relates to activities carried on at the site; (2) local procurement of raw materials; and (3) the cultural affinity of the site's occupants. Artifact function was judged on the basis of overall morphology and obvious use markings such as edge attrition. Locally available resources were determined by a comparison of material with the types noted during the study. Cultural affinity, in most cases could not be assigned as chipped stone assemblages of both the Anasazi and Fremont are extremely variable and the few artifacts encountered were utilitarian types with little typological distinction.

Ignoring any possible cultural or temporal distinctions and considering the entire artifact inventory of the Maze area as a single assemblage, the general picture is of a homogeneous tool kit, fashioned from locally available cherts, consisting of probable knives, scrapers, an occasional projectile point, and the materials of their production: hammerstones, cores, blanks, preforms, and debitage. Some of the debitage

also served as casual cutting, scraping, and planing implements. The constancy of the artifact inventory argues further for a uniform usage of the Maze area environs.

Chipped stone, including the debitage resulting from tool manufacture, was recorded at 193 sites and by far constituted the bulk of observed surface remains. Lithic waste and occasional tools in and around 78% of all recorded sites indicate the importance of chipped stone to aboriginal populations, and that prehistoric use of the area was in part due to its mineral resources. Four sources of cryptocrystalline tool material were recognized during the course of the survey. However, outcrops were merely noted and those listed do not exhaust the possible sources of raw materials. Outcrops occur in the deep canyons of the Maze proper. On the unnamed bottom south and across the Green River from Fort Bottom, a semitransparent mottled gray chert was found weathering out of the Moenkopi Formation. At Turks Head Bottom extensive reddish-pink to white cherts litter the headlands and derive from the Cutler Formation. In the Doll House area blood-red cherts were observed in limestone lenses of the Cutler Formation (Lohman 1974).

Projectile points from 19 sites, as well as 10 isolated finds, were observed and tracings were made of the distinctive points. Recognizable points were predominately Elko-eared (ca. 6400-ca. 1250 B.C.) and Elko Corner-notched (ca. 6000 B.C.-ca. 1350 A.D.) as defined by Aikens (1970). The occurrence of those distinctive projectile points in the uplands of the Maze suggest use of the area by Archaic groups.

A general impression imparted by those sites containing masses of debitage and broken preforms with a corresponding scarcity of tools and points was of site use primarily for reduction of tool materials to portable blanks and preforms. One important resource of the Maze district, and perhaps adjacent areas, would appear to have been mineral.

GROUND STONE

The presence of ground stone at the sites is significant in two respects. (1) While the milling stone is part of both the Fremont and the Anasazi tool kits, its association with sites in an area where agriculture is not possible suggests the processing of wild plant foods, probably grasses. The so-called Bird Site or Harvest Scene, as Schaafsma points out, appears to document the gathering of grasses, particularly Indian ricegrass (*Oryzopsis hymenoides*). Ethnobotanical data and coprolite analysis from Clydes Cavern (Winter and Wylie 1973) reveals grass seeds and various non-grass plants, such as goosefoot (*Chenopodium* sp.) and amaranth (*Amaranthus* sp.), made up a high percentage of the diet of both Archaic and Anasazi/Fremont period inhabitants. Excavations at nearby

Cowboy Caves (Jennings 1975) unearthed a great number of milling stones in association with large amounts of chaff and seeds of various grasses and non-grass plants, notably Indian ricegrass, goosefoot, and amaranth. The gathering of wild seeds is further documented in the area by ethnographic accounts of the Southern Paiute (Kelly 1964) and the Hopi (Whiting 1939). (2) A second assumption that may be made on the presence of milling stones is that in many cases the parties that forayed into the Maze included both sexes. The concept of transient household groups moving through the area thus becomes more tenable.

Ground stone, including metates, handstones, mortars, and axe grinding grooves, was observed at 46 sites with one isolated find of a complete shallow basin metate. Ground stone was notably absent from most riverine sites. Locally available sandstones were utilized with the exception of three manos from two sites — manos made of exotic stones which would have been carried into the area. The three loaf-shaped manos are of Fremont manufacture as evidenced by comparison with University of Utah collections and similar materials described by Wilson and Smith (1975). No identifiable Fremont metates or fragments were discovered.

Five sites yielded distinctive Anasazi ground stone. Two sites were assigned Pueblo affiliation due to the presence of stone axe grinding grooves in conjunction with other diagnostic Anasazi artifacts. Three additional sites contained deep trough metates with one open end; metates which are characteristically Anasazi (Swannack 1969). No identifiable Anasazi corn manos or fragments were discovered.

The remainder of the ground stone artifacts could not be initially identified as to either temporal or cultural affiliation. The majority of metate fragments found were from thin slab metates with shallow, pecked basins. Handstones, with the exception of those Fremont types described above, were small — 8 to 13 cm. in diameter — one-handed rectilinear-to-round stones with bifacial use. Analogous metates and manos were uncovered in excavations at Cowboy Cave, an Archaic/Basketmaker site near the survey area (Jennings 1975). The similarity suggests probable Archaic/Basketmaker affiliation for those sites yielding such ground stone remains. Further study is needed in order to clear up the status of shallow basin metates and round handstones. However, the presence of distinctive Fremont and Anasazi ground stone artifacts in the uplands, essentially a nonagricultural locality, suggests that shallow basin metates and round handstones are indicative of nonagricultural wild plant processing activity and may be considered diagnostic for Archaic/Basketmaker cultural activity.

Three mortars were observed during the course of the survey, but their occurrence at sites of varied cultural affiliations precludes assigning them to any specific culture.

MISCELLANEOUS ARTIFACTS

In addition to the major classes of artifacts discussed, occasional finds of bone refuse, vegetal remains, and a drilled shell bead, were recorded. Bone re-

mains were identified as mule deer or bighorn sheep in very limited quantities. Vegetal remains, with the exception of a corncob and squash button were generally structural elements in granaries or of questionable antiquity.

CULTURAL AFFILIATION AND DATING

The nature of a surface survey of archeological materials lends itself, at best, to an approximation of cultural affinities and time scaling. The scarcity of cultural debris and absence of permanently occupied sites in the Maze makes statements about dating and affiliation of sites no more than an informed best guess, based on a few sherds of pottery and some assumptions about rock art styles.

The 248 sites of the Maze survey presented difficult problems of interpretation in respect to their cultural affiliation. Primarily, lack of distinctive and diagnostic cultural remains at 138 sites, mostly chipping stations, meant that over 50% of all sites recorded could not be placed into any cultural category. One purpose of the survey, that of cultural inventory of all sites within the survey area, was thus partially prevented. The failure to establish the cultural identity of those sites indicates a need for post-survey research, possible in the form of test excavation.

Thirty-seven sites contained possible Archaic/Basketmaker components, affiliation being based on either ground stone or projectile points, with the possibility that a sizable portion of those nonidentifiable sites are also Archaic or early Basketmaker. Especially eligible are those open camps containing slab-lined firepits and associated debitage but never ceramics.

All but one of the possible Archaic/Basketmaker component sites occurred in the Maze uplands. This almost complete lack of early remains on the Green River is problematic. Archaic sites are generally nondescript and as such would not attract visitors or promote removal of artifacts or site destruction. Sites located on areas subject to river action may have been lost, but generally it can be stated that pre-agricultural use of the Green River bottoms and benches was not evidenced by survey results. Two possible explanations are either that use of river resources did not promote establishment of camps or that river resources were not important to Archaic/Basketmaker populations. Opinions on the problem are not possible from survey data.

An Archaic mode of small group seasonal gathering in the uplands was indicated by dispersed tempor-

ary camps. That mineral resources were extensively exploited was evidenced by the volume of chipped stone debitage. The presence of slab-lined firepits with associated metates and manos in different ecozones suggests varied wild plant use. Deer, bighorn sheep, and rabbits are present in the survey area and may have been an attraction for early gatherers.

The transitory nature of the recorded camp sites indicates resource exploitation by mobile hunting and gathering groups. No base camps were discovered in the survey area, suggesting that the Maze District was an important, but not central, activity area. The excavations of Cowboy Cave (Jennings 1975) and Sudden Shelter (University of Utah analysis in progress), located west of Canyonlands, suggest the Archaic cultures exploiting the Maze resources may have been based to the west.

Fremont components were evident in 21 sites indicating minimal use of the Maze district by peoples of that culture. Fremont ceramics and ground stone, and in certain cases rock art styles and motifs, were considered diagnostic. The scarcity of Fremont remains and the strong Anasazi nature of the area suggest that the main transition zone between the two cultures may be found further to the west, possibly between the Maze District of Canyonlands and the Henry Mountains. Survey data indicate only sporadic use of the area by Fremont peoples.

Twenty-six percent of the recorded sites contained Anasazi components. The presence of diagnostic ceramics as well as distinctive ground stone, architecture, and rock art aided in the identification of Pueblo occupation. Forty-one of the 65 Anasazi sites were located on the Green River, an area amenable to corn horticulture; the remaining sites were considered as bases for resource use of the uplands by essentially river valley farmers. Upland Anasazi sites generally occurred close to the rivers or along physiographic features which would allow for easy access to various upland areas. Desirable locations were characterized by two or more components and often even historic camp use; 14 sites showed prehistoric multi-component use.

No large or long-lived habitations were found in any portion of the survey area. Even those Anasazi sites located on the river appeared to be seasonal farming

camps or, at best, short duration farmsteads.

A temporal outline of the cultures responsible for the pre-history of the Maze District can be established. As no Paleo-Indian activity was indicated, Archaic populations were probably the first users of the district. However, the intensity and duration of Archaic hunting and gathering activities is unknown. It can be postulated that area use followed a similar time frame as did nearby Cowboy Cave, which shows discontinuous use for over 5,000 years from ca. 6800 to ca. 2000 B.P. (Jennings 1975).

No Basketmaker III use of the area was observed and the total lack of recognizable Basketmaker III artifacts or sites invites explanation. It is suggested that either Basketmaker III sites of the Maze District are nonexistent or nonidentifiable. A gap of approximately 400 years is indicated between Archaic/Basketmaker III and Anasazi occupations. Only post-survey research can effectively probe the apparent hiatus.

The initial Anasazi use of the area is established as occurring between 900 A.D. and 1000 A.D. by recovery of dated ceramic types. The early occasional use of the uplands was followed by intensive use of both upland and riverine environments by the Mesa

Verde Anasazi with abandonment apparently coinciding with the general abandonment of the San Juan cultural area by 1300 A.D. (Rohn 1971).

Placement of the Fremont into the temporal outline is difficult as no artifact types of that culture are firmly dated or show recognizable variation through time. Thus, Fremont use could have occurred anywhere between the 700 to 1200 A.D. dates assigned to the San Rafael Fremont (Marwitt 1970). Fremont use could have coincided with Anasazi occupation but the interaction of the cultures, if any, could not be determined.

Aboriginal use of the Maze District after Anasazi abandonment is not strongly indicated. Late utilization of the area by historic Ute and Paiute groups is only hinted by two apparently late petroglyph panels, 42Wn658 and 42Wn668. As pointed out by Sharrock (1966) Ute and Paiute “. . . leave few traces of their passage, and it is unlikely that [they] would be distinguishable even if found.” No artifacts or sites of later aboriginal groups were discerned, indicating that prehistoric occupation and use of the Maze District was terminated by 1300 A.D.

DISCUSSION

SETTLEMENT PATTERN AND SUBSISTENCE

Any accurate study of settlement pattern requires good control of cultural and temporal variables. The survey conducted within the Maze can make no claims to have completely isolated these key attributes. However, despite the broad technological differences between the agricultural and architectural Anasazi and Fremont on the one hand, and the earlier Archaic/Basketmaker, on the other, the groups are comparable in the similarity of gathering activities — activities basically Archaic in nature. Following Steward's contention that similar cultures will elicit a similar response to similar environment (Steward 1955), we can hazard some general statements of exploitive strategies within the Maze that are applicable to all the groups thought to have utilized the region for gathering activities. Some allowances have to be made for the possibility of previous climatic conditions that might have made the area more favorable. However, barring long-term conditions drastically different from the present, the model should be valid.

Three general resources have been discussed as probable objects of aboriginal exploitation: big game species, wild grasses, and lithic materials. Apart from

the spatial and seasonal restriction inherent in harvesting, further limitations are imposed by the uncompromising nature of the country. Principal among the latter appear to be the availability of water and restricted lanes of access and passage. Examination of site distribution reveals an overall restriction of sites to main drainage channels despite the presence of equal or better habitat in many of the tributary canyons. This patterning of sites along the arteries of passage and the absence of sites in the side canyons probably indicates the main canyons were the foci of subsistence activities.

Surprisingly, many of the camp sites, some apparently occupied for at least a few weeks at a time, were located away from any present permanent water source. It seems, therefore, that occupations probably were seasonally timed to periods when water was more readily available; i. e., spring and early summer. This coincides with the ripening of many of the spring grasses and their harvest time as documented for the Hopi (Lipe 1970). Since game is available in the area throughout the year and jasper has no seasonality, it is probably the above combination of factors which governed the utilization of Maze resources.

The canyon bottoms represent only a portion of the area utilized by the aboriginal inhabitants. The drainages represent only one of four topographic areas

within the district boundaries, and it is likely that each of the four played a unique role in patterns of use and occupation within the area. Furthermore, if previous climatic conditions were not radically different than those of the present, the Maze District could support agriculture nowhere but along the river gorges.

REGIONAL CULTURAL RELATIONSHIPS

The utilization of lands west of the Colorado River by the Mesa Verde Anasazi is contrary to the prevailing view in Southwestern literature that the Colorado marks the northern boundary of the Mesa Verde expansion. Such utilization is not unique to the Maze, however, as recent survey work in Arches National Park indicates (Berry 1975). That survey generated a picture of intermittent resource procurement essentially the same as that of the Maze. The information has led Berry (1975) to redefine the boundaries of the Mesa Verde cultural groups to the northwest bringing both Arches National Park and the Maze District within that culture area. At present, it is impossible to say whether the new boundary will encompass new localities of Anasazi occupation, or whether it merely bisects a buffer zone which was sporadically used by both the Anasazi and Fremont in the harvesting of wild resources.

As for the canyons of the lower Maze District, it seems most probable that the Anasazi visitors originated in the Salt and Indian Creek drainages of the Needles District. Movement into that region during Pueblo II to Pueblo III times has been summarized by Sharrock as being ". . . primarily from the east by several routes but specifically via Indian Creek; from the south through Bobby's Hole, Ruin Park and Beef Basin into the grabens, thence eastward to the Salt Creek drainage system," (1966).

Unlike the Needles survey, the presence of the Fremont in the Maze was documented by Fremont ceramics at several sites. However, given that the area was subject to only occasional use, the problem of where the foraging groups may have originated becomes a concern.

Surveys by Morss (1931) and Gunnerson (1957) place the Fremont as far east as the Colorado River in the drainages of the Dirty Devil, Fremont and Escalante rivers. To the north, work by Wormington (1955) and Gunnerson (1957) has located Fremont sites as far south as Thompson Wash near the present town of Green River. Unfortunately, little archeological data is available for the San Rafael and Green River deserts. However, judging from past finds in similar topography those regions were probably only occasionally visited by small groups. This transient use pattern seems to hold for most of the northern area as far as Turner-Look at the base of the Book Cliffs (Wormington 1955). It seems most likely that the site clusters described by Morss (1931) in the Pleasant Creek area and by Gunnerson (1957) at the base of the Henry Mountains near Hanksville will be found to be related to the Maze District.

The disturbing fact that accompanies "guesstimates" of home base regions for the aboriginal groups using the Maze District canyons is that the distances to locations suitable for permanent settlements are so great. Our impression is that the broad block of marginal lands stretching from the west bank of the Colorado River to the high plateaus was an area of common, occasional use by all agricultural groups of the region. Therefore, the cultural boundaries are extremely hazy. In this area the Fremont and Anasazi would have met as hunter-gatherers. Such a buffer zone situation may aid in the explanation of why both cultures remained relatively unaffected by their contact.

SUMMARY

A survey of selected areas of the Maze District undertaken by the Department of Anthropology, University of Utah located and recorded 248 sites of archeological significance. The information derived from the sites suggests that the area surveyed was occupied intermittently by prehistoric groups apparently for the harvesting of wild grasses, hunting, and procurement of lithic raw materials. Horticulture was practiced only along the banks of the Green and Colorado rivers where sufficient water was perennially available.

The evidence indicates an Archaic/Basketmaker II use followed by intensive Anasazi use of the district

between late Pueblo II and early Pueblo III. Fremont groups also utilized the region while protohistoric use by Ute and Piute parties is also a possibility.

Research of literature on the surrounding area prompted speculation of a home base for the Anasazi in the Salt Creek drainage and for the Fremont in the Pleasant Creek or Henry Mountain regions.

Five major communicative routes or channels were noted in the district. They were: the Labyrinthine Maze canyons, Horse Canyon and the benches north of it, the Standing Rocks-Doll House area, the Wide Valley-Main Flat area, and Range Canyon.

Survey of the Maze District raised almost as many questions as it answered, including: the presence of a previously undefined Archaic substratum; the cultural affiliation, age, and function of open camp sites with large slab-lined fire basins; the lack of Basketmaker III sites and artifacts; the cultural affiliation of certain

unusual upright slab and mud granaries and the nature of the material stored in them; the nature of Fremont/Anasazi interaction in the area; and, finally, the age and cultural affiliation of the Barrier Canyon style pictograph sites. These problems indicate the need for further work in the district including limited excavation.

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