THESIS

EXPLORING THE USE AND LIFE OF MANTLE'S CAVE (5MF1) THROUGH SPATIAL ANALYSIS

Submitted by

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ABSTRACT

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Rediscovered in the early 1900s, the captivating artifacts from Mantle's Cave (5MF1) caught the attention of enthusiasts and archaeologists alike. Nestled above the banks of the Yampa River in Dinosaur National Monument, the alcove cave was used by the Fremont (A.D. 1-1350) peoples. The site's primary excavation was completed by Charles R. Scoggin and Edison P. Lohr from 1939-1940 who were employed by the University of Colorado Museum of Natural History. Their work generated the primary interpretation of the site as a storage facility and has been supported by subsequent research.

This thesis works with the collection and archives related to the work of the University of Colorado to reconstruct how Mantle's Cave was used. Using literature on the markers of habitation, storage, and ritual behavior, this project evaluated how and where these elements were present at the site. This project found several markers of activity beyond storage was present at the site. An assessment of temporal data from the site was another component of this project. The results of this project suggest that Mantle's Cave was a place that Fremont people and some earlier people frequented to store items and complete a variety of everyday tasks.

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DEDICATION

For Charles R. Scoggin and Edison P. Lohr for
their dedication to archaeology and their country

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

Humans across the globe have turned to caves as places of refuge for thousands of years. The human imprint on caves can be traced through the archaeological record. From their unique preservation ability to their broad functional use, caves can offer a snapshot of human behavior that other sites cannot. Mantle's Cave (5MF1) is a site with a rich archaeological record and story worth exploring.

In this thesis, I examine how past people used Mantle's Cave to suit their needs. To explore the site's function, I questioned what elements of habitation, storage, and ritual behavior were present. Assessing the spatial extent of these behaviors was another component of this project and new approach to evaluate Mantle's Cave. This project also worked to understand the temporal range of the site to contextualize the site's history. Establishing a foundational understanding of the breadth of material and complexity of activity occurring at Mantle's Cave revealed a site that is multifaceted and was a key place on the landscape Fremont people were returning to intentionally.

Introduction to Mantle's Cave

Nestled above the Yampa River in the Castle Park Archaeological District of Dinosaur National Monument lies Mantle's Cave (Figure 1) (ARC.DNM04_004_013). The site is located within Moffat County, Colorado (Figure 2). The well-lit alcove cave "measures 100m east to west and extends approximately 40m from the back of the alcove to the dripline" (Horn and Reed 1989: section 7 page 1). The site is connected to the Fremont (A.D. 1 to A.D. 1350) through the features and cultural material recovered from the site (Burgh and Scoggin 1948). Known for its spectacular perishable items, Mantle's Cave has garnered attention from the archaeological community as well as the public.

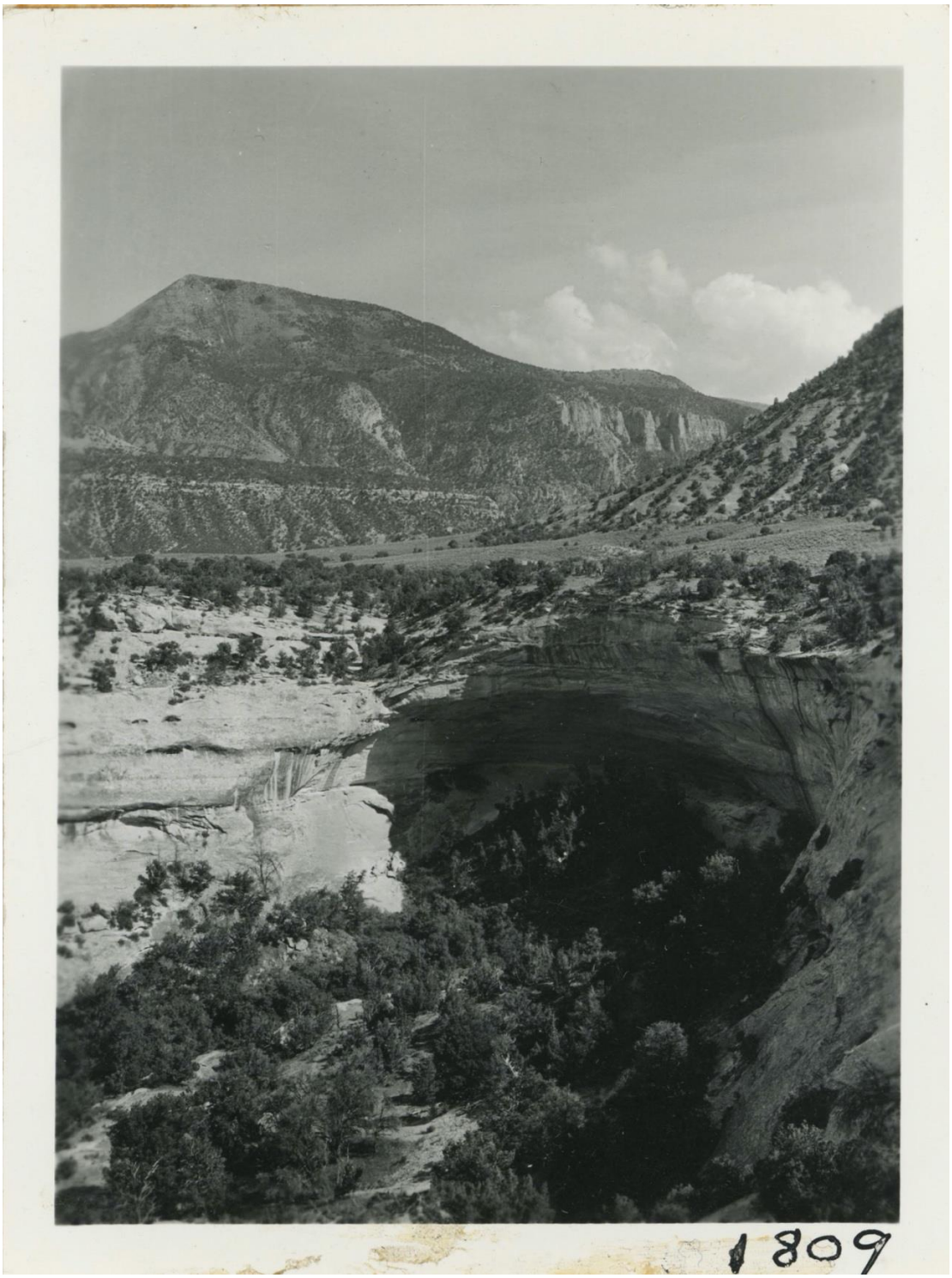

Figure 1. (L-10) "Mantle's Cave, from northwest portal of Cliff canyon. View to south to Martha's peak on Blue Mountain, which is on east side of Hell canyon through the mountain. May 27, 1940." ARC.DNM04_004_013

Figure 2. The green circle reflects the location of Mantle's Cave within Moffat County, Colorado.

Charley and Evelyn Mantle rediscovered the unique artifacts tucked away at the back of the cave in 1921 (Burgh and Scoggin 1948: 21). The family was the first to be captivated by the material they encountered. Numerous caches, or intentionally grouped items, would be subject to the interest of several hobbyist parties that ventured to the site after 1921 (ARC.DNM01). A pair of adventurers, Frank Lee and J.R. Jones, visited the site in 1939 and excavated several portions of the cave (ARC.DNM03). Enthralled by what they uncovered; the pair brought the material to the University of Colorado Museum (now called the University of Colorado Museum of Natural History [CUMNH]) to be evaluated (ARC.DNM01). The museum recognized the value of exploring the site further and arranged for Charles 'Chili' R. Scoggin and Edison P. Lohr to excavate the site.

Scoggin and Lohr began their work at the site in December of 1939 with support from the Mantle family. Their excavation targeted the back of the cave, where the cultural material appeared to be congregated (ARC.DNM02_001). The pair completed the most extensive excavation of the cave, and their interpretations serve as the foundation for the archaeological understanding of the site. Lohr and Scoggin renamed the cave from "Cliff House" to Mantle's Cave to reflect the Mantle family's role in the rediscovery and support of the excavation of the site (ARC.DNM02_001).

Based on the work by Scoggin and Lohr, Mantle's Cave has been interpreted as a storage facility (ARC.DNM01_001_001, ARC.DNM01_001_017, ARC.DNM01_001_018). The lack of habitation markers (hearths, middens, floors), an abundance of storage features, the absence of a burial, and the rich deposits of perishable items that were found in the back of the cave convinced the pair of the site's function (ARC.DNM01_001_001). The 1939-1940 work at the site was synthesized in a report by Robert F. Burgh and Charles R. Scoggin (1948) with additional details based on a smaller excavation of the site in 1948. Since the publication of the 1948 report, the scholarship on the site has been focused on the material from the caches. The collection contains a broad spectrum of items that can illuminate the complex range of activities occurring at Mantle's Cave.

My Project

As revealed in the features and artifacts from Mantle's Cave, the people who visited Mantle's Cave used it for purposes beyond storage. Features, or non-moveable aspects of an archaeological site, can inform scholars about activities at a site. In this project, I examined which cave components reflect storage, habitation, or ritual activity and analyze the spatial extent of these activities. Regional literature, along with archaeological studies on cave use,

served as the basis for establishing how I explored the material from Mantle's Cave. The site's temporal history is another dimension explored in this project. Establishing a fundamental explanation for how Mantle's Cave was used is essential for future projects at the site or studies of the surrounding area.

The previous literature has focused on detailed aspects of the cave, but a holistic report on the artifacts and features of Mantle's Cave has not been presented in its entirety (Burgh and Scoggin 1948; Goff 2010; Hewes 1952; Sommer 2013; Truesdale 1993). Reexamining elements of the Fremont culture at Mantle's Cave has the potential to bolster the literature on the Fremont of Colorado. In partnership with the University of Colorado Museum of Natural History, this project integrates objectives relevant to my research questions and the institution's collections management protocols. As an archaeologist, it is ethically imperative to work with existing collections to gain information from the available material before pursuing excavation projects. Revisiting this collection provided an opportunity to explore a site with a rich history.

Structure of Thesis

Chapter 2 provides an overview of the relevant literature on the Fremont and Mantle's Cave. The section on the Fremont provides an overview of the culture and how it is challenging to encapsulate. A focused look at the Uinta Fremont is included to provide context on the Fremont who inhabited the area of Mantle's Cave. A brief discussion of the archaeological work of Castle Park is included to provide context on the sites that lie in close proximity to Mantle's Cave. This chapter also includes an overview of all known archaeological work at Mantle's Cave, ranging from professional to hobbyist. A summary of the scholarship affiliated with Mantle's Cave is presented in this section. This chapter provides the basis for the cultural context of Mantle's Cave.

Exploring how archaeologists can analyze behavioral patterns in caves is the subject of Chapter 3. This section set up how behavior relating to habitation, storage, and ritual is evaluated for this project. Within this chapter, a discussion of the role a cave's physical attributes play in human use is included. Three caves are discussed in detail to serve as examples of sites used for habitation, storage, and ritual. Chapter 3 establishes the foundation for how I analyzed archaeological patterns at Mantle's Cave.

Chapter 4 details the methods used to address the research questions proposed in this project. Archives associated with Mantle's Cave, housed at the University of Colorado Museum of Natural History, serve as a significant basis of information for this project. As part of this project, I reviewed the paperwork, journals, photographs, and correspondence in the records. Examining the archaeological collection was another component of this project. This chapter includes an overview of the process I used to re-classify the material in the collection and the labels generated through this process. Using information from the archives and my review of the collection, I assessed the collection's completeness. This chapter also describes the process associated with selecting items from the collection for photography and the documentation process. Another section of the chapter describes the process of collecting spatial data and integrating this information into software so I could analyze spatial patterns of the cultural material from the site. A general overview of object provenience and spatial patterns is included. This section also includes how I collected information on the temporal elements at the site and how I plan to compare them. The selection of the methods used in this project enabled me to address my research questions.

Using the criteria established in Chapter 3, I explored the possibility that Mantle's Cave was a habitation site in Chapter 5. Through an examination of the archives and archaeological

collection, I identified material that suggested there was activity related to habitation occurring at the cave. The material appears to be congregated in four regions of the cave. My analysis revealed that past peoples used Mantle's Cave to support a broader range of behaviors that align with habitation.

Chapter 6 uses the same methodology as Chapter 5 to address the claim that Mantle's Cave was a storage site. After defining the site's storage features, I assessed how these curated spaces were used to store material. Reviewing other intentionally buried material is another component of this chapter. Viewing the material through a spatial lens illuminated the concentrations of storage areas across the cave that surprisingly did not always occur within the dedicated features. Scoggin and Lohr were right to connect this place with storage, though it does not appear to be the only function of the site.

Assessing the presence of ritual material and features at Mantle's Cave is the subject of Chapter 7. Characteristics of ritual caves are presented in Chapter 3. Using the methodology outlined in Chapter 4, I assess what material and places in the cave may have been used in the ceremonial life of the people who occupied Mantle's Cave. The primary connection to ceremonial life is seen in five caches and an isolated artifact from the site. Although these items were kept at Mantle's Cave, they were likely deposited at the site and then used elsewhere to complete ceremonies.

Exploring the temporal extent of Mantle's Cave is the focus of Chapter 8. To assess the site's history, several lines of evidence were analyzed. The collection currently has eleven radiocarbon dates affiliated with it that will serve as the primary temporal evidence from the site. The presence of several diagnostic artifacts will be explored in this chapter. Information from the archives will be used to analyze artifact provenience and stratigraphic relationships. Data

collected on tree ring dating, or dendrochronology, will also be discussed in this section. The results of the analysis strengthen the idea that more than one occupation of Mantle's Cave has occurred, though the primary affiliation of the site is still with the Fremont.

Chapter 9 marks the final section of this manuscript where the evidence presented in this study is tied together and presents a picture of what life at Mantle's Cave looked like. Past peoples would have used this site as a space for dynamic storage and as a base of activity in the area. The site was frequented by different iterations of the Fremont and possibly other groups. How this research impacts the interpretation of Mantle's Cave regarding the Castle Park area, and the broader Fremont community is another discussion in Chapter 9. To better understand the site, other institutions were contacted to see if they had any material relating to the site. The results of these conversations indicated that the bulk of material from Mantle's Cave is housed at the University of Colorado Museum of Natural History and some material is housed at Museum of Northwest Colorado. Possible avenues for future research are also included in this chapter. Targeted radiocarbon dating projects would bolster the understanding of Mantle's Cave. Strategically selecting items of different artifact classes and from different areas of the cave would enable researchers to better understand how widespread the site's use was through time. Completing a rehydration test to see if the coprolites from the site are from humans would also benefit the interpretation of this site. More complex spatial analysis could be completed using the database constructed in this project. The data gathered and interpretations made in this project hopefully will support future research of Mantle's Cave and the Fremont. My results suggest that Mantle's Cave had functions beyond what was suggested by Lohr, Scoggin, and Burgh (1948). The richness of the material and temporal extent of the site suggest that Mantle's Cave was an adaptable space for adaptable people.

CHAPTER 2: CONTEXTUAL FRAMEWORK

Overview

The following chapter provides an overview of the relevant scholarship on Mantle's Cave's cultural, regional, and site context. A brief overview of the Fremont is presented to support a later discussion of the Fremont components of Mantle's Cave. Information on the nearby sites in Castle Park highlights how the area's archeological material and excavation history are closely tied. The chapter also recounts the archaeological interest in the site prior to 1990. Scholarship that directly addresses Mantle's Cave is reviewed in this section. This chapter includes knowledge foundational to the discussions drawn out throughout this thesis.

The Fremont

Providing a concise discussion of who the Fremont were is challenging as archaeologists are still developing a clear picture of who these people were. The culture was first defined by Noel Morss in 1931 during his exploration of the Fremont River in Utah (Morss 1931). There are cultural markers that can be identified as Fremont by archaeologists. The use of the cultural markers and presence of these communities reflect a choice made by past people to participate in a social identity. The cultural material of the Fremont were influenced by groups from the Great Basin, northern Colorado, northwestern Plains, Basketmaker populations to the south (Spangler 2002: 317). This section will provide a general overview of the Fremont and a more focused discussion of the Fremont tradition associated with Mantle's Cave.

The Fremont culture extends across Utah into the periphery of eastern Nevada, southwestern Wyoming, and northwest Colorado (Spangler 2002). Sites affiliated with the Fremont have dated from A.D. 1 to A.D. 1350 (Madsen 1989). Fremont people organized themselves in a variety of structures to suit different subsistence and mobility preferences. To the

west, the Fremont were often organized into larger aggregations such as the villages at Five Finger Ridge, Wolf Village, and Paragonah in Utah (Richards et al. 2019). The eastern Fremont generally crafted smaller hamlets and had semi-mobile settlement patterns (Spangler 2002). Near the Castle Park area the Uinta Fremont, Douglas Creek Fremont, Tavaputs adaptation, and San Rafael Fremont have been identified. A compilation of traits is used to isolate the Fremont tradition at a site. However, this presents problems as "cultures and variants are only fragmentary remnants of adaptation but are not themselves units of adaptation" (Spangler 2002: 323). The diversity of Fremont culture makes it a compelling culture to study.

The Fremont exploited "every possible agricultural niche" to support their small communities (Simms 2008: 194). Uinta Fremont lifeways "involved the repeated occupation of seasonal base camps, often with ephemeral architecture, by larger family groups engaged in a wide range of plant gathering and processing, hunting of locally available game, and procurement of high-quality raw lithic materials" (Spangler 2002: 317). Bow-and-arrow technology appeared in the Fremont region around A.D. 100 to 200 (Simms 2008: 210). The Fremont continued to use the atlatl along with the bow and arrow (Spangler 2002: 302). Movement and adaptation were vital to the Fremont way of life (Simms 2008: 189).

Theoretical Discussions About the Fremont

Identifying who the Fremont were is a complicated task. Archaeologists have proposed several origin theories over the years. A.V. Kidder proposed the 'Northern Periphery' hypothesis in 1924, which theorizes that the farmers of Utah were people moving from the Southwest who brought their technology and traditions with them (Kidder 1924). The farmers Kidder theorized about would later be called the Fremont. Influence from Basketmaker II communities from the south are seen in several aspects of Fremont society, which lends credence to the 'Northern

Periphery' theory (Simms 2008: 198). The origins of the Fremont can also be theorized as a result of 'in situ' development by indigenous peoples. According to the 'in situ' development theory, the Late Archaic hunter-gatherer populations in the region adopted and/or modified horticultural and sedentary strategies, leading to the Fremont farmer-forager lifestyle (Spangler 2002: 318). The Desert Culture Concept by Jennings (1978) suggests that Fremont development was gradual, and the traits affiliated with the Fremont developed prior to their recognition as a culture. All theories may have an element of truth that reflect the Fremont as "a new cultural milieu that changes both indigenes and immigrants" (Simms 2008: 198).

Genetic evidence indicates that the Fremont share a common ancestral population with the Ancestral Puebloans "but subsequently diverged during the last 2,000 years due to random genetic drift caused by a lack of gene flow between the Great Salt Lake region and Anasazi [Ancestral Puebloan] territory" (Carlyle et al. 2000: 97). Genetic ties between the Greater Salt Lake Fremont and Numic-speaking groups are not evident (Carlyle et al. 2000: 97). More genetic testing could help identify the trajectory of the Fremont population. Pinpointing the origin of the Fremont is just another academic challenge associated with the population.

By A.D. 1300, the Fremont began to 'disappear' or 'abandon' certain areas (Spangler 2002). There is evidence of Fremont entities in the Great Salt Lake area between A.D. 1250 to 1345, though this is considered an isolated phenomenon (Spangler 2002: 407). Archaeologists have proposed various explanations for the apparent decline of the Fremont. Identifying changes in subsistence and mobility structures suggest that Fremont populations moved away from a sedentary life rooted in horticulture and transitioned back to a mobile hunter-gatherer lifestyle. Responses to climate, interactions with Numic populations, migration, and integration into new societies are all possible theories to explain the 'end' of the Fremont (Spangler 2002: 406).

A period of climate stress began around A.D. 1200 and limited the resources available to Fremont populations. Challenges associated with competing for reduced wild resources could have forced the Fremont to merge with other groups or seek refuge farther away (Spangler 2002: 408). Numic peoples, who were living in the area, "reverted to hunting and gathering in the wake of climatic stress" (Spangler 2002: 406). The Fremont were no strangers to environmental challenges; this climate event could have exasperated an already delicate situation.

Archaeolingusitic, ethnological, and archaeological data suggest that population migration may explain the apparent 'end' of the Fremont (Ortman and McNeil 2018). A hypothesis by Ortman and McNeil (2018) theorizes that "the Kiowa speech community originated in the Eastern Fremont area around 450 CE, drifted northward to the Yellowstone area after 1300 CE, and then migrated south and east to the Southern Plains during historic times" (Ortman and McNeil 2018: 153). Although it was likely only one of the languages spoken in the Fremont area, the Kiowa language and the movement of the people who spoke it could explain where the Fremont went (Ortman and McNeil 2018: 159). Similarities between "Eastern Fremont and Northwest Plains rock art, and historic Kiowa ledger art" and connections between "Fremont and Castle Gardens imagery with historic Kiowa warrior culture" provide archaeological support for this hypothesis (Ortman and McNeil 2018: 163-164). Biological data could support this hypothesis, along with "additional research on correlations between rock art and historic Kiowa material culture and oral tradition" (Ortman and McNeil 2018: 168). The proposed migration of the Kiowa-speaking Fremont could explain their departure from the northern Colorado and Utah region by about A.D. 1300.

'Numic Replacement' is considered one of the more robust theories for why the Fremont record appears to have ended (Spangler 2002). Numic-speaking populations are thought to have

entered the eastern Great Basin by “A.D. 1000 and somewhat later in northeastern Utah, southern Idaho and western Wyoming” (Spangler 2002: 403). The Numic language branch includes “Shoshone and Ute languages spoken by indigenous populations who inhabited the Uinta Basin, southwestern Wyoming and northwestern Colorado at the time of historic contact” (Spangler 2002: 404). Archaeological evidence from Hogup Cave in Utah supports “the idea of ethnic and cultural replacement of the Fremont by Numic-speaking peoples” (Aikens et al. 1999: 204). The extent to which Numic peoples ‘replaced’ the Fremont is the greatest source of debate. The idea of ‘Numic Replacement’ could be used to explain why the Fremont culture becomes less prevalent in the archaeological record.

The Uinta Fremont

The Uinta Fremont were a variant of the Fremont active from A.D. 650 to 950 (Spangler 2002: 324). Northeast Utah, southwest Wyoming, and northwest Colorado served as a regional extent for the Uinta Fremont (Figure 3). Radiocarbon dating in the region suggests the area was occupied relatively continuously (Spangler 2002: 402). The Uinta Basin is known for its “vast and often dramatic ecosystem of sparse deserts, riparian lowlands, pinyon-juniper communities along foothills, and high elevation forests" (Bauer 2022: 6). Several technologies and cultural items can be used to define the Uinta Fremont.

Figure 3. Map from Keyser (2016) depicts the Uinta Fremont boundaries and those of the surrounding communities. The "numbers indicate 1, Red Canyon of the Green River; 2, Browns Park; 3, Uinta Basin (outlined with dashed line); 4, Douglas Creek/Canyon Pintado area; 5, Tavaputs Plateau" (Keyser 2016:22).

Subsistence strategies employed by the Uinta Fremont reflect their deep knowledge of the environment. The Uinta Fremont used hunter-gatherer strategies along with horticultural practices. The Fremont exploited both large and small game (Spangler 2002). Fremont cultigens included maize, beans, and squash. Maize was introduced to the Uinta Basin by A.D. 100 to 250 and became well established by A.D. 650 (Spangler 2002: 359). Dent maize was grown by the

Fremont in the Uinta Basin and Colorado Plateau, and it was successful due to its drought and cold-tolerant qualities (Simms 2008: 212). The Fremont utilized caching strategies to increase food security by storing food in dedicated spaces scattered across the landscape (Spangler 2002: 357). Utilizing a variety of subsistence strategies, the Uinta Fremont were able to thrive in a challenging environment.

Fremont architecture in the Uinta Basin and Colorado Plateau is primarily observed in three forms. Pithouses were the primary dwelling structure of the Fremont (Simms 2008: 188). These structures "vary in size but typically contain central hearths, small storage facilities, and internal structural supports" (Richards et al. 205). Pinnacles are "open masonry structures perched on isolated outcrops and pinnacle landforms … are in remote and rugged areas with commanding viewsheds" are another Fremont architectural feature (Bauer 2022:1). Granaries are another hallmark feature of Fremont sites (LaBelle and Meyer 2023; Simms 2008: 189). These are often erected using masonry technology and are often found in association with maize (Spangler 2002: 352). Architecture among the Uinta Fremont was primarily restricted to forms of shelter and increasing storage opportunities.

The Fremont developed several lithic technologies to help them address technological challenges. Rose Spring corner-notched points are the primary chipped stone technology found in early assemblages (Spangler 2002: 304). After 900 B.P., more projectile point styles were developed on the Colorado Plateau, including the "Uinta side-notched to the north and Nawthis side-notched and Bull Creek points to the south" (Madsen and Simms 1998: 302). In the Great Basin, later projectile point styles include the Bear River side-notched, Parowan basal-notched, and Eastgate points (Madsen and Simms 1998: 303). Points can reflect a connection to Ancestral Puebloan lithic traditions (Madsen and Simms 1998). Various other chipped stone technologies

are found at Fremont sites, including drills and knives (Madsen and Simms 1998: 303). The Fremont utilized diverse raw materials such as obsidian, chert, chalcedony, and more. Lithic technology provides a common link between Fremont groups that can be identified.

Development of a clear basketry tradition was another element of Fremont life. There are basketry techniques that are "spatially and temporally unique to the Fremont culture" (Spangler 2002: 391). Fremont basketry employs twined and coiled technologies to construct baskets (Adovasio et al. 2002). The style is thought to reflect their connection to previous Archaic populations from which they emerged (Adovasio et al. 2002: 20). Fremont basketry supported a broad use of activities, including storage, transportation, drying surfaces, and food preparation.

Pottery is another technological development used by the Fremont. In this area, ceramic technology was adopted "between A.D. 200 and 500, and the shift to a grayware technology by A.D. 600, is generally viewed as a response to changing subsistence patterns reflected in the need for more diverse and durable containers for cooking and storage" (Spangler 2002: 384). Villages specializing in ceramic production developed after A.D. 1000 (Spangler 2002: 324). Fremont ceramic typologies were synthesized by Rex Madsen in 1977. In his typology, he included nine ceramic types: Great Salt Lake Gray, Uinta Gray, Sevier Gray, Emery Gray, Ivie Creek Black-on-white, Snake Valley Gray, Snake Valley Black-on-gray, Snake Valley Corrugated, and Paragonah Coiled (Madsen 1977). Recent work with temper analysis has proved useful in distinguishing between these typologies (Watkins 2009). Though typologies are a useful classification system, it is important to consider their limitations and to continue to work toward ways of distinguishing pottery types (Biela 2024). Among the eastern Fremont, Uinta Gray is the predominant ceramic type recovered from sites. It is identified by its smoothed

surface and angular calcite temper (Madsen 1977; Watkins 2009). The use of pottery reflects larger trends in Fremont life relating to subsistence and mobility.

Footwear style is another identifiable trait of the Fremont. Fremont moccasins are the primary form of clothing found in the archaeological record. The moccasins were "constructed from the hock or dew-claw of a deer or mountain sheep sewn onto the moccasin as the heel portion of the sole" (Spangler 2002: 392). The Fremont constructed sandals; however, they were not recovered as often (Madsen 1989). Providing protection from the terrain and weather, Fremont footwear was another solution to the situations encountered by the people.

The Uinta Fremont are connected primarily to the Classic Vernal Style rock art tradition (Keyser 2016). Classic Vernal style can include outlined, non-outlined, and solidly pecked styles (Keyser 2016:36). Anthropomorphs are depicted as having "large trapezoidal bodies decorated with necklaces and crowned with elaborate horned headgear usually embellished with earrings or hairbobs" (Keyser and Poetschat 2017: 157). Figures are also known to carry detached heads and spears possibly signifying warfare or territorial claims (Keyser and Poetschat 2017: 160). Depictions of scenes such as the "Great Hunt" in Nine Mile Canyon, Utah, is another form of expression in the Classic Vernal Style Tradition. Similarities have been noted between the Classic Vernal Style and early Basketmaker rock art motifs (Spangler 2002: 314). Within Dinosaur National Monument, rock art panels in the San Rafael style are documented and reflect the presence of Fremont populations (Keyser and Poetschat 2017: 166). Art in the monument also commonly contains "abstract interior decorations" (Spangler 2002: 400). Across various scenes and spaces, the connection of the Uinta Fremont to the panels can be established through common elements.

Roughly 400 Fremont figurines have been discovered (Janetski 201). The figurines can depict males, females, pregnant females, and infant entities (Yoder 2023). Anatomy and clothing have been used to distinguish the sex of the individuals; in total, there are more female than male figurines (Spangler 2002: 398, Yoder 2023). Figurines from the Colorado Plateau are often more detailed and commonly feature "skirts or aprons, belts and, in several instances, rudimentary feet" (Janetski 2012). Paint, incisions, and punctations on the figurines could be interpreted as styles or bodily modifications the Fremont may have used on their bodies (Yoder 2023). An analysis of their construction suggests that the figurines were manufactured by adults in Fremont communities (Yoder 2023: 212). The Pilling Figures from Range Creek, Utah, are some of the most well-known Fremont figures. Eleven decorated figurines represent both male and female and female anthropomorphs and are thought to form pairs (Pitblado et al. 2013). The figurines have distinctive impressions on their backs from being laid on Fremont baskets to dry (Pitblado et al. 2013: 4-6). Archaeologists continue to explore the possible role these figurines played in society. Janetski (2012) supports the idea originally posed by Steward (1937), stating that "all are related in some way to a desire for fertility of women either as a fetish to bring a woman success in conception and/or in a broader sense the success of farming societies perhaps via fertility-related rituals" (Janetski 2012). Fremont figurines reflect an expression of their belief system that is not always captured in the record.

Archaeologists continue to study the Fremont to understand their ceremonial life and ideology better. Both rock art and figurines have been ascribed to "ceremonial or shamanistic functions" (Spangler 2002: 397). Fremont "rock art provides some support for this in the frequency of formally decorated anthropomorphs displaying ritual costume and yet conveying individuality. Rituals would have represented the power held by individuals and, more

importantly, would have symbolized the membership of powerful, charismatic individuals in lineages and, at times, larger organizations. Rock art depicting rows of individuals holding hands, perhaps participating in ritual, suggests communalism" (Simms 2010: 59-60). At Fremont sites, the widespread presence of feathers highlights the people's connection of certain species to ceremonial or symbolic roles (Lambert et al. 2019: 38). Spiritual elements of the Fremont people's world have been identified; however, a deeper understanding of this material is still needed.

Defining who the Fremont were and their history is a complicated task. The Fremont display a variety of distinct behavioral traits and also incorporates traits from nearby cultures. Regional adaptations within the Fremont showcase the variety of lifeways and material culture associated with the groups. A closer look at the material from Mantle's Cave has the potential to bolster the records of the Fremont in Colorado and beyond.

Castle Park Background

Castle Park is one area inside of Dinosaur National Monument. The monument was established to celebrate the paleontological discoveries there in October of 1915 and only covered 80 acres at the time (Bernard et al. 2004: vii). Several factors influenced later expansion of the monument including environmental protection and "historic and scientific interest" (Bernard et al. 2004: 1). The Castle Park Archaeological District was created in 1938 (Bernard et al. 2004: 1). The name of the district comes "from the narrow strip of floodplain below fortress-like cliffs called a 'park ' or 'hole' in the regional vernacular. Access into Castle Park is limited to two side canyons south of the Yampa River or through the river corridor itself" (Bernard and Prokopetz 2005: section 7, page 1). Thirty-three archaeological sites have been found within the district's 680 acres (Bernard and Prokopetz 2005: section 7, page 1). Of these 33 sites, "23 are

prehistoric, nine have both prehistoric and protohistoric components, and one is Euro-American historic" (Bernard and Prokopetz 2005: section 7, page 3). The history of the sites and the excavations in Castle Park are tied to the story of Mantle's Cave. Regarding the Fremont, Castle Park is one of the farthest east concentrations of Fremont sites (Breternitz 1970: 160). Within this section, only a selection of sites will be included based on their connection to Mantle's Cave.

Within the district, a variety of site types are present that span several periods. Relevant site types include open dwellings, dwelling sites with surface structures, open campsites, and rock shelters (Breternitz 1970: 4). The caves, or rock shelters, in the area, have four general similarities; "almost no evidence of residential use," presence of storage features, no burials, and low quantities of pottery (Burgh and Scoggin 1948: 16). The Cub Creek area of the Monument has evidence of a pithouse community that dates to the Fremont (Finley et al. 2020: 94). There is evidence of occupation in the Castle Park area that extends into the historic period (Burgh and Scoggin 1948: 78). The record contained in Castle Park offers a glimpse of past peoples' history.

Hells Midden (5MF16) is located about a half mile downstream from Mantle's Cave (Burgh and Scoggin 1948: 26). The site is known for the "volume and depth of occupational debris" that "is unrivaled in the Yampa Canyon" (Burgh and Scoggin 1948: 26). Excavated in 1940, 1941, 1947, 1948, the site had much material to reveal (Little 2024). Fremont material is present at the site, but the stratigraphy contains deeper deposits that extend "to a depth of 4.55 meters below the surface of the midden (Lister 1951:1). Historically, the site was interpreted as a midden for a nearby habitation site possibly on the terrace above the midden (Burgh and Scoggin 1948: 29). Recently, work by Spencer Little (2024) has taken a deeper look at the site and provided new context on the deposits through radiocarbon dating and analysis of the artifact types and frequencies. Material "from the horticultural stage of Hells Midden is similar to that

from Mantle's Cave and to that of the Fremont culture, although we lack the evidence of perishable material which was so prevalent in cave sites" (Lister 1951: 45). Storage features at Hells Midden are also similar to those at Mantle's Cave (Little 2024). Hells Midden illustrates the depth of human occupation in Castle Park.

Marigold Cave (5MF9) is another site in close proximity to Mantle's Cave. Some preliminary work and artifact collection was done by a crew in 1948 led by Robert Burgh and Robert Lister (Burgh and Scoggin 1948). Herbert Dick led excavations at the site in 1949 (Burgh 1950: 19). The site has five house floors, hearths, and some masonry granaries. One of the masonry granaries is a large structure divided into four sections (Burgh and Scoggin 1948: 33). The site's southeast exposure was thought to support the site's classification as a habitation site. Three posts have been recovered from Marigold Cave similar to the poles found in Moss Cave, a nearby site (Burgh and Scoggin 1948: 37, Burgh 1950: 20). A sample of wood from the site was dated to A.D. 1200 ±60, placing the site within the range of Fremont activity in the canyon (Truesdale et al. 1993). The site is one of the few with pottery in the area (Burgh and Scoggin 1948: 66). Three unique bird figurines (UCM 06638) were recovered from the site. The birds have holes in their sides that could fit a stick through them, enabling them to be suspended and appear in flight. Figurines were only recovered from one other site, Rat Midden, in the area (Spangler 2002). There is room for more work to be done on the collection for Marigold Cave.

Several other sites in the area display some connections to Mantle's Cave. Burnt House Village (42UN279) has pits "identical" to those in Mantle's Cave filled with foodstuffs (Breternitz 1970: 63). Artifacts from Basket Cave (5MF10) also appeared to be similar in nature to Mantle's Cave (Burgh and Scoggin 1948: 20). Castle Park contains several rock art panels, some of which were drawn by Scoggin in 1942 during his later work in the Monument

(ARC.DNM01_002). Castle Park has been a place where past peoples have chosen to return to through time. The Fremont culture has strong connections to this area, with elements of the culture identified at several sites. Mantle's Cave is culturally part of this regional system and has the ability to provide a greater understanding of the area once further analysis is completed.

Castle Park continued to be a place of interest after the Fremont. Ute, Arapaho, and Shoshone peoples visited Castle Park from A.D. 1300 to 1881 (Bernard and Prokopetz 2005: section 7 page 6). Their presence in the park is thought to relate to seasonal hunting activities (Bernard and Prokopetz 2005: section 7 page 22). Archaeologically, the groups presence is seen in "standing brush architecture, historic artifacts, and historical accounts" (Bernard and Prokopetz 2005: section 7 page 6). European accounts from the 17th century reference "native peoples of the plateau and canyon lands as Utes, Shoshone, or even Ute-Shoshonean peoples as conditioned by overlapping territories" (Bernard et al. 2004: 54). Scoggin included Charley Mantle's report of seeing Utes and their pack horses in the canyon in the fall of 1937 (ARC.DNM01_001_004: 85). Castle Park continued to be a place of interest after the Fremont.

Work at Mantle's Cave

Mantle's Cave has received attention from various hobbyist and professional groups. The discovery of the site in the early 1900s and the lack of detailed records for each visit to the site complicate the interpretation of the site. Eleven parties visited the site from 1921 to 1948 (Table 1). The site has likely been visited more times than the documentation suggests, as it is an intriguing place located on a popular waterway.

Table 1. Known parties from 1921-1950 who visited Mantle's Cave.

Who	When	Citation	Why There	Extent of Work
Charley and Evelyn Mantle	1921 – 1930s	Brown 1933; ARC.DNM01_001_001	Curiosity about the area around their property	Disturbed materials; possible collection of material
Krieger-MacCandles, Kimbal, White Party	1921	ARC.DNM01_001_015	Exploration	Interest in the masonry granaries
Penrose-Taylor Expedition	August 1933	Brown 1933	Expedition by Colorado College and Fountain Valley School of the Yampa River	Disturbed materials; possible collection of material
Tom Gray	1938	ARC.DNM01_001_015	Connection to Pat Mantle	Dug and disturbed cists
Dick Jones	1939	ARC.DNM01_001_015	Connection to Pat Mantle	Dug and disturbed cists
Frank C. Lee and J.R. Jones	1939	ARC.DNM03	Exploration	Dug and recovered material from the site. Brought material to CUMNH
Hugo Rodeck and Charles Scoggin	November 1939	ARC.DNM03	Following up on the interest generated by Lee and Jones.	Explored the site and removed some artifacts
Charles Scoggin and Edison Lohr	1939-1940	ARC.DNM01_001_001	Work for CUMNH	Excavate portion of the cave and return material to CUMNH
Perry-Mansfield Group	Summer 1940	ARC.DNM01_001_015	Exploration	Dug and disturbed cists; no material recovered
Charles Scoggin	1942	ARC.DNM01_002	Survey of the Yampa River for the National Park Service	Photographed site features and recorded notes about changes to site
1948 Crew	1948	ARC.DNM01_004_001; ARC.DNM01_004_003	Working at nearby sites of Hells Midden and Marigold Cave	Dug three units; encountered cultural material; brought some items back to CUMNH

The Mantle Family

From supporting later excavations of the site to conducting their own work, the Mantle family had a tremendous impact on shaping the understanding of Mantle's Cave. Charley Mantle bought the squatters' rights to the nearby land in 1919 (LaBelle 2019: 3). Documents suggest that

visits to the site began in 1921 (Brown 1937). The family took an interest in the site and made some of the initial findings at the site. Evelyn Mantle “found corn cobs with a stick in the end of each, also a cob with two sticks in either end, and two cobs attached together, in one of the mud cists down on the slope west of the main surface in the cave” (ARC.DNM01_001_015). Later excavations found more of the cobs with sticks inserted (Figure 4). She investigated the cists when she saw a red rock slab covering the formation (ARC.DNM01_001_015). Mr. Ed Lewis was said to have assisted Mrs. Mantle in her exploration of the site (ARC.DNM01_001_017). It is unclear whether or not the family collected the items they found.

Mrs. Mantle also uncovered a cache while exploring the cave (Brown 1935). She found the cache “about a foot below the present sand level in between two granaries” (Brown 1935: 11). On top of the cache was a “piece of rye-grass matting” and the cache was laid “upon a large, flat, shaped stone” (Brown 1935: 11). The cache consisted of “a large piece of buffalo hide, a stone knife, two spear points, a stone awl and a bone basket-weaving needle” (Brown 1935: 11). The legacy of the Mantle Family is reflected in the site's name and how the archaeology there unfolded.

Figure 4. One pair of corn on a stick (UCM 06225) recovered from the site. Photo by Ira Bock. Copyright University of Colorado Museum of Natural History.

The Krieger-MacCandles, Kimbal, White Party

After the Mantle family's initial work at the site, the Krieger-MacCandles, Kimbal, White Party visited the site in 1921. Archaeologist Charles Scoggin wrote that the "party evidently went into the place, but their description of it conflicts with present information," of how the site looks (ARC.DNM01_001_017). They did not appear to have conducted any digging during their visit (ARC.DNM01_001_017). More information on the Krieger-MacCandles, Kimbal, White party visit to the site is needed to understand their disturbance to the site better.

The Penrose-Taylor Expedition

The Penrose-Taylor Expedition traveled to Mantle's Cave in August of 1933 as part of a joint project by the Colorado Biological Survey, Colorado College, and the Fountain Valley School (Brown 1937; LaBelle 2019). Their expedition was focused on exploring the Yampa

Canyon for prehistoric ruins (Brown 1937: 22). The group "set about a systematic excavation of" Mantle's Cave (Brown 1935: 10). The whereabouts of the material removed from the cave during the Penrose-Taylor Expedition are unknown even after efforts to track down the material were made (personal communication, Dr. LaBelle 2023). They identified four 'sites' within Mantle's Cave based on their observation of features and materials.

The Penrose-Taylor Expedition documented the locations of the sites within the cave (Figure 5). Site "A" consists of "a group of four granaries and "two large stones that have fallen from the roof" (Brown 1937: 24). Two granaries "at the extreme west end of the cave" were labeled as Site "B" (Brown 1937: 24). Site "C" is described as "a large mound to the east of site "A" … It was evident that at least the upper portion was due to a celling fall" (Brown 1937: 24). A trench through Site "C" suggested five episodes of ceiling falls had occurred at the cave. They believed that 'Site D' was a house site based on the presence of sherds, a flint awl, a bone needle, and the results of their two test pits (Brown 1937: 26). The 'sites' within the cave suggest that Mantle's Cave served various purposes and was occupied at several intervals.

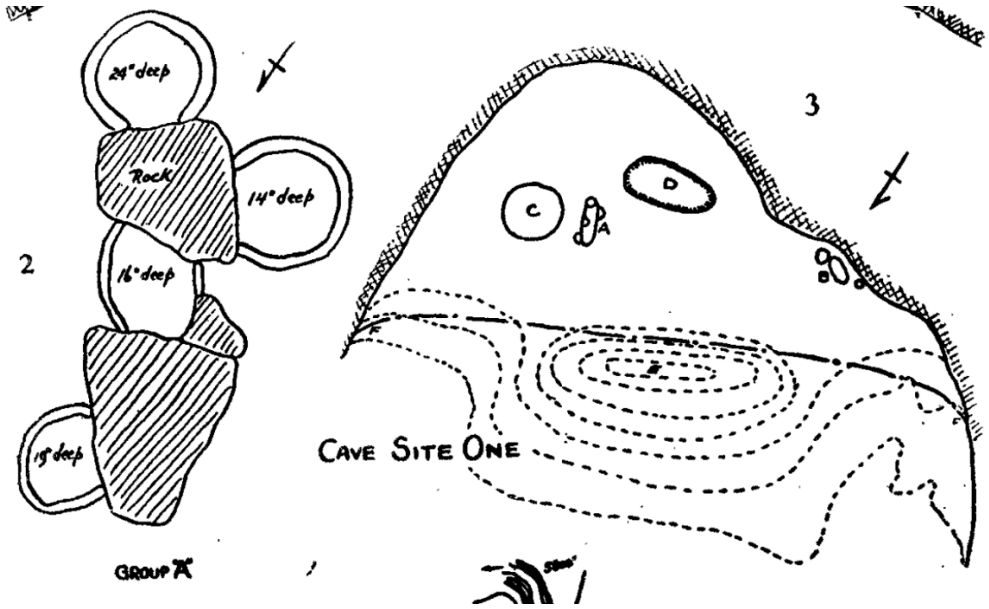

Figure 5. From Brown (1937), four 'sites' were identified by the Penrose-Taylor Expedition at Mantle's Cave and are labeled A, B, C, and D.

The group was the first to document the storage features at the site (LaBelle 2019: 5). Inside and around the storage features they observed "many fragments of the clay and wattle granary covers" (Brown 1937: 24). Within the granary fill they found maize cobs and squash fragments (Brown 1937: 24). The construction of the slab-lined cists was similar to Basketmaker traditions they had previously observed (Brown 1935: 11). They were struck by the masonry granaries which they thought were "something really new to archaeology" (Brown 1935: 11). The expedition believed that they had "not only found a new culture area but a new culture, the missing link between the primitive Basket-Makers and the much more advanced early Pueblo or "Cliff dweller" culture" (Brown 1935: 12). The Penrose-Taylor Expedition was one of the first well-documented projects at the site, and their work highlights how the use of Mantle's Cave did not appear to be singular (Figure 6).

Figure 6. "General view inside Cave One, Castle Park" (Brown 1935: 27). This image provides a perspective of Mantle's Cave before later excavations of the site. Large sediment accumulations, rocks, and plants are visible on the cave floor.

Tom Gray

Another individual who dug at Mantle's Cave was Tom Gray. He is said to have been a visitor who, along with Pat Mantle, dug in the area of the cists in 1938 (ARC.DNM01_001_015). In Scoggin's journal, he refers to Gray as an "arrow hunter" (ARC.DNM01_001_003: 18). Tom Gray may have been from Fort Collins, Colorado, or had some connection to the place according to the field notes (ARC.DNM01_001_015). Scoggin and Lohr documented the disturbance in the cists, but it is unclear how much of an impact Tom Gray and Pat Mantle had.

Dick Jones

Pat Mantle later brought Dick Jones to the site in 1939. Like Gray before him, Jones was interested in the cists and dug through several of them (ARC.DNM01_001_015). While at the site, Pat Mantle and Dick Jones uncovered more cists and "grubbed out a large starvis berry bush growing here, before they could start to dig" (ARC.DNM01_001_015). Whether or not the material was uncovered or removed is unclear, but Scoggin and Lohr noted the disruption to the record.

Frank C. Lee and J.R. Jones

In the summer of 1939, Frank C. Lee and J.R. Jones went on an adventure in Yampa Canyon (LaBelle 2019). The pair stopped at Mantle's Cave on their journey and made several exciting discoveries while there. They excavated one of the slab-lined cists in the cave located at the back of the site in Cave B (ARC.DNM01_001_017). Notably, the gentlemen uncovered a cache that would later be labeled Cache 2 (Burgh and Scoggin 1948: 22). The cache consisted of a globular basket (UCM 05957), fishhooks (UCM 05960), several game snare bundles (UCM 05947, 05959, 05961, 05962), and a net bag (05948a, 05948b). Items from the cache were found inside the globular basket at "the rear of the cave, four paces, or 12 feet, from the east end of the

large rock fall, where the big masonry cist is located" (ARC.DNM01_001_018). In total, the pair collected 48 cataloged items from the cave (ARC.DNM01_001_017). Lee and Jones believed the material had some significance and brought it to the University of Colorado Museum of Natural History for esteemed archaeologist Earl Morris to review.

Hugo Rodeck and Charles Scoggin

After Lee and Jones brought the material to the museum, the institution decided to investigate if more work should be done at the site. Museum director Hugo Rodeck and museum employee and student Charles Scoggin conducted a preliminary site visit in November 1939 (ARC.DNM03). The pair were also trying to ascertain if the Mantle family would support an excavation of the site. While visiting Mantle's Cave, the pair collected nine artifacts and returned them to the museum (ARC.DNM01_001_018). It is unclear where the items came from, as no known notes are associated with this early visit. Rodeck and Scoggin believed that it would be valuable to excavate the site. They fostered a relationship with the Mantle family, which led to the subsequent professional excavations of the cave.

Charles Scoggin and Edison Lohr

The University of Colorado Museum of Natural History sent Charles Scoggin and Edison Lohr to excavate the site that late fall and winter. The pair had previously worked together for several years at the Lindenmeier (5LR13) site, a Folsom-era site located north of Fort Collins, Colorado, under the direction of Frank Roberts (LaBelle 2019: 5). The Mantle Family allowed Lohr and Scoggin to live in their home and helped them survive while completing their winter excavation (ARC.DNM01_001_001). Lohr later reflected on their winter excavating in a short magazine article stating "a man has to be more than a little crazy to attempt archaeology in northwestern Colorado in winter. Chili and I were crazy" (Lohr 1948: 3). Excavation of Mantle's

Cave began on December 12, 1939 and finished on May 30, 1940 (ARC.DNM01_001_001; ARC.DNM01_001_003).

In their time at the site, the pair excavated "roughly 17% of the site area" (Horn and Reed 1989: section 7 page 2). The excavation units ranged in depth and were generally 5x5 feet squares (ARC.DNM01_001_018). Material recovered from the cave was brought back to CUMNH in Boulder. Lohr and Scoggin completed the most detailed and thorough excavation of the cave. The map (Figure 7) created by the pair serves as the foundation for the mapping work for this thesis and the methods of translating this map will be discussed later.

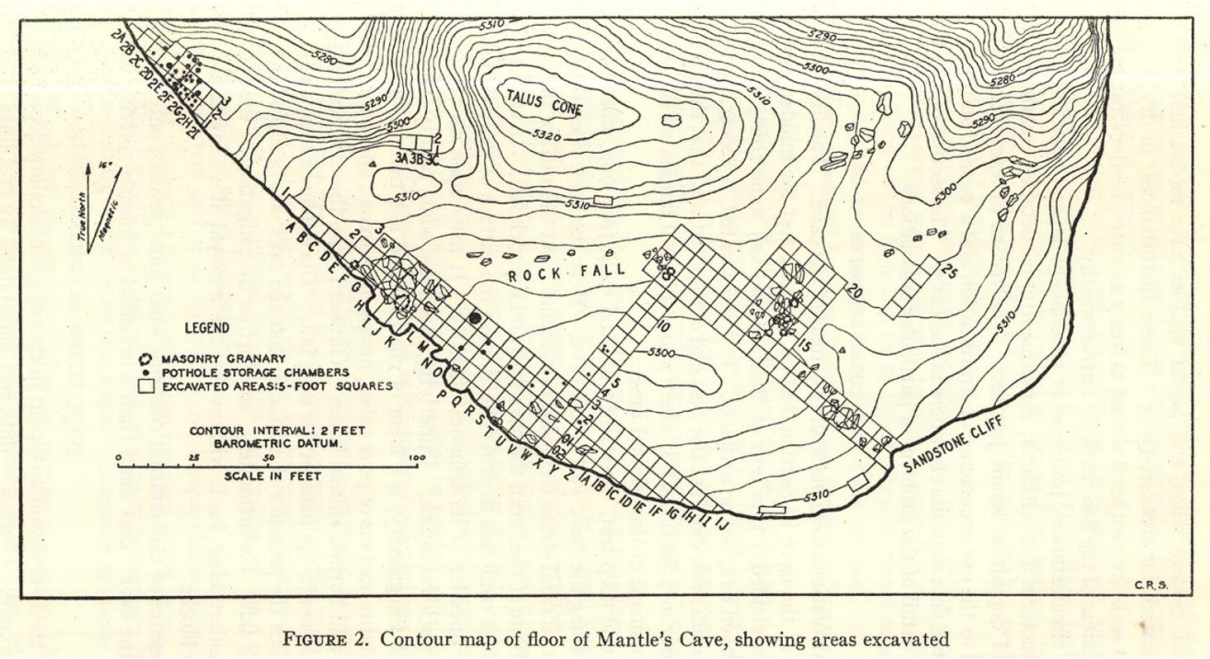

Figure 7. The only accessible copy of the excavation map of Mantle's Cave by Charles Scoggin is found in Burgh and Scoggin (1948). Each square represents a roughly 5x5 foot square. Lohr and Scoggin targeted the back of the cave where notable deposits were first discovered. Several features including areas of rock fall, the talus cone, masonry granaries, cists, and changes in topography are noted on the map.

Details in the field notes and reports reveal some of the field techniques used by Scoggin and Lohr. The pair documented their work at the site through photographs, annotations in field books, bag tags, and data sheets. The level of detail and quality of work done by Lohr and Scoggin reflects their training at Lindenmeier (LaBelle 2019). Four trenches were dug at the

cave; the deepest trench extended seven feet down and did not yield any artifacts (ARC.DNM01_001_018, Burgh and Scoggin 1948:24). The archaeological units were "identified as unit areas five feet square, above and to the right of the lines indicated by letter and number" (Burgh and Scoggin 1948: 25). A datum was established at the site to help take accurate elevation readings. During the excavation, several areas of features or disturbances were identified. Some of the "pot-hunter" debris was removed to uncover undisturbed cists (ARC.DNM01_001_015). The areas include Group 2 of masonry cists, Group C of masonry cists, Sub-cave A, Sub-cave B, and Sub-cave C. More details on the material and observations made at the site will be included in later chapters.

Within the initial fieldwork documents, several ideas about the site were revealed. More than one occupational level was noted at the site, and several distinct layers were identified (ARC.DNM01_001_017; Burgh and Scoggin 1948: 25). Scoggin's journals reflect an admiration for the material they encountered. Lohr and Scoggin interpreted the site as a place predominantly used for storage based on four primary factors. The first was that it lacked hearths, house floors, middens, and that the roof of the cave was not stained by smoke (ARC.DNM01_001_002). The abundance of granaries in the cave also indicated to them that this was a place primarily for storage (ARC.DNM01_001_002). The rich deposits of perishable items found in the back of the cave were the third factor that convinced Scoggin and Lohr that Mantle's Cave was only used for storage (ARC.DNM01_001_002). Absence of human burials was also considered in their classification of the cave as a storage-only site (ARC.DNM01_001_001). The work by Scoggin and Lohr created a lasting impact on the history and interpretation of Mantle's Cave.

Perry-Mansfield Group

The site had another set of visitors in the summer of 1940, the Perry-Mansfield Group. There is limited information known about their venture to the site. Ed Lewis told Scoggin and Lohr that the group dug one of the 'pits' but found nothing inside of it (ARC.DNM01_001_015). Even though the account of the Perry-Mansfield Group is incomplete it is important to note that they did not encounter any cultural material.

Scoggin Returns

Chili served as a park ranger in Dinosaur National Monument in the summer of 1941. Scoggin returned to Mantle's Cave in June of 1942 (ARC.DNM01_002). He was back in the monument to complete survey work along the Yampa and Green Rivers with a new crew (ARC.DNM01_002). The group was reviewing the area at the request of the National Park Service "to determine the approximate number, extent, and scientific importance of any prehistoric or historic Indian ruins located in areas that would be flooded by the possible future construction of dams along these two rivers" (Baldwin 1947: 31). While they did not excavate Mantle's Cave any further, Scoggin took several photos of some of the features present at the site (Field journal of Charles Scoggin: 3). Most of his records for that summer focus on petroglyphs, crew members, and other notes about the material encountered along the Yampa (ARC.DNM01_002). 1942 marks Scoggin's last work in Dinosaur National Monument before his tragic death while serving in the U.S. Army at Anzio, Italy, on February 2, 1944 (LaBelle and Scoggin 2016: 90).

1948 CUMNH Crew

The last historic excavation occurred in 1948 by a crew affiliated with the University of Colorado Museum of Natural History. The group, led by Robert Burgh, primarily focused on

excavating Hells Midden and Marigold Cave. Burgh had previously visited Mantle's Cave in October of 1947 and remarked that the "probability of the use of Mantle's Cave as a seasonal shelter at harvest time for agricultural tribes in the region" was likely (ARC.DNM04_003_001). Tasked with finishing the Castle Part report, Burgh likely returned to the site in June of 1948 to help expand his understanding of the site. The group found some of the old unit markers from the 1939-1940 excavation and strategically picked units to dig. B.W. Houseknecht detailed the units dug by the 1948 crew in his journal (Figure 8). They found a basket (UCM 06520), broken blade fragment (UCM 6744), charcoal (UCM TIN-0544), burnt bone, a flake, a handstone, clay, maize cobs, and the bottom of Lohr and Scoggin's excavation units (ARC.DNM01_004_001; ARC.DNM01_004_003). The limited dig by the 1948 crew shows that Mantle's Cave still had more cultural material and that it is crucial to continue to study the site.

Figure 8. The units highlighted in green reflect the units revisited by the 1948 crew (ARC.DNM01_004_003). Journal records do not indicate why these units were selected to resample. Limited cultural material was recovered from these units.

1989 Alpine Archaeological Consultants, Inc. Crew

In 1989, a team from Alpine Archaeological Consultants, Inc. visited the site to complete some stabilization work and prepare a nomination for the site to be recognized and protected under the National Register of Historic Places (Horn and Reed 1989: Section 7 page 6). Johnathon Horn and Alan Reed led the team and provided an overview of the features and previous work at the site. They identified and mapped six back dirt piles and some rock piles from previous archaeological work at the site (Horn and Reed 1989: Section 7, page 1). The grid system created by Scoggin and Lohr was "still visible, painted on the back of the alcove wall" (Horn and Reed 1989: Section 7 page 2). The location of the 'sites' mentioned in Brown (1933) lined up with some of the features the 1989 crew mapped. While at the site, "no artifacts and very little charcoal and ash are visible on the floor surface, but burned and unburned animal bones and a few unburned corn cobs are scattered about" (Horn and Reed 1989: Section 7 page 1). Measurements of the features and descriptions of them are included in the report.

The nomination form is also the first to reference rock art at the site, which is described as the "one prehistoric cultural feature which is not a storage cist is a small rock art panel located near the east end of the cave" (Horn and Reed 1989: Section 7 page 3). The art is described as a "partial set of three concentric rings" located 30cm above the cave surface (Horn and Reed 1989: section 7, page 14). The cool temperature of the cave, as well as the lack of direct sunlight on "the main portion of the alcove," is also noted (Horn and Reed 1989: Section 7 page 5). Due to the nature of the original excavations of the cave, Horn and Reed suggest that radiocarbon dating would help provide more insight into the cultural affiliation of the artifacts (Horn and Reed 1989: Section 8 page 2). The report also discusses the interpretative efforts by the Park Service to help visitors to Dinosaur National Monument better understand the site (Horn and Reed 1989:

Section 8 page 2). The observations of the 1989 crew and their understanding of past findings at the site led them to support the designation of the site as a place for storage.

Scholarship on Mantle's Cave

Several accounts of Castle Park and the Fremont include details on Mantle's Cave. The caches of Mantle's Cave have been the primary focus of past studies. Through the analysis of the caches, a discourse on what populations are affiliated with the site emerged. The literature also supported the idea that it was only functional as a storage space.

Robert Burgh and Charles Scoggin

The seminal report by Burgh and Scoggin (1948) is an exceptional piece of scholarship that highlights the University of Colorado Museum of Natural History's work in the Castle Park region from 1939 to 1948. Burgh gave Scoggin posthumous credit as a testament to the hard work done by Scoggin in this area (Burgh and Scoggin 1948, LaBelle 2019). This document went beyond the caches to include the most complete report of the material from Mantle's Cave, though the caches and storage features were the primary focus. Based on the observations of Lohr and Scoggin the report supports the idea that "with one exception, no clearly defined occupational strata were found, since the cave never served as a residence. Over most of the cave floor, the levels are irregular, and the cultural debris is mixed because of a variety of circumstances" (Burgh and Scoggin 1948: 22). Drawings of artifacts, maps, and other figures included in this volume provide valuable insight on the 1939-1940 excavation of the cave. The piece highlights artifacts from Mantle's Cave and other sites and attempts to classify them according to archaeological cultures. Pieces from Mantle's Cave were connected to the Basketmaker tradition and Fremont communities in Utah (Burgh and Scoggin 1948: 36, 62). The information presented here aligns with the observations Scoggin and Lohr made while

positioning Mantle's Cave as the prime example of perishable artifacts and storage features in Castle Park. The piece by Burgh and Scoggin (1948) provides the foundational knowledge of archaeological understanding of Mantle's Cave and Castle Park.

Gordon Hewes

Gordon Hewes (1952) was the first to intensively examine the flicker feather regalia (UCM 06178) from Cache 1 in Mantle's Cave (Figure 9). He recognized the "similarity of this ancient ceremonial headdress, apart from its fur trimming to the ethnographic flicker-quill headbands of California" and began to investigate what cultural connections could explain this style of regalia (Hewes 1952: 147). The article includes several details about the construction and possible origin of the regalia.

Figure 9. The striking Flicker Feather Regalia (UCM 06178) from Cache 1 of Mantle's Cave. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Using ethnographic and archaeological data, Hewes examined the likely origin of the style of regalia. He notes that the yellow quills appear to have been inserted into the middle

section at the time of the item's original construction (Figure 10). (Hewes 1952: 148). Feathers were found at six of the Fremont River sites visited by Morss as he defined the Fremont culture (Hewes 1952: 149). Hewes fell into the school of thought that saw the Fremont as a "Basketmaker manifestation extending along the Green River and its tributaries and dating from about 400 to 800 A.D." (Hewes 1952: 147). Hewes perceived the idea of 'independent invention' as less likely as the nearby cultures were likely interacting with the Fremont at Mantle's Cave (Hewes 1952: 153). A ceremonial complex stretching from California to the Green River drainage could explain the similarities in regalia styles (Hewes 1952: 153). A migration of Fremont people from Colorado across the Great Basin to California and back could also explain how the style developed (Hewes 1952: 153). Cultural diffusion, migration, or independent creation are the three general categories used in archaeology to explain how development occurs. All could be used to explain how the people of Mantle's Cave decided to craft the extraordinary flicker-feather regalia. Hewes believed that an intersection of cultures resulted in this specific form of regalia, specifically that an influence from central California had permeated the Colorado Fremont (Hewes 1952: 153).

Figure 10. A close up of the yellow-shafted flicker feathers from the Flicker Feather Regalia (UCM 06178) is depicted here. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

James Truesdale

The flicker feather regalia (UCM 06178) was the subject of another detailed report by James Truesdale (1993). Truesdale wanted to continue to analyze the object to help determine cultural affiliation (Sommer 1993: 26). He noted that Burgh and Scoggin (1948), Cole (1991), and Gunnerson (1969) believed that the regalia is affiliated with the Fremont. However, Truesdale saw elements of both Numic and Fremont characteristics in the piece (Truesdale 1993: 31). Two radiocarbon samples were taken from the regalia, one from the fur and one from the leather. These samples generated radiocarbon dates of A.D. 1001 to 1275 and A.D. 900 to 1160, respectively (Truesdale 1993: 28-29). The dates generated correspond with the "Fremont/Numic transition in the Uintah Basin dates between A.D. 1000 and 1250 and was, perhaps, more of a blending of peoples than the abandonment of one group and reoccupation of a territory by

another" (Truesdale 1993: 31). Truesdale's work has implications for the cultural affiliation of Mantle's Cave as well as the history of the Fremont.

Shelia Goff

A detailed publication on the cordage styles and caches from Mantle's Cave was completed by Shelia Goff (2010). By examining cordage style, Goff hoped to identify what social groups were present at the site (Goff 2010: 33). Several anthropological studies have supported the notion that "twist direction has been determined to be a standardized, learned behavior which is culture-specific and transferred from generation to generation thus providing information about social group practices" (Goff 2010: 34). One hundred ninety-nine pieces of cordage were included in her study from a variety of sources in the collection (Goff 2010: 41). Goff found that 90.5% "of the cordage in the Mantle's Cave assemblage is zS" but there are some other styles present (Goff 2010: 42).

Goff completed the most extensive dating of the site adding an additional six dates. The most unexpected date came from the deerskin headcover (UCM 06102) and placed it within the Middle Archaic (5000 – 1000 B.C.) archaeological period (Goff 2010: 48). This date was far earlier than expected and was even more interesting considering it came from a cache with a pair of shoes (UCM 6193) that dates to the Fremont era. With the knowledge of these dates, Goff "suggests that Mantle's Cave was a place on the landscape that was visited and returned to over time. I speculate that Middle Archaic users of the site left behind the deerskin headdress and that subsequent Fremont users, of a different social group than the dominant one using Mantle's Cave, came upon it and added objects of their own, the pair of moccasins" (Goff 2010: 48).

Goff also provided a description of the caches from the site and added Cache 1A to the list of caches. From her analysis of cordage, there appears to be slight transitions as the same

social group or descendants revisit the site (Goff 2010: 49). Storage continued to be the primary interpretation of the site. The new radiocarbon dates highlighted the importance of revisiting collections to better understand if previous cultural affiliations are true. Goff's work showcased who the people of Mantle's Cave were in a more detailed light.

Caitlin Sommer

Caitlin Sommer examined the feathers from Mantle's Cave to explore what groups are associated with the artifacts from the site. In her master's thesis, Sommer discusses the feather objects from the site, the caches, and some of the other features at Mantle's Cave (Sommer 2013: 181). Archaeological and ethnographic evidence from Puebloan, Great Plains, northern Mexico, and Great Basin groups were used in the comparative analysis of the cultural material from Mantle's Cave. The colorful flicker feather regalia (UCM 06178) was described in detail. Of the 370 feathers, a small number were yellow, likely from Northern yellow-shafted Flickers. This species of Flicker is thought to "rarely stray west of the Rocky Mountains," while the Northern, red-shafted Flicker is found commonly in northwest Colorado (Sommer 2013: 113). Along with the flicker feather regalia, there were three other feather bundles in Cache 1. Cache 4 also contained feathers similar to those in the regalia from Cache 1 (Sommer 2013). Sommer dated the feathers from Cache 4, and it returned a date of A.D. 1085 to 1135, which fits within the Fremont component of the site (Sommer 2013: 117). More bundles of feathers, loose feathers, and bird quills were found at the site.

After analyzing the feathers, Sommer believed that ten bird species were represented in the collection (Sommer 2013: 111-112). Her analysis suggests that the feathers were mainly locally acquired. Sommer also included several descriptions of Scoggin and Lohr's work at the site, such as an interpretation of the location of Trenches A and B at Mantle's Cave (Sommer

2013: 124). Continuing with the interpretation of others, Sommer supports the idea that the cave was used for storage (Sommer 2013: 32). Through her examination of the feathers, Sommer found "that the working hypothesis was incorrect; the relationships between animacy, context, and symbolic conceptualizations do not help determine cultural identity, as that concept is conventionally defined and applied" (Sommer 2013: 181). Though the analysis supported "with reasonable confidence that when it comes to feathers, the Fremont look much like Basketmaker peoples, Desert Culture peoples, and northern Plains peoples" (Sommer 2013: 185). Sommer worked to complete the cultural analysis of one object class from Mantle's Cave.

Reflection

The historic work at Mantle's Cave adds another layer to the site's story that is also important to unravel. The work and literature on Mantle's Cave have focused primarily on the storage features and caches from the site. Previous scholars suggest the site was a storage facility for Fremont people and perhaps others. Discussions of who the Fremont and who influenced the people of Mantle's Cave are also central to the scholarship on the site. The rich record of the Colorado Fremont encapsulated by the collection from Mantle's Cave enables questions about what people were doing at this site and Fremont activity in Castle Park to be explored further.

CHAPTER 3: CAVE STUDIES

Overview

Reviewing a variety of archaeological cave studies provided a framework for analyzing the behavioral history of Mantle's Cave. This chapter discusses some of the lessons learned from this review. The physical attributes of caves have to be considered alongside the cultural material to understand how past people molded caves to their needs. Another section of this chapter reviews the different ways habitation, storage and ritual behavior can be identified at sites. Case studies of a habitation, storage, and ritual cave are presented to show the complexity associated with each cave function. Examining the approaches archaeologists take to study cave sites revealed a wealth of information.

Caves and rockshelters are natural formations that provide unique opportunities for use. The organization of space to serve different functions can be described as the 'spatial site structure' (Galanidou 2000: 244). A study on 113 hunter-gatherer groups documented over 180 uses for caves and rock shelters (Agnolin 2021). Understanding the behavioral units present and their relationship to the space itself is an important component of archaeological cave studies.

General Cave Studies Discussion

Unlike some other site locations, caves and rockshelters have a set footprint which restricts what can be done in the available space (Bailey and Galanidou 2009: 222). Small, cramped, rocky, and hard-to-use spaces are less likely to be selected for use (Robinson 2017: 166). Rockfall or other obstructions can also limit usable floor space. Within shelters, the central portion of the cave where ceiling height is not restrictive is likely to be the center of activity (Franklin et al. 2010: 474-475). Activities will usually be concentrated away from areas with seep spots at the periphery or where water features are (Franklin et al. 2010: 474-475). The

sheltered nature of these sites can outweigh space in the criteria for selection if the needs of the group depend more on protection than size (Koenig 2012: 106-107). When looking at how people have used a site, it is vital to recognize that the space available plays a role in what can be done at the site (Greer and Greer 2009: 90).

Aspect is another criterion to assess how functional a cave or rockshelter would be for a population. When analyzing this attribute, it is essential to consider temperature and how the space would be used in certain climates (Agnolin 2021). Generally, “south-facing rockshelters tended to be utilized more in the colder months because increased solar radiation during this time allowed for maximum warmth," (Franklin et al. 2010: 448). Similar to size, the needs of a group may outweigh the selection patterns observed concerning aspect.

Another key criterion to consider is how far light permeates into a cave or rockshelter (Greer and Greer 2010). There are both functional and spiritual dimensions to this attribute. If the light does not reach all portions of the cave, activity could be limited without the support of torches or other devices. In a sample of cave use on the Northern Plains of North America, cave mouths and twilight zones were often associated with “habitation, subsistence, and performance of daily routines” (Greer and Greer 2010: 159). While “locations deeper within the extended twilight zone, transitional dark zone, and the most distant interior dark zone of larger caverns also were used, but probably more for special purposes and rituals than more mundane practices of everyday life” (Greer and Greer 2010: 159). Observing how light zones occur in a cave can contribute to a deeper understanding of the place’s function.

Caves, like other archaeological sites, can be frequented by groups over extended periods. Mixing and reuse of items or features can occur, so it is important to work on differentiating behavioral patterns between occupations. These palimpsests are not barriers to

archaeological interpretation, but opportunities to understand the “mixtures of materials that may have been actively recognized as such by the prehistoric occupants and deliberately enhanced, providing both physical resources that could be recycled for subsequent use and material cues for a sense of time and place," (Bailey and Galanidou 2009: 215). Connecting groups across a cave and through time is a challenge, though it can reveal how people were tethered to a place through time.

Identifying Activity at Cave Sites

Habitation

Caves and rockshelters can be used as occupational bases. As used here, habitation refers to the extended use of a site by a set group who uses the site to reside in and complete activities in. I created a flowchart of the possible habitational uses of cave sites, as reflected by features and artifacts (Figure 11. The following paragraphs will explore why the markers depicted in Figure 11 can be connected to habitation.

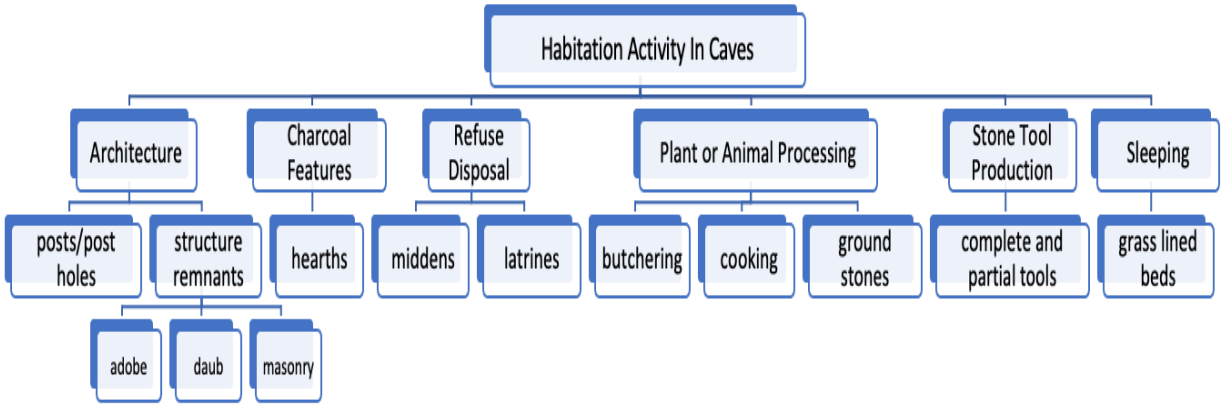

Figure 11. The flow chart describes archaeological evidence of habitation activities in caves. The literature on cave studies supplied the qualities of habitation outlined here.

Architectural elements can be constructed in caves to provide the inhabitants with more protection and comfort. Post holes are one indicator of past habitation in caves, and they often last longer than the poles themselves (Greer and Greer 2010: 157). Wickiups, walled rooms, or small houses are other architectural elements found in caves, even though they are rare (Greer and Greer 2010: 157). The creation of a platform or floor with stones or other materials can indicate habitation (Greer and Greer 2009:93). Sites with remnants of structures are one of the clearer indicators of habitation.

Evidence of charcoal features is another compelling piece of evidence when arguing the function of a site. Habitation can be seen in "the reuse of a single major hearth complex" or "rather a series of smaller and more sharply defined individual hearths or hearth complexes located in different parts of the cave at different periods of its history" (Bailey and Galanidou

2009: 232). Studying charcoal rates can also help archaeologists delineate periods of increased human presence (Burney et al. 2006: 224). Charcoal can indicate material processing, cooking, a need for warmth, a desire for light, and more. The presence of burned rock middens, a type of hearth, alongside basketry, wooden artifacts, and other material supports the possibility of "habitation occurring within rockshelters" (Koenig 2012: 7). It is essential to distinguish between areas burned by natural events or people, this can be done by examining the physical extent of the burn area, what material was burned, and the depth of the charcoal extent. Charcoal deposits can support the argument that a site was inhabited.

A refuse disposal system is another facet to include when considering the habitation of a space. From human waste to food waste to broken items, refuse will accumulate in a place where people spend time. Coprolites are one form of refuse that can reveal seasonality, approximate length of occupation, and sometimes the individual's diet (Koenig 2012: 4, McDonough 2019: 5977). A study revealed that Hidden Cave, Nevada was primarily inhabited by women based on the coprolites present (Rhode 2003). Beyond human waste, middens can be found in caves as collections of discarded items pile up. There are variable ways to deal with refuse and these behaviors often conform to cultural procedures as well as the constraints of the cave (Galanidou 2000).

Evidence of faunal, floral, and lithic processing are other metrics for assessing the habitation of a space. Concentrations at sites where processing of material that was hunted or gathered indicates occupation of the area, even if it is a seasonal occupation (Franklin et al. 2010: 474). Hide and cultigen processing, butchering, and cooking are examples of specific processing activities (Franklin et al. 2010: 447). Production of bone and stone tools are other indicators of residence at a site (Galanidou 2000: 257). Regarding lithics, "archaeological sites with high

numbers of tools and tool fragments and low to moderate percentages of late stage debitage were residential locations and/or repeatedly occupied camp sites" (Franklin et al. 2010: 464). Horsethief Cave (48BH304), located in northeast Wyoming, has “intensive ashy deposits with burned rock, chipped stone tools, flaking debitage, and large amounts of butchered bone that indicate repeated use of the interior entrance area for habitation" (Greer and Greer 2010: 158). Processing can indicate habitation, but it is best used in conjunction with other attributes to definitively consider the space a place of occupation.

Sleeping quarters are a reality of living at a site. Grass-lined beds are one form that can be difficult to capture in the archaeological record due to the organic nature of the bedding (Koenig 2012: 4). Areas may be modified by leveling or carving out areas for sleep. Placing mats or other coverings can make rocky or sandy surfaces more comfortable. Traces of sleeping quarters can help solidify an argument for habitation if preserved in the record.

Sites that were inhabited can also have overlaps with other types of sites. The internment of human remains at habitation sites is a documented phenomenon (Koenig 2012: 7). Caching behavior can also occur at habitation sites. Tools or food that need to be accessed while the space is inhabited may present as storage behavior even though access to the items was meant to support residents. Occupation of a site represents a coalescence of activity.

Storage

The sheltered and often dry nature of caves can make them an ideal spot for storage. For this analysis, storage refers to the intentional deposition of items to retrieve at a later date. Two general types of storage include informal and formal storage. Informal storage does not make use of specific storage areas, while formal storage requires designated storage areas or vessels to be used (Kent 1999: 80). Another way to analyze storage is through the designation of items as

active or passive gear. Items within the active gear category are “current, or being used regularly, and this that it is distributed differentially within sites and in different patterns of association” (Binford 1979: 256). In contrast, passive gear refers to items not in use that are stored (Binford 1979: 256). Caches, or the intentional grouping of items, are just one-way items can be stored. Storage is a strategy that can be molded to meet several needs.

Using a cave or rockshelter for storage is a frequently documented phenomenon (Agnolin 2021: 3). The signatures of storage in the record as seen in caves and rockshelters can be broken into two general categories (Figure 12). Material being stored in caves can cover a wide range of categories, with “the most frequent kinds of stored technologies [being] religious artifacts (diverse amulets and relics, as well as clothes used in rituals), followed by plant foods (mostly seeds and dried fruits)” (Agnolin 2021: 4). Caves are often natural places of refuge which can be enhanced through the use of storage technology.

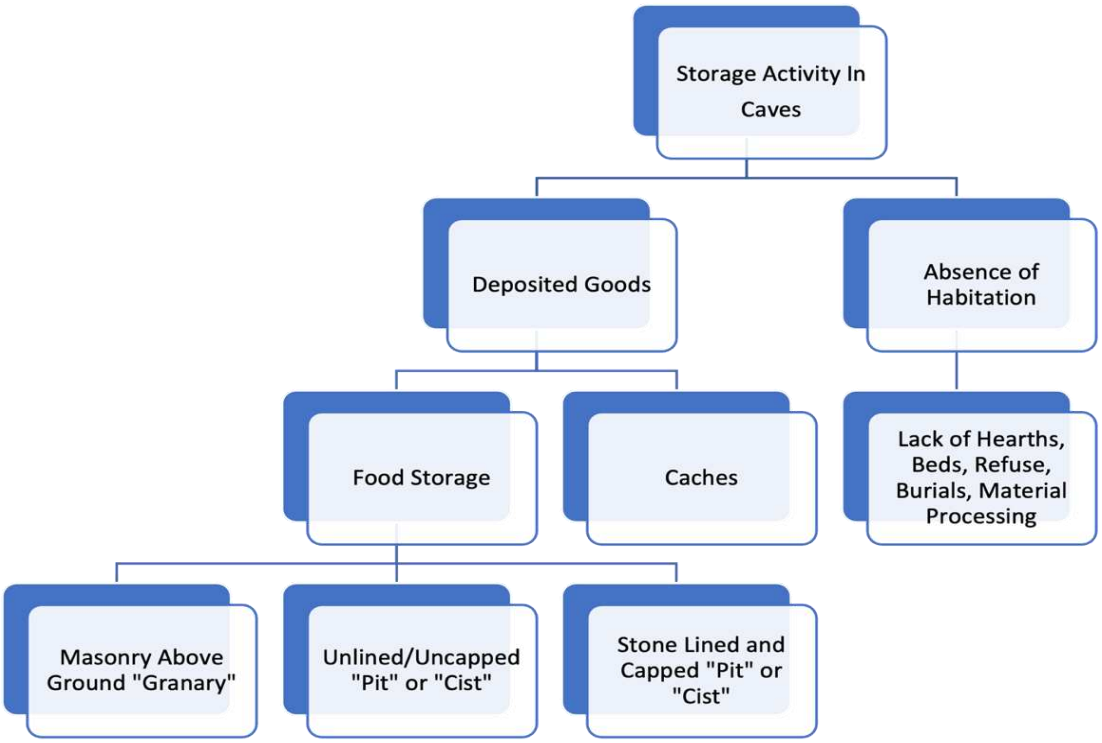

Figure 12. The flow chart depicts the different ways storage behavior can manifest in caves. Descriptions of storage activity in caves cave from a variety of archaeological studies on caves.

Caches, or the deposits of selected material to suit a function, are the broad category of storage features present at sites. The collection of materials can support both habitation and ritual activities, making it difficult to determine how a site is being used. When items are collected and deposited with the intent to be collected later, storage is the cache's function. If items are cached with the idea that they will remain in that place undisturbed, the cache is more likely related to ritual behavior. A cache can take many forms and appear in the record with or without containers to solidify their grouping. Archaeologists must assess the proximity of items and how the material can relate to each other to determine if it is a purposeful deposit or just an amalgamation of material (Chase and Chase 2010: 8-9). The creation and internment of these collections of items can reveal how people sought to address various technological issues or express their connection to the world around them.

Committing to a sedentary food storage location leads to a more restricted mobility pattern (Agnolin 2021: 7). Semi-sedentary groups or those with set seasonal rounds can take advantage of caves and rockshelters for their ability to store food (Plew 2003: 278). Leaving material in these shelters requires them to be hidden within the site or within close range so that a group may protect them from outsiders (Yoder 2005). Dedicated food storage can be seen in "food caches, storage pits, or features containing food or traces of foodstuffs, lined/unlined pits, and stone/rock features lining excavated features or delimiting them" (Plew 2003: 272). Food storage can contain both floral and faunal material. Increasing food security through dedicated storage sites would enable populations to stay tethered to one place for longer periods.

Determining that a site was used primarily to meet storage needs requires that to be the dominant behavioral signature. The absence of habitation markers alone does not determine that a site was used for storage; they must be observed in conjunction with other lines of evidence. Lack of hearths, beds, refuse, and material processing areas can be more indicative of storage rather than habitation. Storage of retrievable material is not commonly associated with burials in caves either. Storage features and cache presence at a cave is a form of limited activity that does not indicate "residential use of cave/rockshelter on a regular basis within the settlement system" (Agnolin 2021: 2). Storage is a reality of life, and the role storage sites play in the lives of past people can be traced archaeologically.

Ritual

The term ritual has abundant definitions, further complicating the archaeological identification of the phenomenon (Susnow 2022: 378-379). In this discussion, ritual refers to the enactment of specific behaviors to fulfill specific religious or spiritual procedures. Ritual items are objects that reveal intentional, spiritually motivated behavior through contextual

examination. To ascertain what constitutes ceremonial activity, a fundamental understanding of "mundane actions at a site and within a social system" is required (Susnow 2022: 389). Indigenous groups in United States also have variety of spiritual connections to caves that go beyond visible physical manifestations such as viewing caves as passages to the underworld, places of emergence, or homes of mythical beings (Blakeslee 2012; Sundstrom 2003). Ritual activity in caves can usually be overserved in four archaeological markers (Figure 13). Sites with ritual significance can be interpreted by considering artifacts, features, burial, artistic, and spiritual contexts.

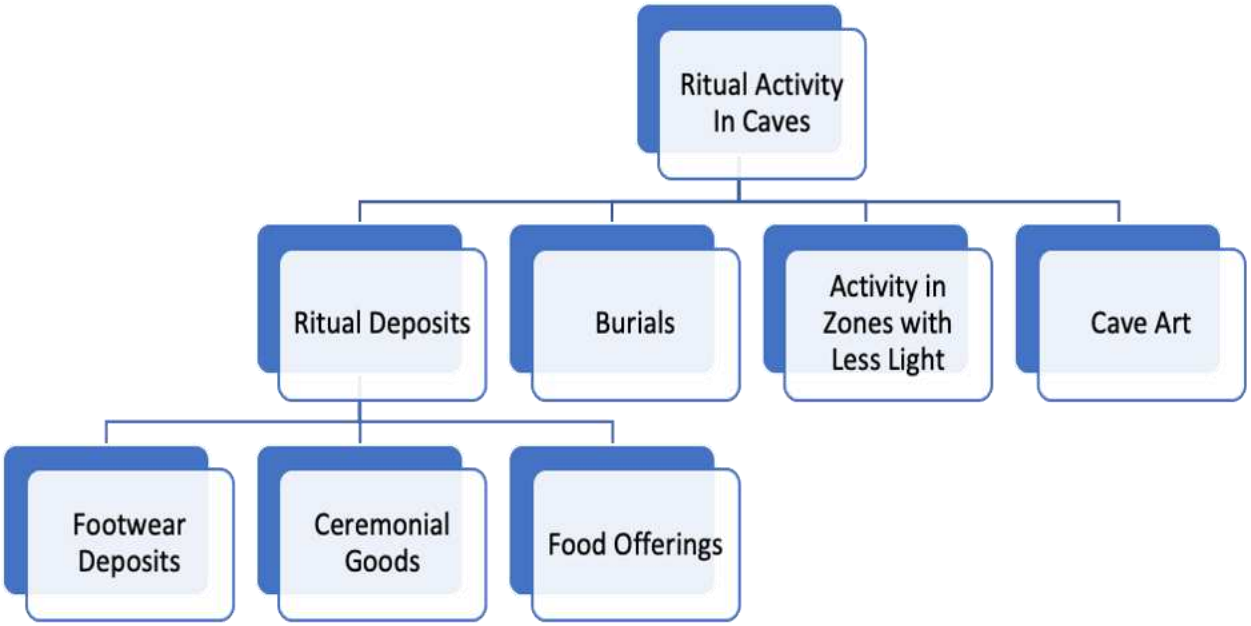

Figure 13. Traits observed in ritual caves are described in this flow chart. Information from a variety of cave studies was used to populate this chart.

As discussed previously, caches can also have spiritual connotations. Ceremonial caches are intentionally grouped items that are separate from items interred with buried individuals (Kosakowsky and Robin 2012: 46; Stemp et al. 2018: 891). Offerings and caches are often

expressions of community rituals that support a group's worldview (Kosakowsky and Robin 2012: 45). Some examples of offering items in the western portion of North America include "finely made projectile points (often large spear points), feathers, flutes, beads, combs, prayer sticks, wands, and other decorative and ceremonial objects. Such offerings deep in the cave may be from a single person or associated with a group ceremony" (Greer and Greer 2009: 93). The identicality behind the collection and depositing of these items is a marker of ritual connections to a space.

Exploring the artifact and feature level of ritual behavior requires knowledge from caves and beyond. In the Late Classic period, two dedicatory caches were ritually incorporated into the plaza floor at Pook's Hill, Belize (Stemp et al. 2018: 893). The location of these items, the connection to the iconography present at the site, and the items themselves led archaeologists to interpret them as caches for bloodletting (Stemp et al. 2018: 898). Examining the artifacts, context, and broader societal practices is one path for identifying ritual elements. Context is a powerful indicator of ritual, as seen in the analysis of the ollas in Kuaua's Kiva III niche in New Mexico (Schaafsma 2009). Kivas are ceremonial spaces in the Puebloan world (Schaafsma 2009: 664). The art surrounding the niche depicts "rain, snow, and lightning on either side," and the ollas were placed on the shelf of the niche (Schaafsma 2009: 684). These water jars are nestled in a place of ritual importance with iconography that connects directly to water, an important resource to the Puebloan people (Schaafsma 2009). Similar to the dedicatory caches from Pook's Hill, several spiritual connections between the artifacts and ritual practices can be made, which supports their classification. The presence of artifacts or features "within the extended twilight zone, transitional dark zone, and the most distant interior dark zone of larger caverns" can also signal a ritual connection (Greer and Greer 2010: 159). Contextual knowledge of where an

artifact came from and how a society would have used it is the best way to support the classification of a cache or feature as ritualistic in nature.

The internment of individuals is a process that links a group to that place, which can imbue that place with significance or power. Burials have been documented at sites that previously served as storage or habitation spaces (Agnolin 2021: 3). Reuse of space for burial can “amplify their social and ritual importance” (Gilmore 2008: 95). Funerary rites are generally unique to a culture and often “are used to express and intensify a network of social, political, and economic transactions” (Gilmore 2008: 83). The presence of a burial alone can indicate the power of a place.

Rock art is a form of expression that can be connected to ritual beliefs and behavior. Even if rock art is present in a cave, its application can be ambiguous to the cave’s occupation unless more evidence connected to the display can be found (Scott et al. 2014: 87). Ritual rock art can tell stories, predict the future, describe spaces where power can be obtained, or depict where visions are revealed (Sundstrom 2003). Within a cave, “rock art most frequently occurs in entrance areas and in the Daylight Zone with hundreds of examples, many just out of direct sunlight" (Greer and Greer 2009:92). Imagery can also be found in the Twilight Zone, Transitional Dark Zone, and the Dark Zone but these are rarer in western portions of North America (Greer and Greer 2009: 92). The content of the images, as well as their location, can signal ritual significance.

It would be remiss to ignore the role that evidence beyond the physical can play in the discussion of ritual spaces. Engaging with descendant communities or consulting ethnographic records can support exploring what ritual means to the cultures being studied (Schaafsma 2009: 684). Exploring these meanings from the perspective of communities can reveal “deep, cognitive

connections with the landscape – and the power of place names" (Brien and Dixon 2022: 123). Information on a group's sacred landscape can help inform if a place fits into their model of the sacred (Sundstrom 2003: 285). Combining ethnographic and archaeological research illuminated the value of bird and carnivore remains at Pueblo Bonito in Chaco Canyon that could have been underestimated (Bishop and Fladd 2018: 310). Archaeological methods alone may not be able to measure things beyond the observable. However, the discipline has worked to acknowledge that more sources of information deserve to be included in the discussion when possible and when it is appropriate. Ritual life is a culturally sensitive subject; nevertheless, it is crucial to acknowledge its role in society.

Case Studies of Habitation, Storage, and Ritual Caves

This section provides an overview of three sites that explore what habitation, storage, and ritual cave sites look like. The three cases presented here are located in Utah, Idaho, and New Mexico respectively. These sites were selected because the cultural components present are comparable to those at Mantle's Cave. The case studies included here showcase how behavioral evidence can be explained at cave sites.

Promontory Caves 1 and 2

Excavated by Julian Steward in the 1930s, Promontory Cave 1 and Cave 2 are known for their collection of "250 pieces of footwear, most of which were in a distinctive 'Promontory moccasin' – style" (Ives et al. 2014: 618). Located a short distance from each other on Promontory Point of the Great Salt Lake in Utah, these caves served as the type-site for the Promontory Phase (A.D. 1166-1391) and continue to draw interest (Ives et al. 2014: 616). The site's Promontory components date to ca. A.D. 1240-1290 (Ives 2020: 97). Both sites display characteristics of habitation.

The physical nature of Caves 1 and 2 are different, but they both were occupied and used as bases for activity. Cave 1 is the larger of the two with roughly 350 m^2 of habitable space, while Cave 2 has approximately 100 m^2 of usable space (Ives et al. 2014: 620). Similar to Mantle's Cave, Cave 1 has a portion of the central area of the cave obstructed by rock fall. From the work done by Steward, the sites were "interpreted as reflecting small residential bases from which other activities were conducted. Men, women, and children were present.," (Ives et al. 2014: 620). The variability in the footwear size suggested the diversity in age of the groups present at the site. Approximately 20 to 50 people were thought to make up the "moderate-sized local groups of microbands" that occupied the caves (Ives 2020: 94). The incredible perishables and detailed work at the sites have allowed archaeologists to consider the populations that used the caves with great detail.

At each of the caves, there are several markers of habitation. In Cave 1, an abundance of occupational activity seems to be clustered around a hearth at the center of the cave (Steward 1937). Overall, the assemblages from the caves suggest that the sites served as hunting camps (Ives et al. 2014: 620). Artifacts of note include the extensive footwear collection, knife handles, knives, a fire kit, sewing tools, hide preparation equipment, pottery, basketry, cordage, matting, bedding, retooling devices, and more (Ives et al. 2014, Ives 2020). Another category of items represented at the sites were gaming pieces "including a beaver-tooth die, bone dice or hand-game pieces, abundant cane dice, and hoops and darts" (Ives 2020: 111). The items from the caves would have enabled the groups to prepare for hunts, process the game they acquired while hunting, have communal gaming time, and more. Though Cave 1 and Cave 2 are primarily considered small residential bases, some of the behavior at the site can be attributed to functions beyond habitation. Rock art panels at the back of Cave 1 display late Fremont-style

anthropomorphs (Steward 1937). The large collection of footwear could also be considered a storage feature. However, some of the footwear appears to be worn, so they likely served as immediate storage for the groups using the sites. Promontory Cave 1 and Cave 2 show that habitation of caves does not always require intensive or diverse use to constitute habitation.

Bobcat Cave

Several ice caves are located along the eastern Snake River Plain of Idaho (Plew 2003: 273). Originally formed by moving lava from nearby volcanic eruptions, these lava tubes fill partially with ice and remain cold, allowing them to serve as natural coolers. Bobcat Cave is one of the ice caves that Middle Archaic people used to store food. The Middle Archaic component at the site radiocarbon dates to "4360 ± 70 and 4110 ± 70 B.P." (Plew 2003: 273). Scaredy Cat and Tomcat Caves are two other sites on the Snake River Plain that were used in a similar manner to Bobcat Cave. Using the cave's natural properties, past people could store food to mitigate food shortages.

Only 10% of ice caves surveyed on the Snake River Plain contain storage features (Plew 2003: 277). The primary storage feature at Bobcat Cave is a sagebrush platform (Plew 2003: 275). These 100 x 50cm platforms were made from "three layers of sagebrush stalks laid perpendicular to one another and capped by a layer of burned and unburned sagebrush bark and ash" (Plew 2003: 273). Around 150 bison were the primary meat being stored on these platforms. Recent work by Byers et al. (2016) proposes the idea "that skeletal fat, more than meat, may have influenced the selection, transport and storage of bison carcass parts" to Bobcat Cave (Byers et al. 2016: 56). The rich reserves would be worth the effort if they were able to be stored effectively. "Caching bison in cold lava tubes would have mitigated both intra-annual and inter-annual food shortages" (Byers et al. 2016: 56).

Beyond the bison remains, additional artifacts were found at the site that suggest more activity there. The objects include "266 complete and fragmentary elk antler tines, pestles, and rounded cobbles" (Plew 2003: 273). These tools were likely used to process the bison remains to get them into ideal form for storage. Even though processing was occurring at the site, it was likely to support the main activity at the site, food storage. Due to the cold and dark nature of the cave, there is no evidence of direct habitation occurring there although the site is thought to serve a nearby campsite (Plew 2003: 278). Middle Archaic hunter-gatherers intelligently utilized the natural properties of Bobcat Cave as a cold storage facility.

Surratt Cave

Surratt Cave is located in central New Mexico in the foothill east of the Gallinas Mountains. Two forms of rock art are associated with the site. The first visible form is the petroglyphs located outside the cave, which is thought to have been created more recently than the pictographs that are located inside the cave (Greer and Greer 1997: 29). A Pueblo V site, Gran Quivira, is located nearby and may have connections to some of the iconography used at the site (Nicolay 2012: 174). The dark-zone rock art, along with the symbolism used, has led that cave to be classified as a ritual site.

This cave is a sink that dips 40 to 50 feet below the surface with vertical walls. (Greer and Greer 1997: 30). Fifteen to 20-foot-high walls line the rim of the sink (Greer and Greer 1997: 27). There are two entrances to the cave, both require delicate navigating under boulders and down 30 feet into rooms (Greer and Greer 1997: 29). Once inside the cave the visitor must produce their own light to navigate the space. Within the cave are several small rooms and passageways with the paintings "at the lower edge of a large room and continue down to a kiva-

like room at the bottom of the cave," (Greer and Greer 1997: 30). This dark and hidden space would require careful and intentional visitors to traverse its passageways.

The two forms of rock art reflect different techniques and stylistic preferences. The petroglyphs on the walls outside the cave are found on three panels. Panel A has a large face pecked into it with some marks that suggest some form of 'drumming' or striking of the rock occurred to emit sound (Greer and Greer 1997: 28). Panel B contained a variety of zoomorphs. Panel C had several footprints pecked into the rock, representing "both bare feet and moccasins," (Greer and Greer 1997: 29). The petroglyphs are described as being in the Jornada style (Greer and Greer 1997). Five panels of pictographs were found inside the cave, and various paint application techniques were used. Panel 1 has a variety of figures represented along with several negative space handprints. The styles shown here are thought to "maybe be an example of the ideological link between Jornada style rock art and cultures in southern Mexico" (Greer and Greer 1997: 32). Panel 2 depicts a masked figure, other characters, and some torch marks. Panel three is a row of painted symmetrical dots. Charcoal was used to draw on Panel 4 alongside the masks, figures, and negative space handprints. Panel 5 is located in the deepest portion of the cave and has a lightning bolt, a 'cloud terrace,' stenciled handprints, and a mask on the wall. This panel may also have evidence of striking to produce specific tones (Greer and Greer 1997). The dark-zone paintings are thought "to be associated with yearly or semi-yearly ceremonial activity relating to renewal and formal requests for rain to help sustain agricultural crops. All drawings within the cave appear to date to the Pueblo IV period, or about A.D. 1350-1450, but some may extend into the 1500s. These images are clearly Jornada style rock art typical of southern New Mexico, west Texas, and northern Mexico and influential in Pueblo rock art development throughout the central part of the state and beyond" (Greer and Greer 1997: 39).

The elements of darkness, rock art, seclusion, and sound production all contribute to the ritual space crafted at Surratt Cave.

Reflection

Rockshelters and caves can support a wide variety of activities. The physical elements of the caves themselves play a role in the use of these places, so it is key to consider how space is used. Fluctuations in use patterns can occur through time or even between seasons. Certain behavioral makers may be more likely to be present in certain site zones rather than across the site as a whole. Breaking down a site into activity zones can enable habitation, storage, and ritual markers to emerge. Concerning the examination of Mantle's Cave, it is critical to consider the cave in its entirety. Understanding this cave requires a nuanced look at the archaeological remnants and the space itself.

CHAPTER 4: METHODS

Overview

I employed several methods to address the research questions I posed in this project. Primarily, I needed to address the archival and archaeological collection associated with Mantle's Cave. Classifying the material through the use of my own catalog codes and determining how the items fit within storage, habitation, and ritual behavior was another component of this project. Documenting the items through descriptions and images was another component of my methodology. I used the data gleaned from the material to explore spatial relationships and temporal data from the cave to address what behaviors were occurring there. The methods I selected worked to support my four primary research questions.

Archival Methods

The University of Colorado Museum of Natural History holds a vast archival record that relates to the institutions' work in the Castle Park area. Most of the archive is related to the 1939-1940 excavation of the site. Some documents instead relate to projects conducted later in the 1940s and correspondence between the museum staff and other institutions. Exploring the archives enabled me to ask questions about the original work at the site that would not have been possible to answer with the Burgh and Scoggin (1948) report alone.

When I first began reviewing the files, the material was stored in two boxes containing various information on the museum's work in the Castle Park district. Among the files, I tried to isolate information about the site, the excavations, Scoggin and Lohr, and subsequent professional and hobbyist work. From the 1939-1940 excavation, there were field notes, personal journals, field books, photos, and bag tags. Another set of files was associated with Scoggin's later visit to the monument. A few mentions of work done in Mantle's Cave by the 1948 museum

crew in Castle Park were contained in two journals. There are also dozens of letters exchanged between museum staff and other research institutions and government agencies about the work in Castle Park. An overview of the different files consulted for this project can be accessed through the Dinosaur National Monument collection finding aid on ArchivesSpace at the University of Colorado Boulder Libraries. Between the commitment of the museum to preserve this record and the diligence with which the original excavators took, there was an abundance of information to process through.

I completed the bulk of my archival research over the course of one semester. The museum's archivist, Will Gregg, was directly involved with this portion of my project. He instructed me on how to handle the documents best and provided some scans of photographs when possible. For my records, I took photos of all relevant material I encountered. I used the program Tropy to organize these images. Each picture was labeled with dates, catalog numbers, topics, and more to help me navigate the abundance of material. Once I finished processing the material, I could extract information relevant to the archaeology of Mantle's Cave.

Gathering data on the context of the artifacts from the site was one of the main goals of my archival research. I used a variety of sources to reconstruct how the cave was excavated and where the items or features were found. I prioritized certain location information depending on how detailed the information was and how soon the excavation information was recorded after the item was removed from the site (Figure 14). The bag tags that were completed following the excavation of the item were ranked the highest because they would have been completed soon after extraction. Field data sheets were another source of detailed information that often-linked artifact numbers to the unit they were found in. Journal entries could provide details about the day's work or specific items if they happened to be mentioned.

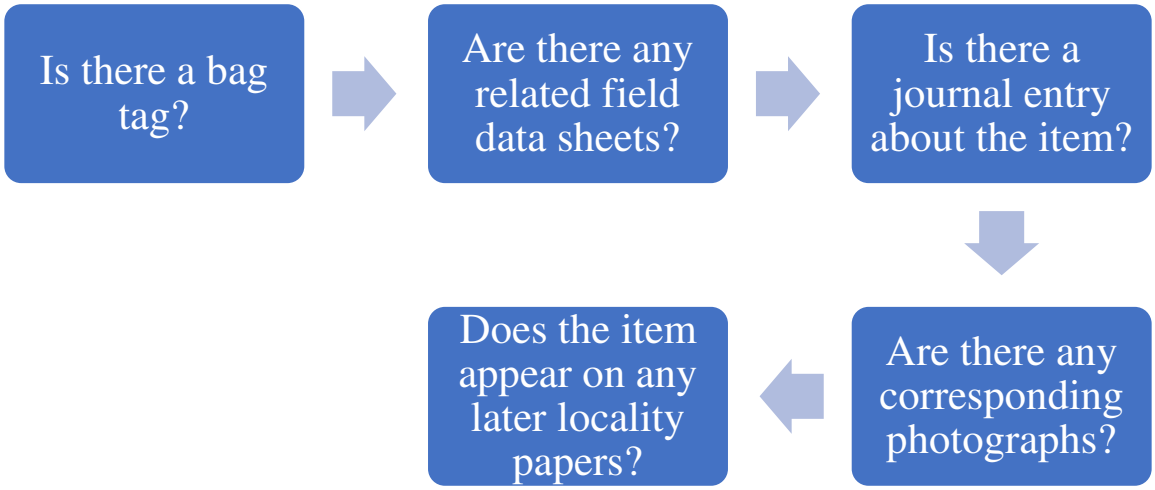

Figure 14. The diagram reflects which archival documents I consulted when trying to identify object provenience.

Photographs and their accompanying captions helped illuminate work at the cave in general but also would give descriptions of items' location within a unit. An assortment of papers detailing the item locality were considered last because these documents did not have a precise date associated with them, and they could have been completed much later, making them less reliable. Even after consulting all of these sources, sometimes a location would be too general to narrow down, or there just may not have been one written down. All of the information pertaining to location was recorded within my master spreadsheet. The depth at which the artifact was found was another attribute I tried to record. This metric was helpful in better understanding the relationship between items and a unit as well as the overall temporal discussion of the site. Comments on the bag tags, in the journals, or on the field notes were sometimes able to provide context on the relationships between features and artifacts. Understanding context is critical to making arguments about the activities occurring at the site, which I will discuss in later chapters.

Another valuable subset of data from the archives was details about the excavations. Scoggin and Lohr detailed some of their field procedures, such as unit size, approximate trench locations, and how they moved material. Several journal entries and field notes recount their encounters with previously disturbed areas from previous work at the cave. During the excavation, the pair commented about the material they were encountering and their impressions of the cave as a whole. These firsthand accounts were vital for me to read to get as close a perspective as possible on the conditions of the material as it was being excavated. The information gleaned from the records informed my ability to reconstruct the site's excavation and make arguments about the site's function.

The archive recounted later excavations along with the museum's continued work with material from the Castle Park area. Within this section of the archive were the original catalog sheets. These explained how the numbering system developed by Scoggin in the field was integrated with the museum's UCM system. Information on later work at the site was essential to know when reconstructing the history of the cave. Some items from the Mantle's Cave collection were later sent off for testing, and the location of these items is not entirely clear. Understanding the completeness of the collection was made possible by the archives and the analysis of the collection. Scoggin and Lohr did not find some of the material in the collection, so it was vital to delineate which excavations produced what material. So many archaeologists, historians, and museum professionals were involved with the collection, so it is vital to unpack where the interpretations and information came from to better understand how to unpack the material.

I needed to delve into these records to understand all I could about the site. Working with 'legacy' data can be challenging, but archaeologists today have a responsibility to familiarize themselves with the associated archaeological archives and how they were formed (Baird and

McFadyen 2014). The archival material associated with Mantle's Cave are complex historical documents that tell the excavation story, museum protocol, interpersonal relationships, and more.

Collections-Based Methods

For my thesis, I focused on the archaeological collection from Mantle's Cave housed in the University of Colorado Museum of Natural History. In Chapter 9, there is a discussion about material housed at other institutions. To better understand the collection, I crafted my own labeling system to help me assess the collection from an archaeological perspective.

While preparing to create my code system, I consulted a variety of sources to better understand the labeling process. The organization of the Pectol-Lee collection from Capitol Reef, Utah, was a good collection for comparison as it was another diverse Fremont collection that had been uncovered in the 1900s and revisited recently (Allen and Nelson 2002). Few notes were kept during the original unearthing of the collection (Allen and Nelson 2002: 28). Professionals later organized the collection in a three-part system, starting with a general category, followed by a sub-category, then an item name. For one of the collections' famous items, the cradleboard with a figure, the classification reads Exotics, Cradle Boards, Cradle Board with Figurine (Allen and Nelson 2002). The three-part naming system is common in archaeological classification, and I knew I wanted to use a similar format. After consulting a variety of Fremont and Great Basin literature, I had a base for the terminology used to classify the items found in Mantle's Cave.

After reading how archaeologists craft naming conventions, I looked at the collection directly. I reviewed the original codes from the intake forms as well as the labels on the bag tags to generate a general perspective of what material made up the collection. From there, I created a draft of codes to use that would cover all of the items described by Scoggin and Lohr's reports. I could view the Mantle's Cave collection piece by piece and classify them according to my

preliminary coding system. After I viewed the collection, I went back and saw which codes could be combined or needed to be separated based on what I observed. I developed a three-part naming convention to classify the collection (Appendix A). Scoggin and Lohr's initial interpretations of the material were frequently correct; I simply updated the typologies and terminology archaeologists use today. It was a process to find a balance between being too specific or too general about the items I was comfortable with. Generally, I aired on the side of being more general, partially because there are still items in the collection that have the classification of "unknown" attached to them. Determining how to label this collection took several revisions, but it allowed me to have a way to dissect the collection into units that could be studied.

Along with making the collection more manageable to study, working with the collection produced several other opportunities for understanding. Having consistent terminology also helped me transition to exploring the collection by function. Three of my research questions seek to explore behavior at the site. Based on literature about caves and the Fremont, I could see how artifact classes relate to behavior. Once I could recognize what an item was, I could work on understanding its function based on context and background. Classifying the collection also supported the spatial work I wanted to accomplish with this project. The three-part naming system is integrated into the spatial software I used in this project, detailed later in this chapter. Deciding how to label an artifact enabled me to develop a deeper understanding of the piece that would help me address larger questions about using Mantle's Cave.

Collections Work

Reviewing the archives and archaeological collection was a key component of this project. Through that work, I was able to identify artifact provenience and record discrepancies

between original collection notes and the collection today. Integrating the collection details and object provenience into a master catalog enabled an interpretation of Mantle's Cave (Appendix B). Information gleaned from this project will help the University of Colorado Museum of Natural History continue to manage its collection and aid future researchers.

Catalog Components

After comparing the collection as detailed in the archive to the physical collection present today, I was able to assess how complete the collection is (Table 2). The 19 items I considered no longer part of the collection reflect those I could not find when reviewing the collection. These items may reflect items in the collection but have been re-numbered, and the connection is no longer clear, or the items may have been sent for testing or taken to other institutions, and the records were not amended to include these details. Descriptions of the missing items enabled them to still be discussed in this project.

Table 2. Results of my collection analysis. When reviewing the archival records and the collection today, there were some discrepancies in labeling and item count.

Collection Component	Counts
Number of Catalog Numbers	709
Number of UCM Catalog Numbers	699
Number of Items with Scoggin Numbers Only	10
Number of Catalog Numbers with Scoggin and UCM	521
Number of Items No Longer Part of Collection	19

Reviewing the collection also revealed that 521 catalog numbers had both Scoggin and UCM codes; this is the portion of the collection that supported the spatial analysis component of the project. There were more bag tags that had provenience information from the 1939-1940 excavation, however they did not include Scoggin numbers, so they could not be concretely tied to UCM numbers or the current collection. More of the collection could be rectified if these tags

could be connected to UCM numbers. With this project, not all of the complicated parts of the collection were remedied, but the problems were identified.

Item Provenience

Establishing item provenience was a pivotal part of this project. With the excellent records kept by past researchers and CUMNH, I was able to establish a connection between the archival material and the archaeological items (Table 3). Though not all of the artifacts in the collection had detailed accounts of their excavation, it was a testament to the work ethic of Scoggin and Lohr to be able to make the connections I did. Approximately 58.8% of the collection could be traced back to its original excavation unit. An additional 17.8% of the artifacts were connected to a general location, such as the "rear of cave" or "trash piles" (ARC.DNM01_001_017). Roughly 76.6% of the collection had some form of location information, which enabled the research questions posed in this project to be answered.

Table 3. After reviewing the archives, I was able to understand where information on the collection came from and how many of the item were able to be traced back to the original unit in the cave.

Collection Component	Count
Number of Catalog Numbers	709
Catalog Numbers with Unit Location	417
Catalog Numbers with Depth	267
Catalog Numbers with Unit Location and Depth	250
Catalog Numbers with a General Location	126
Catalog Numbers from Jones & Lee	48
Catalog Numbers from Scoggin & Rodeck	9
Catalog Numbers from Burgh	5
Catalog Numbers with No Location Information	171

Spatial Analysis

To explore the spatial relationships between artifacts and features from Mantle's Cave, I used the geographic information system (GIS) program ArcGIS Pro. The program supported the site's rendering, allowing me to navigate the data produced by the archival and collections methods discussed earlier in this chapter. Information about the artifact's unit of origin and depth was ascertained through the abovementioned methods. The count and classification of the items came from my review of the collection. Charles Scoggin created a site map (Figure 7) detailing the features they encountered along with the units they dug during the 1939-1940 season (Burgh and Scoggin 1948: 23). This site map served as the basis for the model created in ArcGIS Pro.

Creating My Map of Mantle's Cave

Once the information about the items and the site layout was collected, I attempted to build an adequate map in GIS. As the grid established by Scoggin and Lohr was not verified by exact coordinates, it was hard to build the map in the exact geospatial location. The site being located underneath the overhanging rock also made it challenging for me to use topographic maps to reconstruct where the units were. I turned to the Geospatial Centroid at Colorado State University for support.

At the Geospatial Centroid, I met with Joshua Reyling, who developed the rendering of the site in ArcGIS Pro to be compatible with the data I had collected. Funding from the Karen S. Greiner Endowment for Colorado Archaeology enabled me to hire Joshua. We had several meetings to discuss the units' naming conventions and the sites' layout. The units "are identified as unit areas five feet square, above and to the right of the lines indicated by letter and number" on the historic map (Figure 7) of the excavation grid (Burgh and Scoggin 1948: 25). Information from the 1939-1940 archives suggested that there were additional units than were on the original

map. Sub-caves located along the back wall could not be added to the map as their location relative to the established grid is unclear. A comparison of the original excavation grid from Scoggin and the rendering created in ArcGIS Pro highlights how the translation of the maps occurred (Figure 15). With the map's construction done, I could explore the data and edit the map as needed.

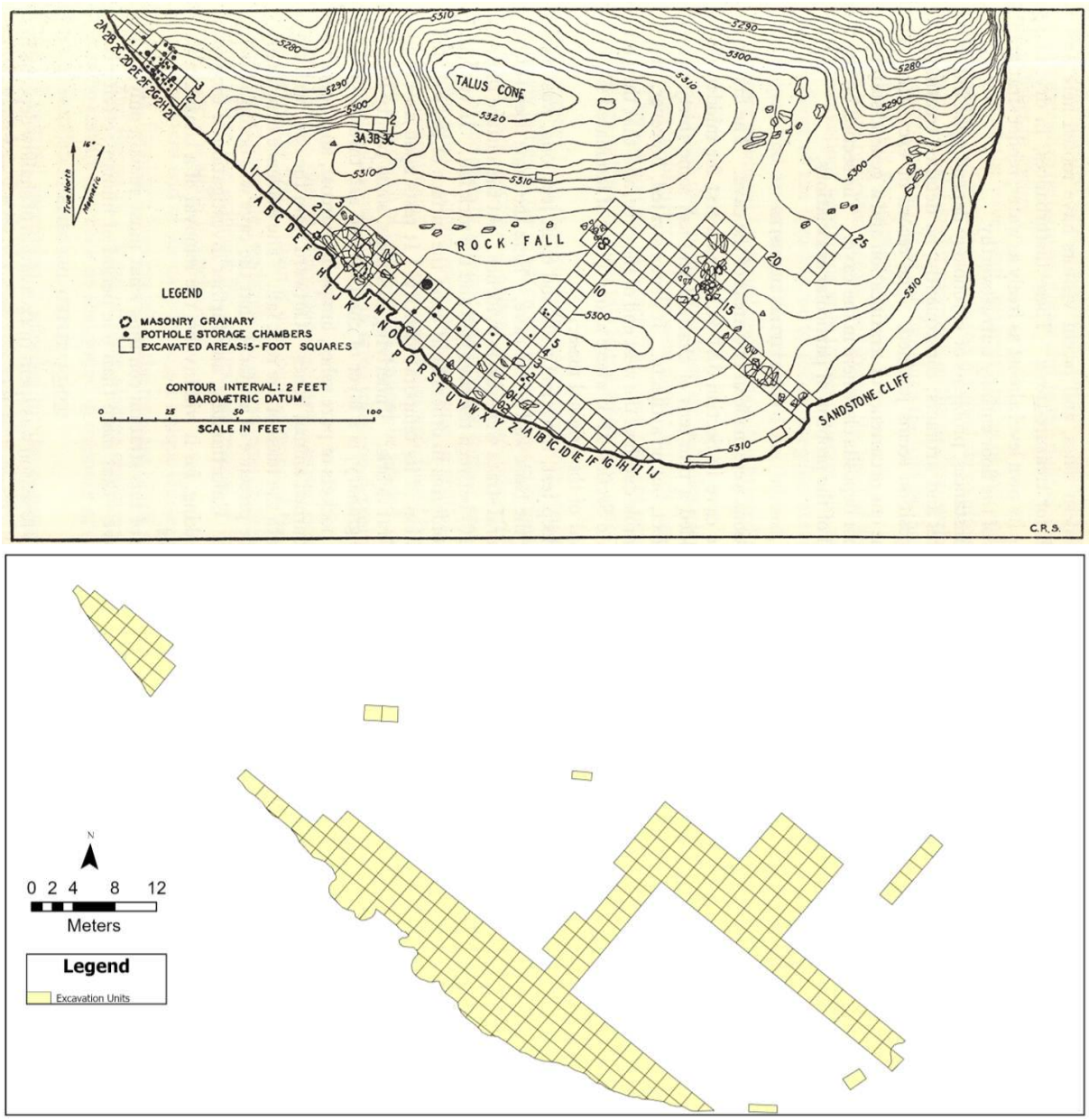

Figure 15. The top map represents the excavation grid from the 1939-1940 excavation of Mantle's Cave (Burgh and Scoggin 1948: 23). The bottom map serves as the base for the subsequent maps in this project. Additional units were added while trying to maintain the original shape and boundaries of the 1939-1940 excavation map.

The map layers include one of the archaeological units, another with units containing artifacts, and a third that details the number of artifacts found at each cultural level per unit. As I continued to use the resource, I added some additional information. I added additional records of artifacts that I was later able to determine the location of as features. If other artifacts' provenience is found, they can be added to the database. The map created for this project will hopefully serve as a resource for future projects.

I used the map to support several lines of analysis. On one layer I could filter material across the cave by the naming convention I established. To separate items by artifact classification, I broke down some catalog numbers into smaller groupings by adding a dash followed by a number after the catalog number. This helped me integrate the catalog into GIS so the numbers would not be repeated and tied to multiple classifications. In the symbology pane, I used the transparency selection to show the relative quantities of items contained in the units. I created several display filters to highlight the specific classes of data I wanted to examine. When I wanted to just look at the presence/absence of material, I turned the transparency filter off. This layer of the map was the primary one used for analysis.

The map's cultural counts by level layer allowed me to analyze broad trends across the units about where items were being found and at what relative depth. The cultural levels were created after I looked at all depths that could be connected to a unit. From there, I bracketed out different ranges of depth. These ranges do not correspond with the levels mentioned in Scoggin and Lohr's notes because there was no consistent guide for cultural levels. Within ArcGIS Pro, statistical analysis of the data was conducted through the use of the analysis function. These helped to highlight some of the trends numerically rather than visually. Through the use of

display fitters and statistical analysis, I was able to examine some of the patterns of activity at Mantle's Cave.

Artifact Dispersal

The location of the 417 artifacts from Mantle's Cave span across several areas of the site (Figure 16). Three rough zones containing the densest material concentration circled in Figure 16. The concentrations are often found in areas with cists or along the back wall. Units A-1 to D-1 represent a string of densely occupied units. Beyond that, other areas reflect some clustering in the center of the base of the excavation grid as well as in the top portion of grid. Unit 1Q-13 as another unit of interest that yielded a concentration of material along the back wall in the eastern portion of the cave. Appendix D includes maps that feature specific cultural material that are referenced in this thesis. Appendix H contains additional maps of cultural material from the site. Even with the material spread across the site, there does appear to be areas where material is more concentrated.

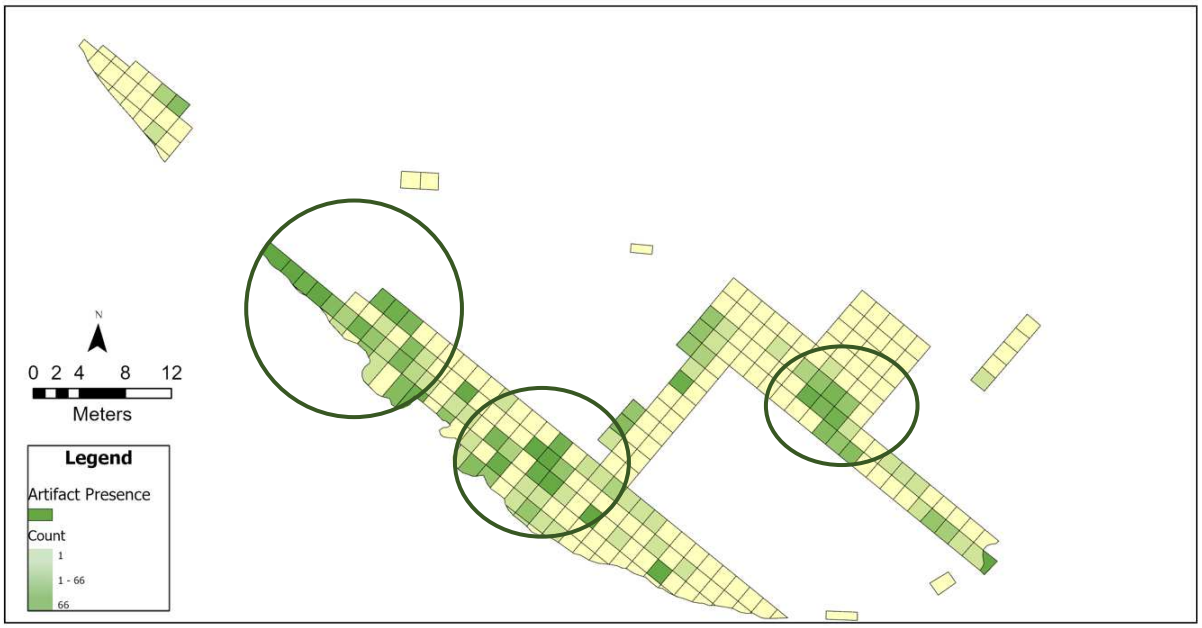

Figure 16. The green circles encompass the areas with the densest concentration of material. There are several sections of the cave where no known material was recovered.

When viewing artifact density at the site, areas where cultural material was not recovered also stand out (Figure 17). Most of the floating units did not have artifacts that could be tied to them. Units 3A-1, 3B-1, 3C-1 were "a test for midden deposits. The excavation yielded a thin lens of charcoal and ash some thirty inches long at a depth of seven feet, but no artifacts" (Burgh and Scoggin 1948: 24). Along the base of the excavation grid there is a noticeable absence of material in the lower eastern portion of the site. Absence of material in the western edge of the excavation grid of the large cist group likely reflects an absence of material due to disturbances from previous visitors to the site and the challenge associated with decoding the excavation records. Material may have also been removed from these cists by the people who left these items there. Without further connections between the bag tags and material from the site, addressing how widespread the gaps in where material was recovered is not possible.

Figure 17. The green units represents units that could be linked to cultural material. The orange squares represent areas that did not yield cultural material.

Areas of Disturbance

Descriptions of previous work at the site and notes from Lohr and Scoggin identify areas of the where disturbance to cultural material occurred. Based on the descriptions available, I was

able to estimate the area of disturbance in the cave (Figure 18). The back wall of the cave and the western cists were targets of early interest at the site (ARC.DNM01_001_002). After Scoggin and Lohr completed their excavation of Mantle's Cave in May of 1940, they chose not to backfill their units (Horn and Reed 1989). The outline of the back-dirt piles were still visible during Alpine Archaeological Consultants, Inc. work at the site in 1989 (Horn and Reed 1989). Rockfall destroyed some features and obscured material at the site (ARC.DNM01_001_015). Site disturbance at Mantle's Cave occurred for a variety of reasons.

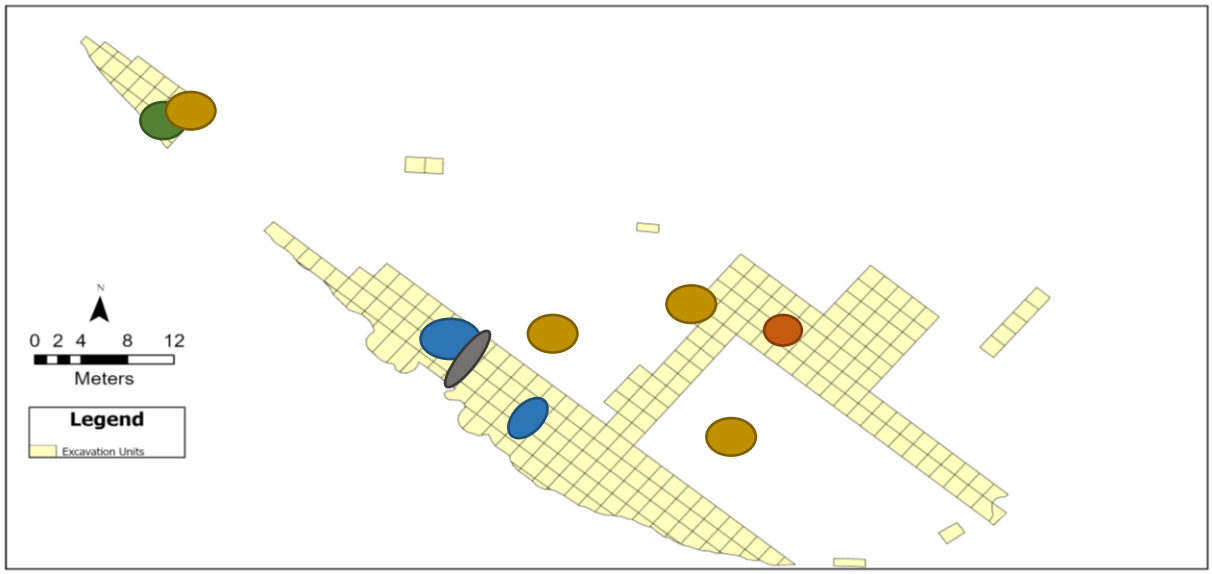

Figure 18. Based on descriptions in Brown (1937), the notes of Scoggin and Lohr, and other archival materials, an approximate location of disturbances to the cave prior to the 1939-1940 excavation could be identified. The green circle represents an area disturbed by Mrs. Mantle. The orange circles represent work by the Penrose-Taylor Expedition. Area disturbed by the Perry-Mansfield group is indicated by the red circle. The blue circles represent areas disturbed by Lee and Jones. The grey section represents disturbances by unnamed 'pot-hunters.'

Photography

Documenting a portion of the Mantle's Cave collection was another project goal. Only a small fraction of the collection has been previously photographed and published (Hewes 1952; Horn and Reed 1989; Truesdale 1993; Goff 2010; Sommer 2013). Photographing the collection was a collaborative effort between myself and the University of Colorado Museum of Natural

History collections management staff which produced a lasting record of the items in the collection that can be accessed.

Before photographing the collection, I narrowed down which items would be the most important to photograph to support the research questions I proposed in my project design. Diagnostic material, such as projectile points and pottery, were included in this sample to bolster the temporal discussion in Chapter 8. Woven mats and other items referenced in my discussion of activities at the cave were also included in this sample to reflect the material being discussed. Objects that had unit-specific locations were given priority in terms of photography. The largest group of items included in the photography process were the caches. This portion of the collection has gained the most attention, yet only a few items from the caches have corresponding photos. It was also crucial for the caches to be photographed together to aid the visualization of what these intentional groupings would have looked like when they were placed in the cave. After reflecting on the items, 111 artifacts were chosen to be photographed.

The University of Colorado Museum of Natural History staff approved my request to have photos of the collection taken. The 14 items with preexisting professional-grade photos were not re-photographed to minimize the impact on the collection. This component of my thesis was made possible with funding from the Harry Walts Memorial Graduate Scholarship, awarded by the Loveland Archaeological Society and the James and Audrey Benedict Endowment for Mountain Archaeology, awarded by the Center for Mountain and Plains Archaeology. Working with collections manager Kerrie Iyoob, I learned the museum's protocol for photographing items. The setup and process associated with the professional-grade photos was a part of the standard operating procedure (Figure 19). When possible, a point-and-shoot approach was taken to reduce costs and exposure, and 28 items were photographed in this manner. For the 69 items

selected for professional-grade photos, the artifacts were documented in the museum's photography studio. Throughout the process, great care was taken with these items to ensure their longevity.

Figure 19. Both images were taken in the photography studio at the University of Colorado Museum of Natural History. Two adjustable lights and a camera on a tripod were used to capture images of the artifacts. Images were reviewed on the computer after they were taken before more angles or new items were processed.

The images captured during this process are included in this thesis. Appendix C includes photographs of most of the items discussed in the thesis while Appendix G contains images of additional items in the collection. These images are used in a variety of figures in this thesis. The photos serve as incredible comparisons to the original excavation images and drawings. Demonstrating the breadth of this collection was another component of this project; photographing the collection provides a permanent form of documentation for these items.

Temporal Analysis

Chapter 8 details the temporal analysis of the material from Mantle's Cave. To delve into this subject, I used all available data, including relative and absolute dating data. At the time of this project, the museum was not accepting destructive sampling applications (such as radiocarbon dating) for this assemblage as part of their current collections management strategy.

Radiocarbon dates from previous projects are incredibly valuable to this discussion. Details on what researchers have tested the collection, what items they sampled, and what dates were generated by the test will be explored in Chapter 8. I reached out to all five previous researchers; however, not all were able to comment by the time this project was finished. Those who were able to respond provided more context on their work with the collection. A discussion of the dated artifacts is central to the temporal analysis component of this project.

Due to the limited number of radiocarbon dates, other temporal data sources were consulted. In a letter (ARC.DNM03), dendrochronological dating was discussed, but the specimen or result of those tests were not included in the archives I could access. Other information in the archival records was used to provide a general understanding of different periods of use at the site. Soil profiles, field notes with artifact depth, notes on different occupations, discussions of natural processes such as rock fall, and more were considered as sources for this analysis. The inclusion of these images or quoting sections of the notes was used to support my arguments about artifacts or features' relative age. Working with the available data, I was able to generate a general understanding of the temporal history of the site.

Reflection

I needed a variety of methods to address the four research questions posed in my project design. Establishing a basic understanding of the information contained in the archives and

exploring the archaeological collection were the foundations of this project. From there, I could work to explore relationships, object identities, temporal associations, and spheres of activity within the cave. With this project, care was taken to understand what past peoples were doing while "not imposing [a] 'why' onto or in place of theirs" (Loughmiller-Cardinal and Cardinal 2020: 588). The methods outlined here enabled me to explore the site history of Mantle's Cave from the time of the Fremont to the excavation of the site in 1939-1940. As an extension of this project, I worked with the University of Colorado Museum of Natural History to integrate the information I learned to update the museum's web page on Mantle's Cave.

CHAPTER 5: HABITATION ANALYSIS

Overview

> "Mantle's Cave had been used for storage purposes by a group of people who practiced agriculture on a rather intensive scale…Nowhere in the cave was evidence of habitation, strictly speaking, discovered. Occasional occurrences of fired area in the deposit doubtless mark the site of sporadic fires kindled to serve during a brief interval. Midden material was lacking throughout" (ARC.DNM02_001).

As stated above, Scoggin and others have argued that attributes of the cave along with the material found inside it has been argued to supports the idea that the site was only used as a storage facility. Scoggin believed that the washing of debris over the drip line and the site's "northern exposure, however, effectively frustrated any attempts which the Indians may have made to use its spacious and otherwise appealing interior for continual occupation" (ARC.DNM02_001). He also noted that "up until the time that it fell from the roof of the cave, the place must have been undesirable for comfortable shelter" (ARC.DNM03). Lohr thought that "little actual living had been done in the cave" (Lohr 1948: 12). Burgh was adamant that Mantle's Cave "never served as a residence" (Burgh and Scoggin 1948: 22). Later work at the site continued to leave researchers with the impression that "Mantle's Cave is an excellent example of a sheltered Fremont storage site" (Horn and Reed 1989: section 8, page 1).

Although past work at Mantle's Cave mentions information about the site's habitation, it is never considered the driving factor behind its use. Habitation, or the extended use of a site by a set group who uses the site to reside in and complete activities, is one facet of behavior. This chapter evaluates how Mantle's Cave displays traits affiliated with habitation. Exploring the evidence of habitation at Mantle's Cave revealed a new dimension of the site that had previously been discounted.

Architecture

Architectural features were identified within the Castle Park area. Marigold Cave has substantial architectural evidence that supports the Fremont habitation of caves in the area around Mantle's Cave (Burgh and Scoggin 1948: 19). Notes from the excavations of the site never suggested that any established floors or house structures were present (ARC.DNM01_001; ARC.DNM01_001_017). The masonry granaries are the only architectural features present at Mantle's Cave and these are not indicators of habitation.

The site did contain four large log fragments that could be evidence of some above-ground structures that have degraded over time. A portion of UCM 05978 was sent to the Gila Pueblo Tree Ring Lab on 8/19/1947 for dendrochronological testing (ARC.DNM03). The results of the dendrochronological testing will be discussed in Chapter 8 along with the other temporal material from the site. UCM 05980 is a large, partially burned log that could be kindling related to the charcoal in unit C-1. A burned log (UCM 06028a) and a timber (UCM 06033) are no longer part of the collection. UCM 6028a and UCM 06033 were found within proximity to each other in units Q-01 and P-01 respectively. UCM 06033 was buried below the surface (Figure 20). The logs could have been used to support some above-surface structure or just for firewood. There is insufficient evidence to suggest that Mantle's Cave had architectural features beyond the storage structures.

Figure 20. (I-2) A large section of a log (UCM 06033) can be seen in above the cave floor. The log appears to be below a level of stones and several inches of sediment. ARC.DNM04_004_010

Hearths

Hearths, or firepits, are a type of archaeological feature. Often identified by darkly stained soil, charcoal, and burned material, hearths are a center of activity at archaeological sites. Several charcoal lots were excavated at Mantle's Cave. The charcoal recovered was found in three primary areas (Figure 21). Soil profiles also reference several areas of charcoal and ash, although the concentration of charcoal is not apparent. Within the archives, there is also a note of a box elder fire drill fragment (UCM 05939) found by Jones and Lee. The drill component is missing today, and a pile of debris and burned material is all that remains. Charcoal from the collection and frequent records of ash at the site suggest that some localized burning occurred there.

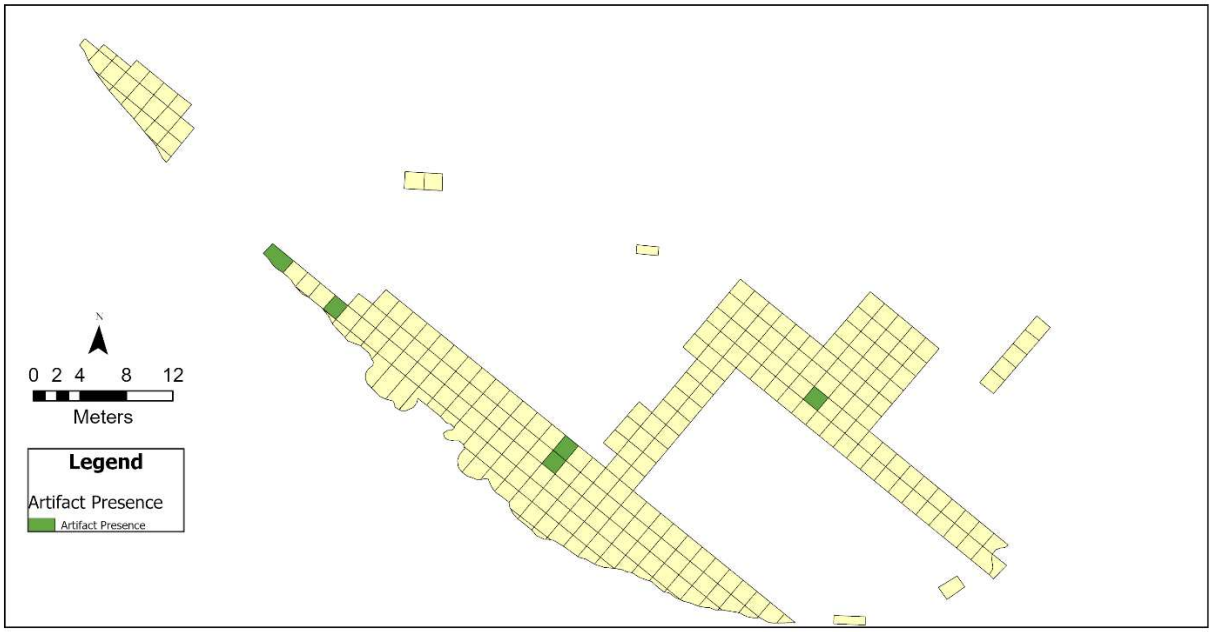

Figure 21. The units that contained charcoal are represented by green squares. More areas of the cave contained evidence of charcoal or ash; however, these selected units could be directly tied to charcoal lots.

Several pieces of burned cultural material were found in units that contained charcoal. A note from the 1939-1940 excavation states that "the charred dobs found in the vicinity of the group of four masonry cists showed that they had been used as fuel for a small blaze or were near to a blaze after the kernels were taken from them. See cat. data A636 proof" (ARC.DNM01_001_015). The bag tag for A636 (UCM 5924), a basket core, notes the presence of three charred maize cobs found near the basket. These three burned cobs may be UCM 7828-2, which matches the description but does not have a corresponding Scoggin number. Twenty additional catalog numbers contained burned items but were found outside of units where charcoal was collected.

Scoggin and Lohr acknowledge that fire was used by past peoples in Mantle's Cave in small episodes for finite tasks (ARC.DNM02_001). A slab-lined cist, one of the storage feature types present in the cave, located in unit T-1 was described as a possible firepit by the pair. They observed "sand in the bottom of pit is stained a bright orange. This has resulted from heat, but

the rocks of the cist are not smoke blackened nor were the objects above mentioned charred in any way. This would seem to indicate that hot askes were placed in the cist, and foodstuffs perhaps broiled over them; or that is had been used to store hot coals, before abandoned and filled up with debris" (ARC.DNM01_001_017). The archives captured evidence of hearths that expands on the evidence seen in the archaeological collection today.

Burned material is dispersed across several areas of the cave (Figure 22). Burned material can be found in units outside of those with charcoal. However, the burned material is frequently found in the units in close proximity to the charcoal. Layers of charcoal and ash in the cave likely represent controlled burned areas crafted by past people. The burned areas could have been used to discard refuse, provide heat, or process materials.

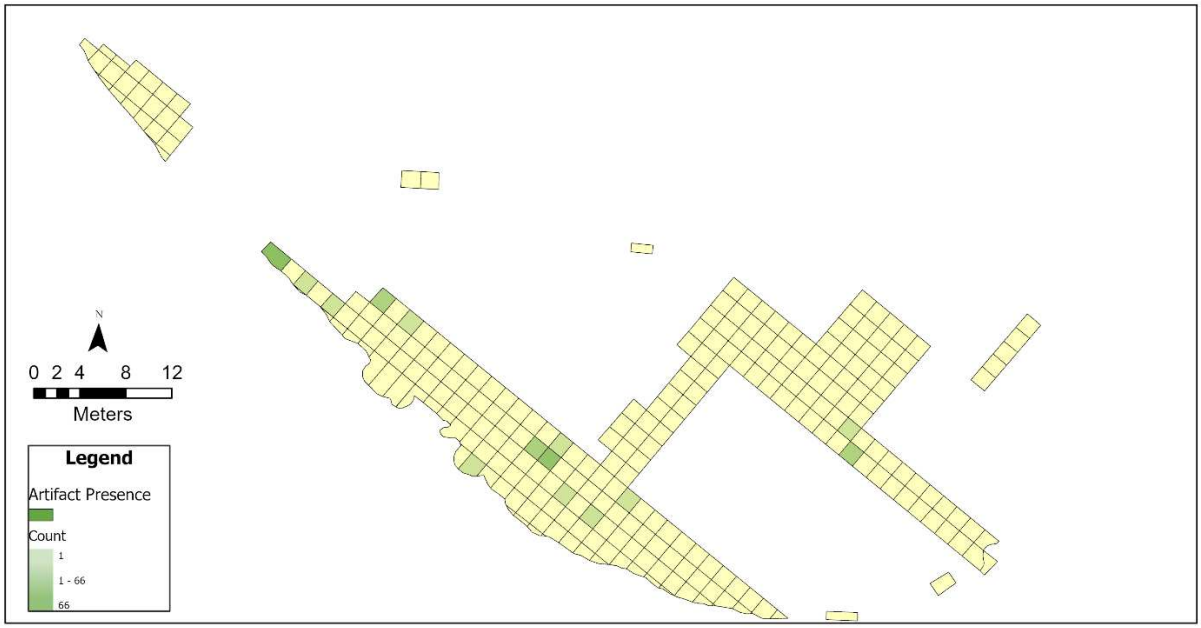

Figure 22. Map represents the distribution of all burned material at Mantle's Cave. Artifacts include bone, foodstuffs, wood, and other artifact categories.

Refuse Disposal

Refuse disposal can be another indicator that a site was used for habitation. Scoggin and Lohr did not note any definitive middens. The only records of trash piles were from 'pot-hunter'

debris (ARC.DNM01_001_002). Mantle's Cave did yield a variety of broken or fragmentary material, such as pottery and cordage, though the discard is never focused in one space. Several bag tags and data sheets mention the presence of excrement at the cave. Scoggin and Lohr classify these sections of waste as 'rat droppings' (ARC.DNM01_001_017). Three coprolite (UCM 05681, 05693a-3, 05701d) lots were recorded when reviewing the collection. UCM 05681 is a large sample with several inclusions (Figure 23). Uncovering human waste is not uncommon in caves.

Figure 23. A coprolite sample (UCM 05681) from Mantle's Cave. Inclusions in the sample are explained below. Copyright University of Colorado Museum of Natural History.

An expert was consulted to better understand who produced the excrement in the cave. Dr. Tim Riley is a Curator of Archaeology at the Utah State University Eastern Prehistoric Museum who has done extensive work on coprolites. Dr. Riley was generous enough to review images of the coprolites from Mantle's Cave and provide insight into whether or not they

potentially came from humans. After reviewing the images, Dr. Riley expressed that he "would be very surprised if they were not human coprolites. The shape, visual texture, color, and evidence of inclusions in photos (of UCM 05681) all point to that" (Dr. Tim Riley, personal correspondence, September 22, 2022). If these are indeed the byproduct of humans, they would further support the idea that people had occupied the cave. A map illustrates the coprolites location in units V-3 and D-1 (Appendix D). Cultural material is abundant in D-1, where the smaller coprolite (UCM 5701d) originated. The larger sample (UCM 05681) was found in V-3, where no other cultural material was recovered. Although V-3 only contained the coprolites, the units around it yielded material. The presence of potentially human coprolites indicates that Mantle's Cave has another element of behavior that can be linked to habitation.

Plant Processing and Cultivation

Traces of plant processing and cultivation are reflected in the Mantle's Cave collection. Ground stone implements are reflections of plant processing at the site. Although these items could be used to process small game, their presence at a site with crops suggests they were used on cultigens to grind the material into flour. A handstone (UCM 05025) has markers of wear, suggesting it was used as a grinding instrument. A cylindrical handstone (UCM 05033) demonstrates another type of ground stone at the site. Among the 1939-1940 excavation notes, there is mention of a netherstone (UCM 5045), referred to as a "heavy metate – paint palette," from the site (ARC.DNM01_001_019). A drawing of the netherstone was included in Burgh and Scoggin's report and described as a "sandstone, roughly fractured to sub-rectangular shape. The specimen from the cave is 17 inches long, 10 inches wide, and 3 inches thick" (Burgh and Scoggin 1948: 50-51). This item is not currently identifiable in the Mantle's Cave collection at the University of Colorado Museum of Natural History. Netherstones and even handstones can

be challenging to transport over long distances; it makes sense that Fremont people would leave the items in places they frequent so they can use them again when they are at the site. Though the ground stone implements could be stored at the site and not used, it is likely the handstones were used at the site as a netherstone was also present. Processing items were only found in six units (Figure 24).

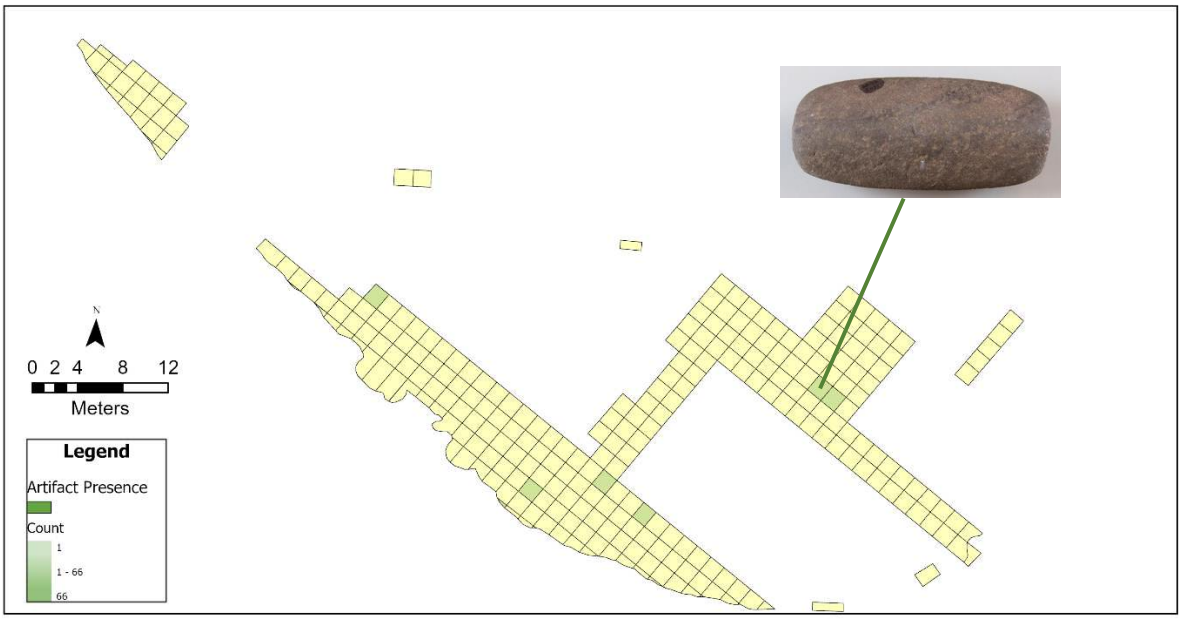

Figure 24. Location of ground stone pieces used in processing activities. One of the handstones, UCM 05033, is featured on the map with a line connecting the item to the unit it was excavated from 1D-15. Image of UCM 05033 Copyright University of Colorado Museum of Natural History.

Mantle's Cave also yielded material that would support cultivation efforts in the area. With the riverbeds of the Yampa River below the cave, the site was located in an area where farming was possible. The L-shaped curve of digging sticks, like UCM 05985, would help till fields. The location of the digging sticks are spread across six units (Figure 25). Shovels and other fieldwork gear were not uncovered at the site, though the presence of digging sticks supports the idea that Mantle's Cave was used as a base for horticulture.

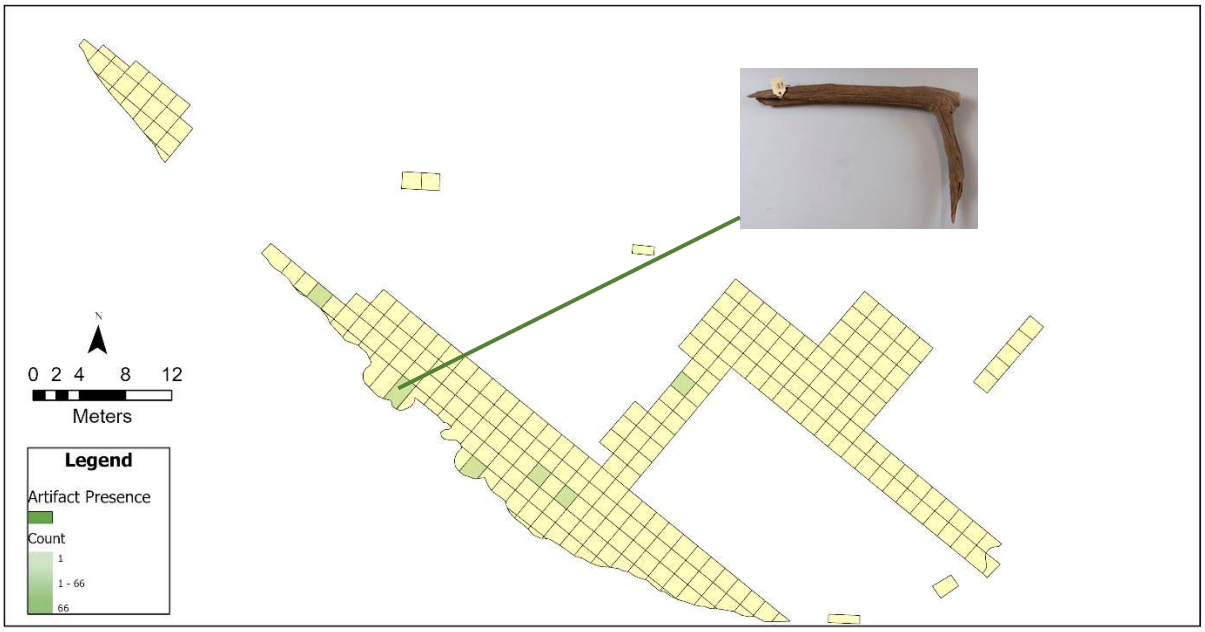

Figure 25. The location of digging sticks used in plant cultivation. One of the digging sticks, UCM 05985, is featured on the map. The line connects the digging stick to unit K-01, where it was recovered. Image of UCM 05985 Copyright University of Colorado Museum of Natural History.

Maps of processing and cultivation items were created to illuminate any possible patterns regarding spatial alignment. When comparing the representations, there appears to be more processing material on the western portion of units. A singular digging stick (UCM 05697) was found in a storage feature. The dispersal of items strewn across the cave could suggest they were left in place after use. Although farming was not occurring inside Mantle's Cave, there are several areas around the cave that could have served as fields. Leaving the digging sticks at the site made Mantle's Cave part of the cultivation process. Including tools to later process the cultigens, Mantle's Cave had the potential to serve as another base for activity associated with growing, storing, and processing foodstuffs. Return to Mantle's Cave throughout the food procurement and processing system was likely. The cave was not just a passive storage spot but somewhere people continued to return to complete tasks.

Animal Processing or Modification

Similar to the discussion of plant processing and cultivation, exploring the evidence of animal processing requires a nuanced view of several artifact classes. This section reviews the faunal remains from the site with an emphasis on the species represented, burned items, tools present, decorative pieces, and the other animal products present at the site. Through the discussion of these groups, an idea of how past people modified or used animal remains at Mantle's Cave emerges.

Bones

The site contained numerous animal bones that varied in size and degree of modification. The catalog includes 84 records of animal bone fragments at the site. Elaine Anderson previously reviewed the collection and determined an approximate Minimum Number of Individuals (MNI) at the site to be 257 (ARC.DNM02_003). The species represented include fish, reptiles, birds, and mammals. The presence of so many fragments at the site could that animals were being brought back to the site for consumption or modification. Although it is possible some of the fragments represent activity associated with animal dens.

Further evidence of animal processing at the site is seen in the burned bones (Figure 26). Several species were found among the burned bone fragments including deer (UCM 05864c), bighorn sheep (UCM 05869h), and fish (UCM 05865f-2). Some bone gaming implements and tools were also burned. In conjunction with the evidence of hearths, it is likely that bone being processed at the site and then discarded.

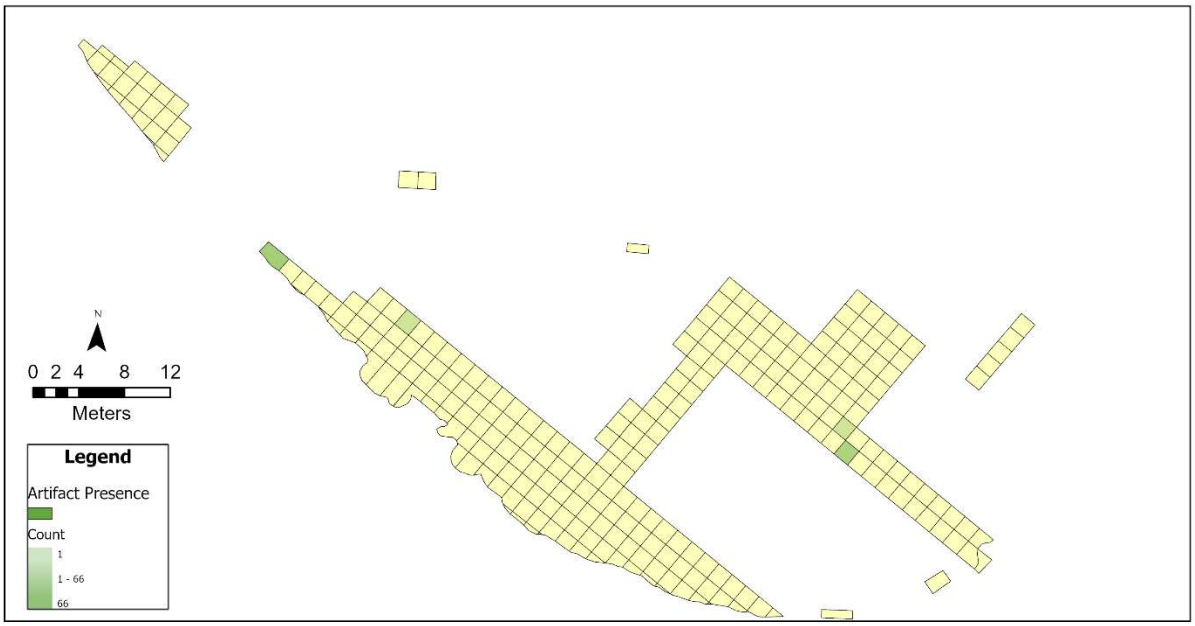

Figure 26. The dispersed and limited fragments of burned bones.

Bone tools were another artifact class from the site. Bone awls, a common tool recovered at Fremont sites, were the primary bone tool in the assemblage (Spangler 2002). Awls can be used to modify hides, construct basketry, sew, or make chipped stone modifications. There were 12 awls found at the site, only one (UCM 06163) was found in a cache (Figure 27). One of the awls, UCM 05816, was partially burned. The other bone tool types will be discussed in the context of the caches in which they were found. The tools alone do not signify that animal processing was occurring. Even though it is unclear that these tools were produced at the site, they could have still supported activities there.

Figure 27. The bone awl (UCM 06163) was recovered from Cache 6. Copyright University of Colorado Museum of Natural History. The tip is incredibly fine.

Within the assemblage, decorative forms of bone were also found. The most notable artifact that incorporates decorative bone is the necklace (UCM 05976), which will be described in Chapter 7. Another bone bead (UCM 05701a) was recovered from the same unit as the necklace and closely resembles the bird bones used in the necklace (ARC.DNM01_001_006). In addition to this bead, two others (UCM 05845 and 05846) were found. Both UCM 05845 and UCM 05846 appear to be tubular beads crafted in the same style as the necklace. These beads are incredibly thin as seen in a profile view of UCM 05845. Although these bones required an effort to form, no evidence directly supports that these beads were crafted at the site.

Animal Skin/Hair/Fur

The collection features 55 catalog numbers of items that can be grouped under the class Animal Skin/Hair/Fur (Figure 28). Within this group, some items range in degree of preparedness from patches of fur to fully fashioned items. UCM 06104, a buffalo hide,

represents an item that has undergone some initial treatment. Shoes and other regalia forms reflect modified pieces of hide that have been worked into a finished craft. Pieces like UCM 06044, a strand of sinew, are an example of modified animal parts that could be used as a binding or thread. In conjunction with the bone awls above, the pieces of hide or other material could have been threaded together at Mantle's Cave to create items that were later removed from the site. How these items could have functioned for the people of Mantle's Cave is not clear; nevertheless, they were resources available for use.

Figure 28. The location of the items grouped under the artifact class Animal Skin/Hair/Fur. A bundle of feathers, UCM 06183, recovered from unit U-1 is features on the map as well. Image of 06183 Copyright University of Colorado Museum of Natural History.

Evidence from Mantle's Cave suggests there may have been limited processing of faunal material. Comparing the maps related to animal processing or modification reveals several patterns. Both the burned bone and other bone fragments have dense concentrations around the western edge of the main section of excavation units. Faunal remains appear to be scattered across the base of the excavation grid while also having a denser presence on the western portion

of the grid. The artifacts suggest that Mantle's Cave served as a base for limited animal bone and hide modification, primarily on the western end of the base of the excavation grid.

Stone Tool Production

Identifying areas of stone tool production can support the interpretation that a site was home to occupation events. The primary way to observe chipped stone creation in the archaeological record is through the presence of flakes. Production of new tools or modifying older tools would create debitage as raw material sources were shaped. A total of 219 flakes were recovered from the site (Figure 29). Several lots of flakes were found together in lots, including UCM 05690a-3, 05690b-3, 05690c-2, 05693a-4, 05703a-2, 05703b-4, 05922-4,06057-4. Among the flakes, a variety of materials and sizes were observed. With the quantity and variety observed, some steps in the lithic reduction sequence were likely completed at the site.

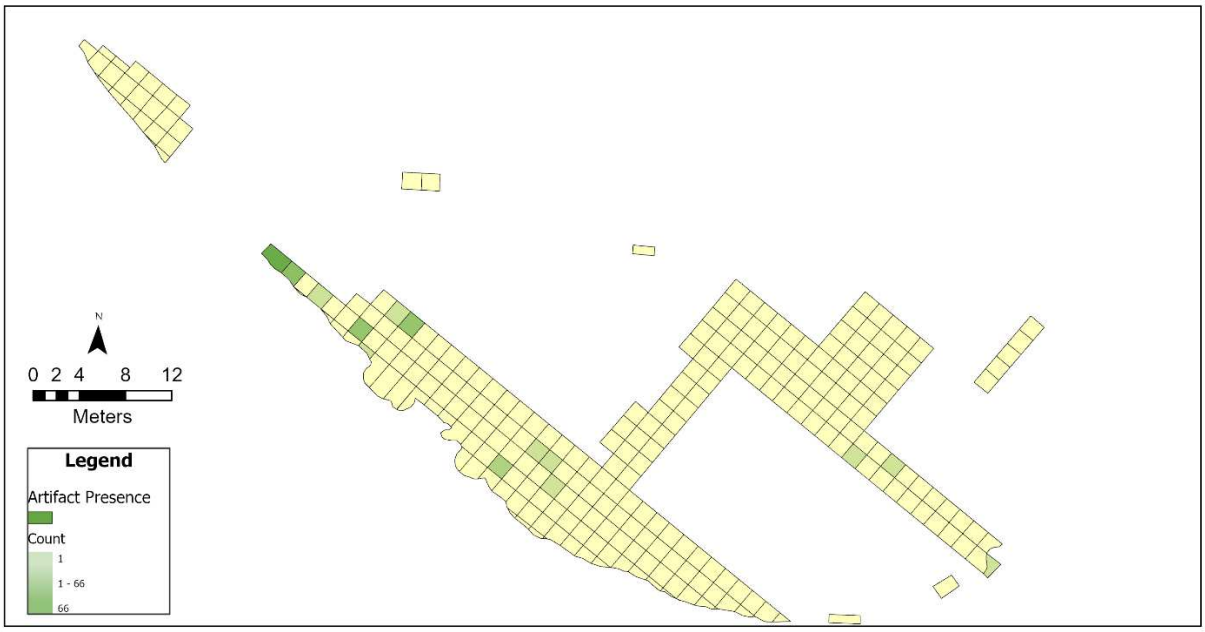

Figure 29. The dispersal of flakes across the cave floor of Mantle's Cave. The greatest concentration of flakes coincides with the richest area of the cave, the western extent of the main excavation grid.

Mantle's Cave had several raw material blanks that could be modified to make stone tools or gaming pieces. In a similar way, two bifaces (UCM 05555 and 06744) from the site

could have also been modified to produce a projectile or some expedient tool. The two bifaces were the only ones found at the site outside of those in caches. The diversity of raw materials and available sources suggest that the people occupying Mantle's Cave thoughtfully kept resources around to fit their needs as they visited the site.

Other artifact classes at Mantle's Cave support the idea that various production efforts related to lithic technology were occurring. These items include shaft abraders, dart shafts, and arrow shafts. The shafts, like UCM 05964, would serve as the bases for projectile points. Abraders, such as UCM 05034, would be used to straighten shafts similar to the sheep horn wrench in Cache 6. The shafts and straighteners would support the arrow and dart industry. In conjunction with the debitage at the site, some tandem activity was likely occurring.

When assessing the spatial extent of stone tool production evidence, some patterns emerge (Figure 30). Similar to the flakes' dispersal, the production indicators are clustered toward A-1 and along the base of the cave. The addition of raw materials and items related to lithic activity made the area around A-1 even more dense. Although there is dispersal of material, there are areas where material was congregating, possibly in an area of modification or production.

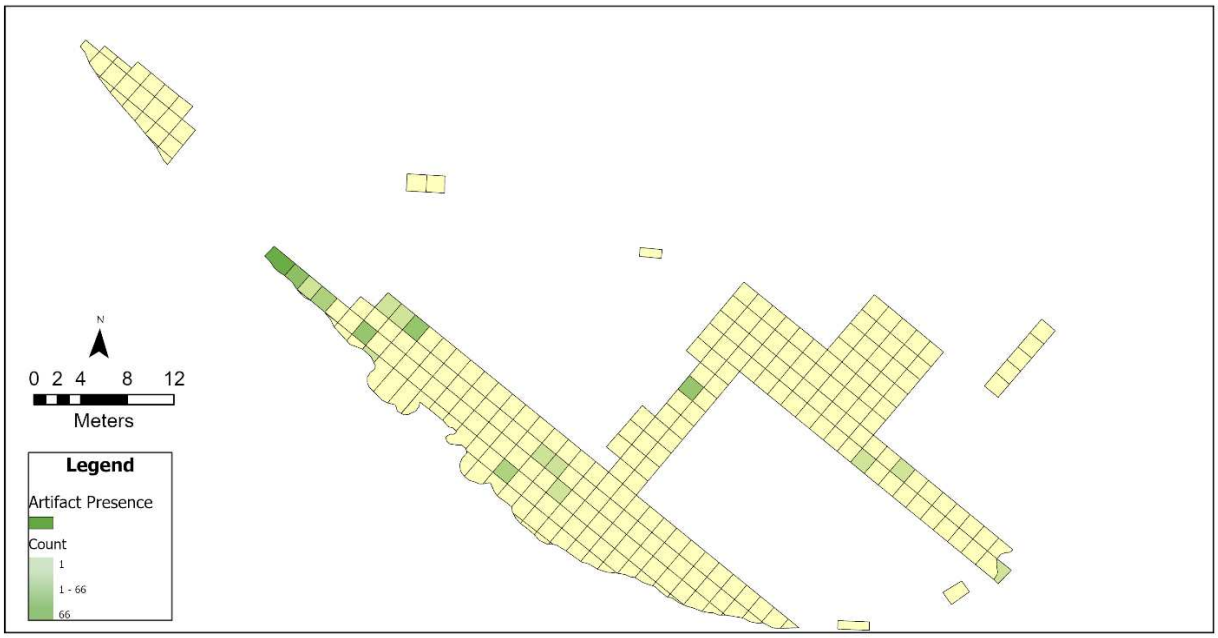

Figure 30. The evidence supporting stone tool production. Several areas of the cave could have been used to modify or produce stone tools. These areas mostly align with the location of flakes depicted in Figure 29.

Sleeping Quarters

Mats

Using mats to line sections of a cave floor can help make the space more hospitable. Mats from Mantle's Cave are made from various materials, including grass, reeds, bark, and wood. There was some patterning in where these items were located (Figure 31). After reviewing the style of these mats and the contexts from which they were recovered, some appear to be more indicative of floor covers than others.

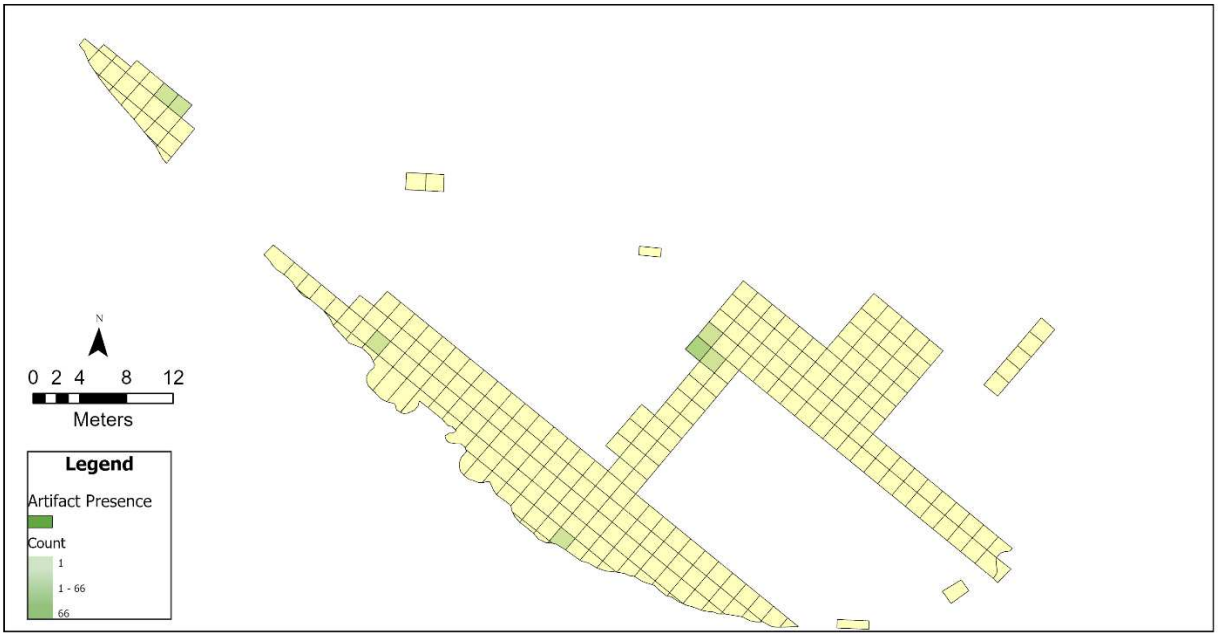

Figure 31. The spatial extent of mats that specifically supported habitation activity. The mats are often found in the areas around cists or other storage features.

A few specimens were too small to determine if they were part of sleeping mats. These fragments (UCM 05880, 05903, 05905, 05921) were made of different materials. UCM 05880, 05903, and 05905 were found close to each other. This could suggest they were part of a more extensive mat section.

A larger section of mat (UCM 05904) was found in unit V-12 near the mat fragments. There is a masonry cist in unit V-12; however, the mat was recovered "one foot south" of the structure. The mat (UCM 05904) is made of reeds and woven cordage (Figure 32). At one time, UCM 05904 was likely a larger mat piece that has since had sections break off. Within the collection, UCM 05904 is likely the only sleeping mat recovered from Mantle's Cave.

Figure 32. UCM 05904 is one of the mats from the site that supports the idea of sleeping quarters at Mantle's Cave. Pieces along the edge of the mat appear to have fallen off over time. Copyright University of Colorado Museum of Natural History.

None of the three additional mats from the site appear to have been used to fashion sleeping quarters. UCM 05902 is a partially intact cist cover. An image of the mat fragments (UCM 05902), with several quills strewn about. UCM 06006 is a reed mat that was found in unit W-02. Scoggin and Lohr photographed the mat nestled among grass lining (Figure 33). The mat (UCM 06006) almost appears to be a cache at first glance; however, no other items were removed from the unit. The grass underneath the mat could have functioned as a cushion, but it is unclear. Another mat (UCM 05994a) was made of reeds. The construction of this piece is different from the others and was described by Lohr and Scoggin as a tray fragment. A reed section hangs off of a wood stick with the first row of reeds secured by cordage, and the rest are loosely hanging. From the presence of mats alone, it is not possible to delineate possible sleeping quarters at Mantle’s Cave.

Figure 33. (H-4) Scoggin and Lohr captured a shot of UCM 06006 during their excavation on March 18, 1940. ARC.DNM04_004_009

Cache 8

An inverted basket cache was recovered from a cist underneath a slab stone by Scoggin and Lohr. Scoggin and Lohr documented the location and layering of Cache 8 (Figure 34). When

reviewing the collection, the relationship between the materials and the intentional deposition style led me to classify this as Cache 8. The majority of the cache is comprised of woven items.

Figure 34. (G-10, G-12, H-1, H-2) Lohr uncovers Cache 8 inside a cist with a stone cover. The photo sequence (A-D) shows how the items were removed from underneath the stone cover. The documentation of how this cache was uncovered provides a window into the relationship between these items that was not captured by the written records. ARC.DNM04_004_008, ARC.DNM04_004_009.

The largest piece of basketry from the cache is the carrying (also known as a burden) basket (UCM 06076a) missing its bottom. Sections of the basket are darker and create a zig-zag design (Figure 35). Fragments (UCM 06076b) were taken from the carrying basket to serve as reference specimens. A large basket base (UCM 06074) was placed on top of UCM 06706a, acting as a surrogate base for the carrying basket. Another basket core (UCM 06075) was recovered from the cist. Both UCM 06004 and UCM 06005a are mat sections. Although they are

both made of reed, how the cordage was used to section off the mat differs. Construction of the different basketry components reflect Fremont technologies (Adovasio et al. 2002). The assortment of baskets and mats make up the bulk of the cache.

Figure 35. The large carrying basket (UCM 06076a) is from Cache 8. In Figure 34, photo D shows Lohr lifting this basket from the cist. Copyright University of Colorado Museum of Natural History.

Three additional catalog items were recovered from the cist in unit X-1. They were collected on the same date as the rest of the items in Cache 8, though their corresponding bag tags suggest they were primarily from the base of the cist. Three maize kernels (UCM 06227-1) and stick fragments (UCM 06227-2) were recovered from the cist. Some of the stick

fragments appear burned. Seeds (UCM 06271) were found nearby, and Scoggin and Lohr believed the 74 seeds came from the sunflower plant. If the maize and seeds were part of Cache 8, they could have functioned similarly to the other foodstuffs included in the Mantle's Cave's caches. Though these components of the cache do not support the affiliation of the cache with habitation activities, their presence does not necessarily dispute it.

Cache 8 contains a variety of woven materials which are incorporated alongside the other cache items (Figure 36). The mats could have served as sleeping mats or as surfaces for cave activities. The baskets had broken bases, but could serve as covers. The unique storage of this material indicates that these pieces were not meant to be discarded like trash. This cache could reflect an overlap in storage and habitation behavior.

Figure 36. The ten items of Cache 8. The basketry and mats included in this cache vary in size and in degree of completion. The items are not to scale in this figure to show the details of each item. Copyright University of Colorado Museum of Natural History.

“Couch Section”

During Scoggin and Lohr’s excavation of the site, they came across an exciting area they labeled couches or beds. There were “two localized areas of grass and cedar bark lying five feet apart against rear wall of the cave between the extremities of our trenches” (ARC.DNM01_001_017). The area is “about 14 inches below the present surface, and the indications are that they belong to the occupation contemporaneous with the mud cists, at a time when the area where they occur would have been relatively free from sand” (ARC.DNM01_001_017). A soil profile of line Z shows the couch section near lines 01 and 02 (ARC.DNM01_001_017). An image from the 1939-1940 excavation shows a couch-like section in another portion of the cave (Appendix E). This image helps supplement the description of the couch area on the Z line. The pair chose not to remove the material from these sections (ARC.DNM01_001_017).

Scoggin interprets the area as possible sleeping quarters (ARC.DNM01_001_017). The description by Scoggin describes the area as a small couch, possibly for children to rest upon (Appendix F). Even if the couch was not large enough to accommodate an adult, creating a space to place children could still be indicative of habitation. An effort to shape and lay mats suggests that creating a comfortable space was important. If the cave was frequently visited, it makes sense that the space would be molded for comfort.

Mantle’s Cave does not appear to have an extensive section of sleeping quarters. The mats and ‘couch’ section may have made the space comfortable for limited resting. Creating a more usable space can still support the idea of occupation at the site. Evidence that supports sleeping quarters was found in several areas of the site (Figure 37). The material was generally dispersed, though the material in the base section appeared more concentrated when items

beyond the mats were included in the sample. The dispersed material reflects the limited evidence of defined sleeping areas present at Mantle's Cave.

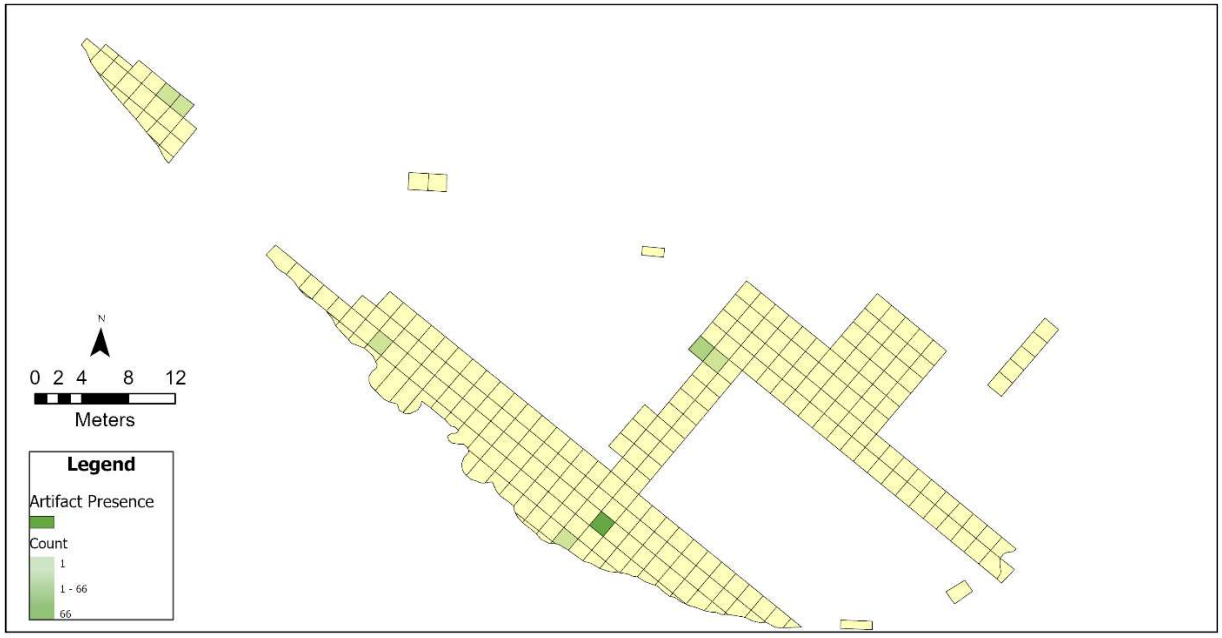

Figure 37. Evidence of sleeping areas in the form of mats are presented here. The densest areas appear at the back-center of the excavation grid with another area of interest occurring in the upper section of the excavation grid.

Additional Habitation Evidence

Gaming

Gaming was part of the social fabric of Fremont life. Items related to gaming are heavily tied to trade and cultural exchange. Evidence of gaming in the Fremont world often occurs in habitation zones "on house floors or in fill, apparently as a consequence of loss or perhaps discard of broken pieces" (Janetski 2002: 363). Game pieces can be made of bone or stone.

Several pieces of bone were fashioned into gaming pieces at Mantle's Cave. The site yielded 17 bone gaming items. Bone dice or gaming counters "are common in Fremont worked bone assemblages" (Janetski 2002: 361). The bone can "range in style from being carefully polished with rows of dots or incising to rather roughly made specimens; center drilling is common" (Janetski 2002: 361). UCM 05822 is a bone gaming piece that shows evidence of

rounding and burning. Another style of bone gaming piece from the site was a large, rounded, burned gaming die (UCM 05823). There is another elongated die (UCM 05847) from the site. The items with provenience are found primarily in the upper section of the excavation grid. Only UCM 5847 was found in situ in the back of the site in Cave A. The grouping of the items in the upper section could speak to a gaming locale.

A singular spherical ball (UCM 05658) was recovered from Mantle's Cave. These artifacts are not commonly recovered in Colorado but are found in Fremont sites to the west. The spheroids are often recovered "in and around buildings, trash mounds, or "on the surface" at Fremont sites" (Crump 2020: 28). The balls are pecked and smoothed into their desired shape and often made of sandstone (Crump 2020: 27, 131). In surrounding societies, including the Zuni, Hopi, and Piman, these objects are interpreted as "gaming pieces, club heads, noisemaking stones, or racing stones" (Adams 2013:198). In Fremont contexts, the balls have been interpreted as cooking aids, handstones, ceremonial items, or gaming stones (Crump 2020). The possible games that would include a ball include juggling, a tossing game, or foot racing (Janetski 2017: 134). The piece (UCM 05658) resembles items labeled as Fremont stone balls. Lohr and Scoggin found the piece "lying in stone niche inside of large rock which occupied most of" unit 1C-14 (ARC.DNM01_001_018). If people were spending time in the area of Mantle's Cave, it makes sense that an investment in social activities would be reflected.

Another lithic gaming piece from Mantle's Cave is a shaped alabaster piece (UCM 05050). The shaped piece of alabaster is smaller than the other alabaster raw material sources from the site. Chipped stone discs are one form of Fremont gaming piece that was used in a dice game (Janetski 2017: 129, 133). Although UCM 05050 almost resembles the discs, it is a thick piece of stone. The alabaster piece is rougher and less pecked than most Fremont gaming balls

(Crump 2020). Recovered from unit G-3, the piece may be related to the alabaster raw material from the site; however, these were recovered by Jones and Lee, so the provenience is unclear. Compared to known Fremont material, UCM 05050 resembles a modified piece of stone that would be used in some form of gaming activity.

Both the stone and bone pieces are concentrated in the northern portion of the excavation grid (Appendix D). The area may reflect a place where some form of games were once played, and the pieces were left behind. As the pieces are scattered about, they were likely discarded or left in place outside of any storage feature or container. Gaming was another activity that occurred at Mantle's Cave.

Reflection

Exploring what evidence of habitation persists at Mantle's Cave revealed a new dimension of the cave. The material diversity revealed activities not previously included in the site discussion. Habitation material was recovered from several areas of the site (Appendix D). The area from A-1 into the I line represents a dense concentration of objects. Cultural material does extend across the base of the excavation units up into the top of the grid. There are roughly four areas that have a dense concentration of material (Figure 38). The site likely functioned as a base for limited occupation where various tasks could be completed.

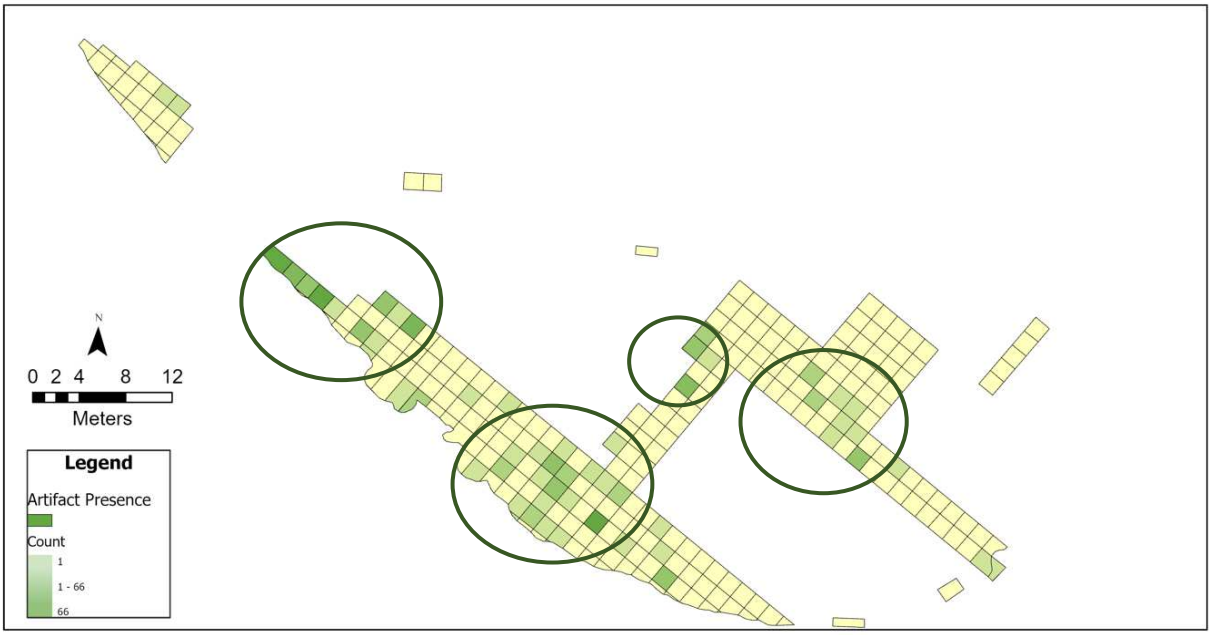

Figure 38. The four circles encompass the areas with dense concentration of material related to habitation. Area beginning with unit A-1 reflects the greatest artifact concentration. The central circle covers the largest expanse of units with material. The zones in the upper section of the grid are close together but are separated by four lines of sterile units.

CHAPTER 6: STORAGE ANALYSIS

Overview

> "The caves in Castle Park, most of which were too damp and cold for habitation, served for the storage of foodstuffs and treasured possessions, and for occasional, shelter" (Burgh and Scoggin 1948: 89)

This chapter presents an overview of the storage behavior at Mantle's Cave. As outlined in Chapter 3, storage behavior can be seen in several lines of archaeological evidence. Within the context of this project, storage refers to the intentional deposition of items to retrieve at a later date. This chapter focuses on how past people used the site for storage and where this behavior occurs. Past research on this site has focused primarily on storage as a possible explanation for how people used this site. Examining how the site was used as a storage facility will enable a clearer picture of site use.

Archaeologically, there are several ways to classify storage among mobile populations and understand how it was intended to be used. Drawing upon material stored away can occur on a long-term or short-term basis. The location and effort to construct storage features are related to how accessible the material needs to be (Yoder 2005). Passive storage refers to the deposition of material, often seasonal so that it can be retrieved upon a future visit to the site (LaBelle 2015: 5). Depositing insurance gear is another type of storage activity that is used to provide backups in places away from residential areas to supplement anticipated needs (LaBelle 2015: 5). Another form of storage is termed load-exchange; this type occurs when the material is stored because the items "are no longer needed or are too costly to carry because the forager needs to carry new resources procured near the place of the load-exchange" (LaBelle 2015: 5). Votive or dedicatory caches reflect another side of storage behavior that fulfills needs that go beyond the functional

which are discussed in Chapter 7. Mantle's Cave has several elements of storage behavior woven into the site.

Previous Position on Storage at Mantle's Cave

The immense number of storage features and unique caches from Mantle's Cave have been the primary pieces of evidence in the assignment of Mantle's Cave as a storage site by past researchers. Evidence of agricultural storage and a supposed lack of occupation debris, except for the "occasional occurrences of fired areas" further cemented the idea in the minds of Lohr and Scoggin that the site had limited function (ARC.DNM02_001). Notes from the 1939-1940 claimed that "the earliest peoples who came to the cave for the purpose of digging or other-wise constructing storage pits or cache pits found part of the interior dry and part damp; part bare of dry, wind-blown sand, and part covered to a depth of a few inches" (ARC.DNM01_001_017). On the site's National Register of Historic Places form, the historic function is listed as "Agriculture/Subsistence – Storage" and "Domestic – Secondary Structure" though the primary function is still attributed to storage (Horn and Reed 1989). The evidence of storage-related behavior at Mantle's Cave is unequivocal; the extent to which that storage potential was being used is important to ascertain to get a clearer image of how the site was used.

Storage Features at Mantle's Cave

Mantle's Cave has several features crafted by people or natural features that humans have shaped to make them more desirable. The features in this section do not include those that were just placed in bags or pouches but immovable features within the cave. Curating these features would enable the items placed within them to have greater protection from the elements and people. Several features of the site were identifiable (Figure 39), though not all features could be tied to exact units due to the limited archival details.

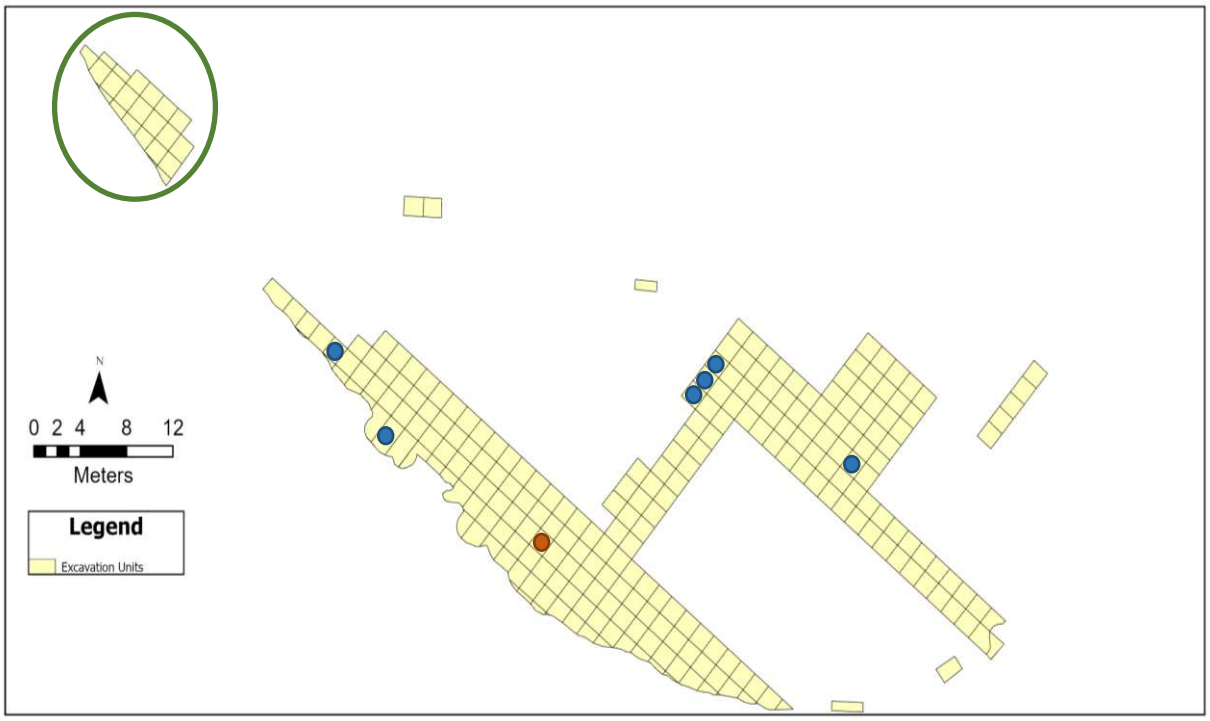

Figure 39. Mantle's Cave has a dense concentration of storage features that is not often seen in northwest Colorado. The features were either built by the people of the site or natural features were modified to make them more efficient storage spaces. This map represents an approximation of where the storage features at the site were found. The blue circles represent masonry granaries. The orange dot represents a slab-lined cist. The green circle encompasses the western slope cists.

Sub-Caves

Scoggin and Lohr identified three sub-caves at Mantle's Cave that contained archaeological material. Along the back wall of the cave, there were several places where the cave wall had naturally occurring holes. It is unclear how many of these miniature alcoves were visible on the cave's back wall during the 1939-1940 excavation. Each sub-cave has a unique shape and contains cultural material.

Cave A was a section near the ground and by the large masonry granary at the back of the cave (Appendix E). In Figure 40, Edison Lohr can be seen crouched down inside Cave A after it had been altered by previous hobbyist work at the site (ARC.DNM04_004_005). The space appears limited and would not provide ample room for anything more than storage. Inside the sub-cave, Scoggin and Lohr uncovered a pit (Appendix E). The pit was described as opening at

the top of the charcoal stratum, and the base of the pit was filled with light sand and rat debris (ARC.DNM01_001_015). A soil profile of Cave A was drawn on March 15, 1940, which revealed the levels of sediment, feces, and rocks described in their notes (ARC.DNM01_001_017). Regarding the distinct layers of charcoal and ash present in this space, it is important to consider that Cave A may have had less sediment accumulation in it at the time of use, based on Scoggin's description of the space and how he thought it was not always filled with material (ARC.DNM01_001_017). Therefore, it may have been easier to gather around a hearth there. Without a better understanding of sediment accumulation and the levels corresponding to dates, it is hard to address directly how this space may have been used.

Figure 40. (D-11) "Cave 'A' as left by pot-hunters. Edison P. Lohr looking into its interior. Mantle's Cave, Yampa Canyon. 2/25/40." ARC.DNM04_004_005

Lohr and Scoggin's notes suggest that Cave B is one of the larger sub-caves. There are two entrances to the large Cave B (Figure 41). A rough depiction of the space is included in Scoggin's journal (Appendix F). The notes on this journal page suggest that Cave B is connected to Cave C through a passage. Documentation primarily focuses on Cave B, and the physical connection between the caves could explain why there is less information on Cave C. Climbing from the bottom to top, this section of sub-cave appears to be a larger space than Cave A. Within Cave B, there is a slab-lined cist made of "five slabs set obliquely vertical, sloping in" (ARC.DNM04_005). The position of the stones are visible in a photograph from Scoggin's return to the site (Figure 44). Similar to Mantle's Cave as a whole, the space in the sub-caves is dry and protected.

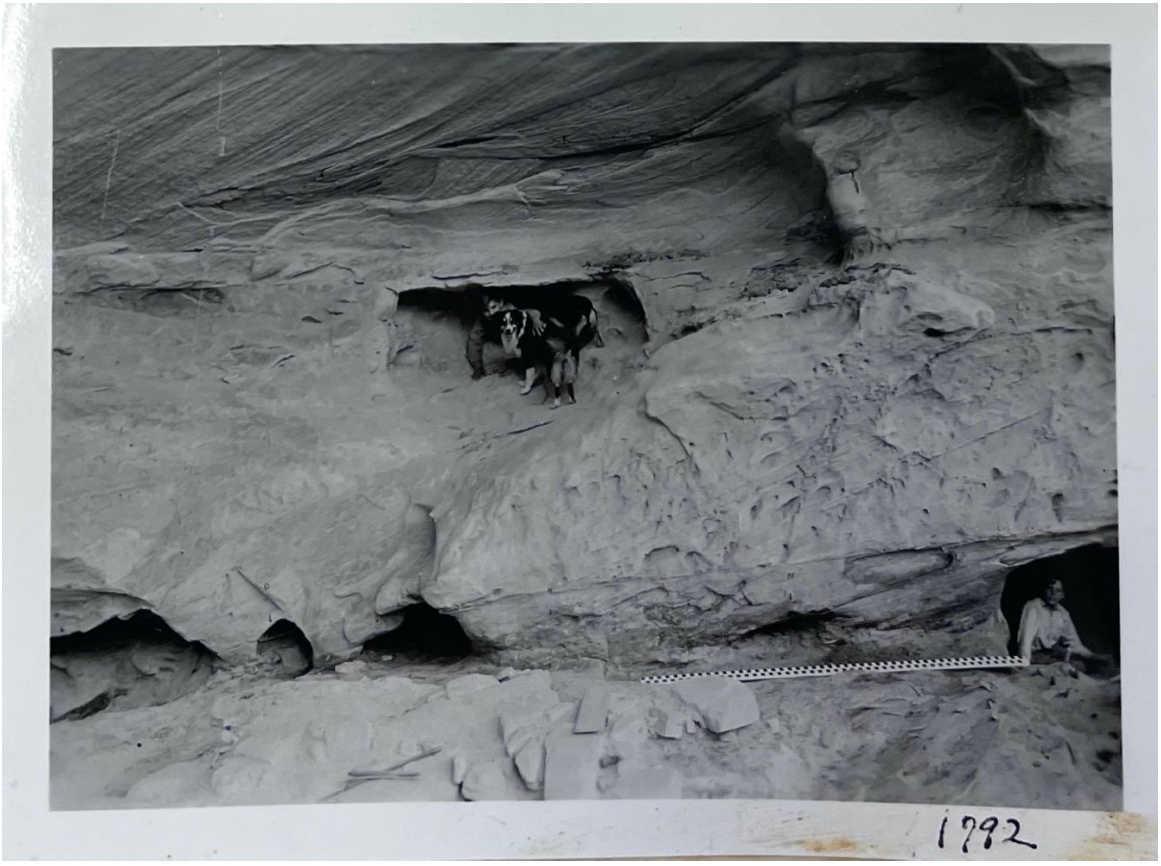

Figure 41. (K-5) "Potch and Pat Mantle in sub-caves along backwall of Mantle's Cave. Potch at left in 'key-hole' entrance to cave B. Pat, at lower right, in lower entrance to this same sub-cave (B). May 14, 1940" ARC.DNM04_004_012

Masonry Granaries

The most elaborate storage features within the cave are the masonry granaries (Figure 42). The rocks are shaped into an ideal size and secured by mortar, a testament to the craftsmanship of past peoples who found a secure way to store foodstuffs and caches (LaBelle and Meyer 2023). Granaries are found at several Fremont sites in Moffat County and Rio Blanco County in Colorado (LaBelle and Meyer 2023). Over the years, some of the daub is missing, and there is evidence of burrowing. However, the structures have held together (Appendix E). The durable nature of these containers makes them valuable long-term storage investments (Yoder 2005: 10). Placing stone covers or basketry bases over masonry granaries helped further seal off the granaries from outside elements. Mantle's Cave has eight examples of these features (Burgh and Scoggin 1948: 32).

Figure 42. (2-4) "Large Masonry cist in Mantle's Cave, atop large rock, as cleared by work of UCM crew L939-40 season. Photo taken March 19, 1941." ARC.DNM04_005

Cists/Pits/Potholes

The most common storage feature within the cave is the cist (Figure 43) (ARC.DNM04_004_010). Scoggin, Lohr, and Burgh use various terms to describe this feature type, including pit, pothole, cist, and mud cist. There are 37 potholes recorded at the site which served as storage facilities for foodstuffs, caches, and other gear (Burgh and Scoggin 1948: 30). The cists from Mantle's Cave are dug in different styles (Appendix F). The range in size and style could reflect the limited resources needed to construct these features. Some of the cists were lined with grass or bark to further protect the contents of the pits (ARC.DNM01_001_017). The bell-shaped pit can be "easily hidden once they are sealed and covered" (Yoder: 2005: 6). The potholes can be sealed with basketry or with stone lids. If these subterranean pits remain arid and protected, they can provide a valuable long-term storage option (Yoder: 2005: 9). The cists serve the same function as the masonry granaries and may have been a simpler storage option as they are less difficult to construct. Potholes are an effective storage feature if managed.

Figure 43. (I-11, I-12) Image A shows "large cist in pit group on west slope of Mantle's Cave, showing character of its fill (vegetable debris). April 22, 1940." Image B showcases the "put-cist group on west slope of Mantle's Cave as seen from on top of pile of compact sand and silt at this site. Shows Lohr excavating. April 22, 1940." The stone circles shown in Image B were storage lids that were removed during excavation. ARC.DNM04_004_010

Slab-Lined Cists

Another storage feature found at the site were two slab-lined cists (Burgh and Scoggin 1948: 32). These subterranean features are lined on the sides and bottom with large stone (Figure 44). The stones used to construct the slab-lined cists appear to have shifted through time as the sediment around the stone shifted or due to disturbance from previous work at the site. Scoggin and Lohr suspected that another slab-lined cist was present in the cave but had been crushed by rock fall from the ceiling (ARC.DNM01_001_017). These features are not as sealed off as the other potholes and granaries; nevertheless, they can still offer protection.

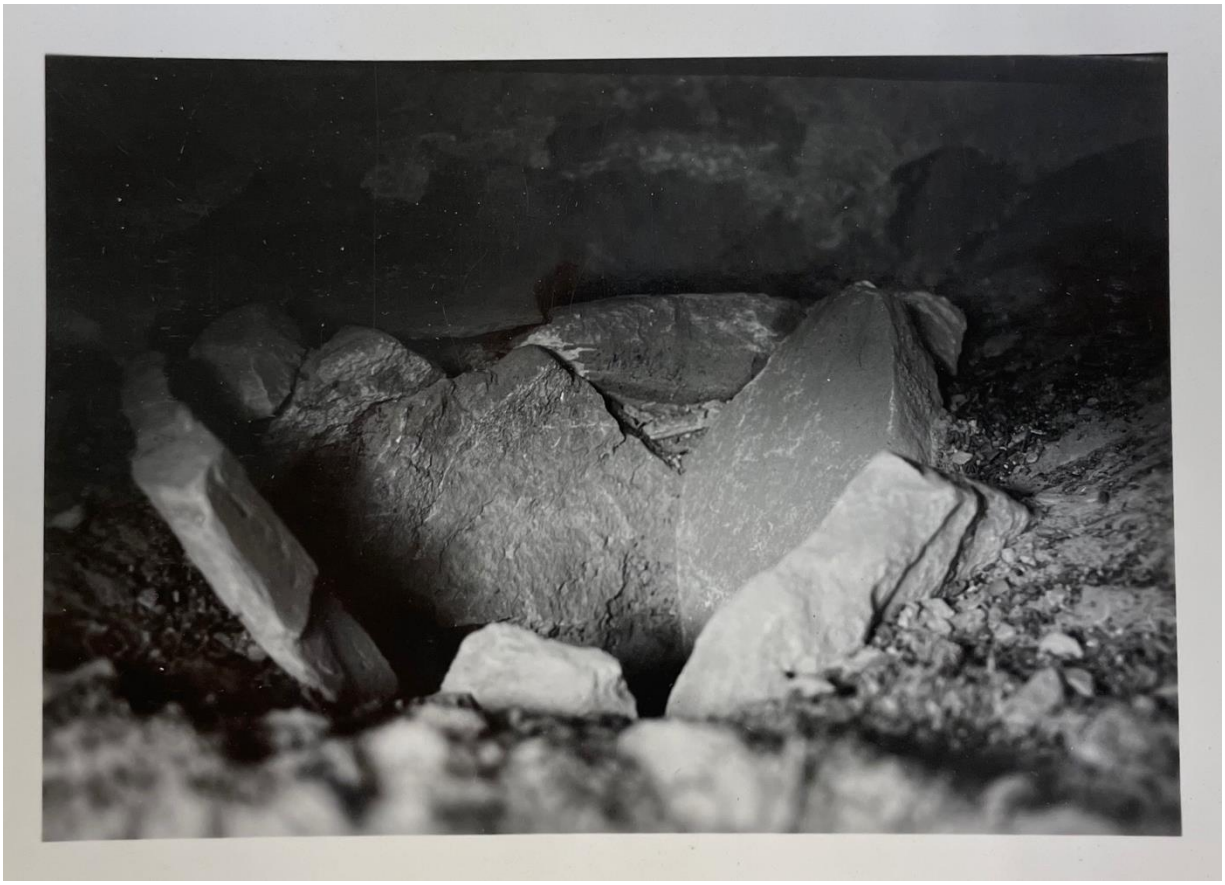

Figure 44. (2-3) Image shows the "slab cist in sub-cave B, at rear of Mantle's Cave interior, as seen from front (north). This cist excavated by F. L. Lee, August 1939. March 19, 1941." ARC.DNM04_005

Cist Covers

Although not a feature, cist covers can be part of the abovementioned structures. These covers helped seal off features and could be removed easily to access the material. Stone cist covers are just one way past peoples protected cists (Figure 45). Most covers are made from woven materials apart from the clay cist cover (UCM 05051). Two cist plugs (UCM 05052 and 5053) were also recovered from the site which could be used to secure covers in place or patch a cist. The photographs and records indicate more covers were observed at the cave that were made of stone; these may have been too costly to transport back to Boulder. Further sealing off the material inside of a storage feature with a cover could have shielded the material from the elements, rodents and prying eyes.

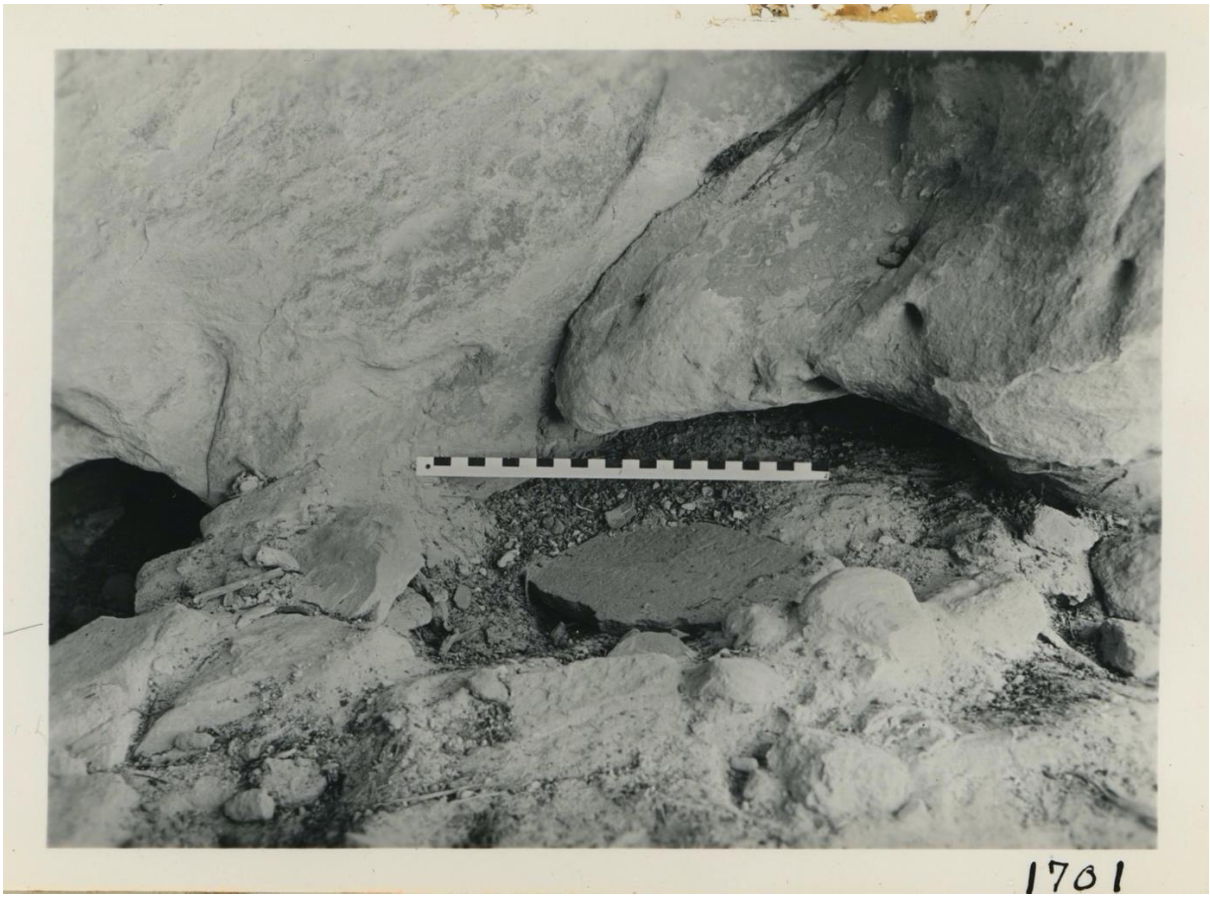

Figure 45. (C-10) The "red slab and probable cist cover lying as exposed in section N-01. Mantle's Cave. February 15, 1940." ARC.DNM04_004_004

General Occupation of Storage Features

With 50 available features, the people of Mantle's Cave had many opportunities to capitalize on the storage potential of the site. Each feature type yielded material, though certain types of features contained more artifacts than others (Table 4). General information on the artifacts from the features and how densely they were occupied is included here. Later in the chapter, discussions of specific artifact classes' storage will be outlined. The discussion reflects the material collected from 1939 to 1947, which likely reflects a diminished view of the material from the site due to site disturbance from visitors and through natural deterioration.

Table 4. A variety of material was found within the storage features of Mantle's Cave.

UCM Number	Scoggin Number	Storage Feature Type	Unit	Classification
05051	A1105	Masonry Granary	V-12	Combined Materials; Clay, Wood; Cist Cover With Stick
05395	A319	Sub-Cave	Cave A	Lithics; Chipped Stone; Worked Flake
05683		Slab-Lined Cist	T-3	Cedar Stick
05678-1		Pothole Cist	V-6	Mixed Lot; Flora; Seeds
05678-2		Pothole Cist	V-6	Mixed Lot; Flora; Mixed Fragments
05678-3		Pothole Cist	V-6	Mixed Lot; Lithics; Rocks
05678-4		Pothole Cist	V-6	Mixed Lot; Sediment; Mixed Soil
05691	A477	Pothole Cists	T-2	Wood; Burned; Charcoal
05737	A1144	Pothole Cists	X-1	Unmodified Sediment or Mineral; Sand
05754	A302	Sub-Cave	Cave C	Modified Animal Bone; Tool; Scapula Tool
05804	A1033	Masonry Granary	V-12 or V-13	Unmodified Flora; Unknown; Fragments
05830	A469	Pothole Cists	V-02	Unmodified Animal Bone; Fowl; Talons
05833	A623	Pothole Cists	1C-15	Modified Animal Bone; Decorated/Marked; Fragments
05834	A644	Sub-Cave	Cave B	Modified Animal Bone; Tool; Bone Awl
05835	A645	Sub-Cave	Cave B	Modified Animal Bone; Tool; Bone Awl
05847	A294	Sub-Cave	Cave A	Modified Animal Bone; Gaming; Dice
05900	A971	Masonry Granary	V-13	Woven; Basketry; Fragments

UCM Number	Scoggin Number	Storage Feature Type	Unit	Classification
05901	A974	Western Slope Cists	2H-2, 2H-1	Unmodified Flora; Gourd; Fragments
05902	A977	Western Slope Cists	2G-4, 2H-4	Woven; Grass; Mat Fragments
05923	A634	Pothole Cists	1C-14	Unmodified Flora; Seeds; Cedar Berries
05927	A646	Sub-Cave	Cave C	Wood; Modified; Worked Stick
05930	A976	Western Slope Cists	2G-4, 2H-4	Wood; Modified; Tie
05932	A1030	Masonry Granary	V-12 or V-13	Woven; Basketry; Fragments
05933	A1031	Masonry Granary	V-12 or V-13	Wood; Modified; Wrapped Stick
05934	A1034	Masonry Granary	V-12 or V-13	Unmodified Flora; Corn; Husk
05935	A1036	Masonry Granary	V-12 or V-13	Reed Shaft
05936	A1038	Masonry Granary	V-12 or V-13	Wood; Unmodified; Unknown
05952a	A1032	Masonry Granary	V-12 or V-13	Unmodified Flora; Gourd; Fragments
05952b	A1032	Masonry Granary	V-12 or V-13	Unmodified Flora; Gourd; Fragments
05958	A1037	Masonry Granary	V-12 or V-13	Trimmed Shaft
05965	A1102	Sub-Cave	Cave A	Wood; Modified; Trimmed Stick
05966	A1103	Sub-Cave	Cave A	Wood; Modified; Arrow Shaft
05967	A1106	Sub-Cave	Cave B	Modified Flora; Corn; Cob on Stick
05968	A1110	Sub-Cave	Cave B	Wood; Modified; Utilized Stick
05971	A1116	Pothole Cists	T-2	Unmodified Flora; Seeds; Unknown
05984	A267	Sub-Cave	Cave C	Wood; Modified; Loop
05985	A269	Sub-Cave	Cave B	Wood; Modified; Digging Stick
05988	A293	Sub-Cave	Cave A	Combined Materials; Wood, Woven; Stick with String
06032	A478	Slab-Lined Cist	T-1	Wood; Burned; Charcoal
06034	A495	Pothole Cists	U-02	Wood; Modified; Utilized Stick
06062-1	A638	Pothole Cists		Mixed Lot; Wood; Fragments
06062-2	A638	Pothole Cists		Mixed Lot; Insect; Grasshopper
06062-3	A638	Pothole Cists		Mixed Lot; Lithics; Rocks
06062-4	A638	Pothole Cists		Mixed Lot; Wood; Charcoal
06077	A878	Western Slope Cists	2H-4	Woven; Cordage; Bark Fragments
06115	A472	Pothole Cists	W-3, X-3	Animal Skin/Hair/Flesh; Modified; Hide Cord
06136	A974	Masonry Granary	V-14	Combined Materials; Animal, Woven; Shoes
06137	A978	Pothole Cists	P-3	Unmodified Animal Bone; Remains; Squirrel
06138	A979	Pothole Cists	N-2	Unmodified Animal Bone; Remains; Mouse
06147	A1130	Pothole Cists	Q-1	Unmodified Flora; Seeds; Unknown
06186	A972	Masonry Granary	V-14	Combined Materials; Animal, Woven; Shoes
06187	A973	Masonry Granary	V-14	Combined Materials; Animal, Woven; Shoes
06220	A1104	Sub-Cave	Cave B	Charcoal

UCM Number	Scoggin Number	Storage Feature Type	Unit	Classification
06229	A412	Pothole Cists	1Q-13	Corn Cob
06233	A453	Pothole Cists	1Q-13	Unmodified Flora; Corn; Kernels
06244	A624	Pothole Cists	1C-15	Unmodified Flora; Corn; Kernels
06248	A902	Pothole Cists	1M-13	Unmodified Flora; Corn; Kernels
06257	A969	Western Slope Cists	2H-4	Unmodified Flora; Corn; Cob
06258	A1029	Masonry Granary	V-12 or V-13	Unmodified Flora; Corn; Cob
06259	A1035	Masonry Granary	V-12 or V-13	Corn Kernels
06260-1	A1039	Masonry Granary	V-12 or V-13	Unmodified Flora; Corn; Cob
06260-2	A1039	Masonry Granary	V-12 or V-13	Modified Flora; Corn; Cob on Stick
06265	A1111	Sub-Cave	Cave B	Unmodified Flora; Corn; Kernels
06271	A1148	Pothole Cists	X-1	Unmodified Flora; Seeds; Unknown

Material was found in all three of the sub-caves. Tools, modified wood, maize, and gaming pieces are the most prevalent items in these spaces. Cave B contained the most material, which is fitting as it was the largest space. Although this feature type contained evidence of cultural material in all the sub-caves, the spaces did not contain abundant material.

Three of the eight masonry granaries contained material. This metric is skewed as there are masonry granaries present in the westernmost portion of the cave, but the records do not clarify which are potholes and which are fashioned from masonry and daub. The diverse material found in these features, includes a cist cover, mixed flora, squash, shoes, maize, shafts, and some basketry fragments. The masonry granaries containing material were sequestered to three units, all located in one portion of the cave. Field notes suggest that some of the masonry granaries were covered at one time (ARC.DNM01_001_017). Removal of covers or lack of covers to begin with would contribute to the lack of material recovered within the granaries, as they would be more exposed to the elements, rodents, and visitors to the cave. For the effort it took to construct these features, it is interesting that so few were occupied.

With potholes being the most prevalent feature at the site, it is not surprising that approximately 46% contained material. Similar to the masonry granaries, the confusion over

which features on the western locale of the site are potholes or masonry structures affects this metric. In 17 of the 37 available mud cists, there was charcoal, seeds, mixed flora, raw material blanks, talons, hide pieces, cords, and maize kernels. The diversity of material and dispersed filling of these features reflect a preference for this feature type.

On the western side of the site, there is a dense concentration of storage features. Scoggin and Lohr drew the features alignment (Appendix F). Photographs, notes, and reports were consulted to try and isolate which cists were constructed with masonry and their affiliated label. The units occupied are concentrated on the eastern side of the stretch of features. Some of the cists had stone lids that were removed during excavation. Of the 31 features in that area, only three are occupied. The occupied cists include K, 0F, and G. Scoggin and Lohr made note of previous disturbances in this area which could account for lack of material (ARC.DNM01_001_015). This large concentration of storage features represents the most intensive area in the cave for storage potential.

Both slab-lined cists from the site were filled with material including charcoal and sticks. These features are thought to be some of the earlier attempts at creating storage features at the site, based on the construction of storage features before and after rockfall events (ARC.DNM01_001_015). The exposed nature of these features could account for a lower levels of cultural material present than the other features.

The people of Mantle's Cave had a variety of options when it came to dedicated storage spaces; of the 50 available features, 28 contained material. Within 56% of the features, there was room for these spaces to be filled with more material. Some items recovered from the cists and structures can also be classified as debris that would likely not need to be retrieved. The use of the features to store tools, crops, and other curated materials reflects a direct intent to store

material. The lack of cultural material in features could also be the result of extraction by the people who previously placed the items in these cists or instead by later visitors and curiosity seekers. Disturbances aside, storage activity at Mantle's Cave was occurring and the features played a prominent role in this behavior.

Storage Caches

Outside of dedicated features, the people of Mantle's Cave used other forms of containers to protect their goods. Three caches from the site reflect passive storage, a deposition of material (often seasonal) to retrieve it later (LaBelle 2015: 5). The items in the collections could be used to complete various tasks. The description of the cache found by Mrs. Mantle has similarities to some of the material in the storage caches discussed below (Brown 1935: 11). Without having seen this cache in person or having a more detailed account of the items, it is not possible to definitively classify the function of this cache. These caches showcase another side of the storage behavior displayed at Mantle's Cave.

Cache 1A

Scoggin and Lohr uncovered a large patchwork bag (UCM 06108) on April 2, 1940 (Figure 46). The pair initially thought the bag was related to Cache 1, as they were found in units U-1 and U-2 (ARC.DNM01_001_002: 72). Later, Scoggin separates the bag (UCM 06108) from Cache 1 and considers it a standalone cache (ARC.DNM01_001_017; Goff 2010: 44). This bag was given the label of Cache 1A by Goff (2010). In her work with the collection, Goff found that the buckskin bag underwent a variety of repairs as indicated by the different materials and cordage techniques used (Goff 2010: 44). Goff theorizes that "one person originally constructed the bag, and that others contributed to its repair, resulting in the presence of many different types of seams and stitching" (Goff 2010: 45). On the outside of the bag there is section with a reddish

pigment covering the hide. This cache is comprised of an empty bag, yet it still has the ability to shed light on activities at the site.

Figure 46. The large patchwork bag (UCM 06108) from Cache 1A. The stitching reflects additions and mends to the bag, suggesting it was used. Copyright University of Colorado Museum of Natural History.

Pouches are not uncommon at Mantle's Cave; however, this one displays a unique construction strategy. The 'patchwork' element of the bag does not fit with "several Fremont and Late Archaic hide bags reported" (Goff 2010: 45). The bag for Cache 1 (UCM 6177) is a similar shape and is also made from buckskin. Treatment of the hide and stitching differentiate the two bags. Ochre is often applied to hides across many cultures. The presence of ochre could indicate its use as a hide preservative, decorative pigment, or component of ritual activity (Watts 2002). Small lots of red (UCM 05736, 05739) and yellow (UCM 05735) ochre were found at Mantle's Cave. This could suggest that application of the mineral was occurring at the cave. The bag likely served as a container that could be filled with an assortment of items.

Cache 1A provides another perspective on the use of protective receptacles at Mantle's Cave. Although it was empty when it was found in 1940, the bag could have been used as a

storage vessel similar to the other caches from the site. Material may have been removed from the bag, and the sack was the only item left behind. The bag could also have been left in the cave to be retrieved when people ventured back to the site. In either interpretation, the cache functions as passive gear, ready to be retrieved and used.

Cache 2

Uncovered by Lee and Jones in 1939, Cache 2 is a basket containing various items related to food procurement. The precise location of where this cache was recovered is unknown, but a note from the archive states that it was found "four paces or 12 feet from east end of large rock fall where big masonry cist is located" (ARC.DNM01_001_018). Sommer estimates that Cache 2 "would have been found some 5-10 feet west of Cache 4 and 5" (Sommer 2013: 216). In Goff's (2010) analysis of the cordage from the site, she observed that the "cordage in Cache 2 is of exceptional quality and consistency, suggesting that it could have been made by one single person" (Goff 2011: 45). Cache 2 was filled with a variety of procurement technologies (Figure 47).

Figure 47. Cache 2 recovered by Lee and Jones. Photos of UCM 05957 & 05960 by Francois Gohier. Copyright University of Colorado Museum of Natural History.

A globular basket (UCM 05957) was used to store gear. This basket is lined with pitch on the inside, making the vessel water resistant. The basket was made in the closed-coil style and has a split-rod foundation with interlocking stitches, supporting Fremont affiliation (Adovasio et al. 2002). Three fishhooks (UCM 05960) were found inside the basket with the fishing line still attached. Several styles of snares were represented among the 123 snares in this cache (Goff 2010:45). Noose peg snares (UCM 05947) were one variety found at the site. Two snare bundles (UCM 05959 and 05961) from the cache have a similar central binding system. Bound by a thick piece of cordage, UCM 05962 is a large group of snares. Other Fremont sites have yielded snares similar to those in this cache (Janetski 1979). The net bag (UCM 05948a, 05948b) could have been used to procure fish or other small game. A bag with a similar drawstring technique was found in "Danger Cave by Jesse Jennings which was dated to the Archaic," (Sommer 2013: 216). Cache 2 had the supplies to conduct a trapping or fishing excursion.

This cache reflects another form of passive gear stored at Mantle's Cave that was intended to be used upon a return to the site. Although this cache was reportedly buried in the sand and not in a storage feature, the durable nature of the basket protected the items inside. Using the basket could have also made it easier to transport once the cache was retrieved. The availability of fish and small game in the site area would have made this an advantageous pack of gear to have at the ready.

Cache 6

A diverse toolkit, Cache 6, found at the back of Mantle's Cave (Figure 48). Notes from the 1939-1940 excavation label this cache as a dart or arrow maker's kit. Lohr found the cache on April 19, 1940, at the cave's back wall "under 1 inch of sand and rock rubble on old surface of greenish-gray compact sand. No cache pit was present; the specimen had apparently been covered, perhaps with sand and rock rubble heaped a little over it (ARC.DNM01_001_017). The cache is comprised of sixteen items that relate to lithic and shaft modification.

Figure 48. The items of Cache 6 can be thought of as an 'arrow-makers' kit. The items in this image are not to scale so as to better show the details of each item. Copyright University of Colorado Museum of Natural History.

Similar to the other caches, an item was selected to protect the contents of the cache. For Cache 6 this item is a net bag of twine with a grass lining (UCM 06170). The net runs along the exterior of the bag, keeping the grass in place. The cordage used to fashion this bag "is similar to the net bag in Cache 2," and the style is "the same type seen in the majority of the Mantle's Cave assemblage" (Goff 2010: 47). Using the combination of net and grass as a container is different from the other caches from the site.

Cache 6 featured eight pieces of chipped stone including seven bifaces (UCM 06155, 06156, 06157, 06158, 06159, 06160, 06161) and one worked flake (UCM 06162). The bifaces range in size and flaking techniques (Figure 49). The raw materials in this cache included quartzite, chert, chalcedony, and jasper. The worked flake likely served as an expedient tool that could service general needs. In Fremont contexts, bifaces were a way to transport raw materials, however the sizes of these bifaces usually range from "10 to 20 cm. in length" which is larger than those in Cache 6 (Loosle 2000: 289). The smaller size could be explained by the reduction of these items as well as their possible proximity to sources so people would not have to fashion as large of pieces to travel with. The lithics of Cache 6 are a source of passive gear that can be utilized when new tools are desired.

Figure 49. The bifaces from Cache 6. The items vary in size and raw material. Copyright University of Colorado Museum of Natural History.

The cache also included an assortment of tools fashioned from bone. Two deer ribs (UCM 06166, 06167) have slight notching of the bone along the ridges of ribs. The wear could be a side-effect of arrow shaft straightening and the difference in wear could be a result of differences in the intensity of use of the items (Dockall and Danzeiser-Dockall 1999). A modified scapula (UCM 06168) could have been used in a similar manner to the notched deer ribs as a sharpener (Olsen 1980). A bone awl (UCM 06163) was another bone tool featured in this kit (Figure 27). Generally, awls are thought of as "piercing instruments used in making coiled baskets, sewing leather, and other tasks that require a thin sharp instrument" (Olsen 1980: 58). The sheep horn wrench (UCM 06169) is one of the most striking items featured in this cache. I measured the hole on the wrench and compared it to a similar item from the Alva site

that was included in a report by Wormington and Lister (1956). Using methods outlined in LaBelle and Newton (2020) on the measurements of Cody shaft abraders, I was able to theorize if the shafts being straightened through this hole would have supported arrows versus darts. The hole width from the wrench at Mantle's Cave was 1cm, and the horn from the Alva site had a hole width of 0.9 cm. The smaller width suggests these items were being used to straighten arrow shafts. Mantle's Cave contains arrow points and a set of polishers (UCM 05034) whose width suggests they were also used to support arrow shaft production. The variety of bone tools in this cache could be used to adjust items involved in arrow production.

Two pieces of hide (UCM 06164, 06165) were featured in the cache. UCM 06164 is a longer piece of hide with some reddish pigment. The pigment could be ochre, which has ritual ties and a function use as a hide-preserving tool. UCM 06165 is the smaller of the two pieces with more fur on the outside. Both pieces are relatively small and fragile. These items possibly functioned as 'flaker's aprons' which describes the use of leather by flintknappers to brace lithics in the hands with the leather separating the stone from their hand (Geib 2004, Kallenback 2013). The hide enables knappers to grasp the items better and protect their hands. The interpretation of these items as 'flaker's aprons' would fit with the material found in the rest of the cache that has a direct affiliation with lithic-related activity.

Fragments of three quills (UCM 06154) were included in the cache. The quills appear to have been gnawed on and partially destroyed. There is evidence of rodent scavenging in the area of the cache (ARC.DNM01_001_017). In their fragmentary state it is hard to connect them to a specific species. Mantle's Cave has a plethora of feathers present, demonstrating the Fremont's affinity for birds was strong here (Sommer 2013: 131).

When revesting notes from the excavation, Scoggin and Lohr mention two additional items that have not be previously affiliated with the cache. These include a 'feather cloth' and seeds. Both items could not be definitively identified but there are two possible records that match each item. The 'feather cloth' could be a grouping of feathers (UCM 06117) that is stored in a vial. Or the item could be a flicker feather bundle (UCM TIN-0481) that closely resembles the flicker feathers from the regalia in Cache 1. In Fremont contexts, there are five examples where feathers have been integrated into cloth (Lambert et al. 2019: 29). Based on the limited description, it is more likely that UCM 06117 is the 'feather cloth' described. Seeds were also discovered with the cache, though the exact specimens may have been lost or incorrectly cataloged. UCM 06087 are labeled as seeds, although they look like juniper berries. These could be misinterpreted for seeds, and they are included in this sample because the catalog number associated with this vial does not have corresponding data from the original excavation. UCM TIN – 0477 is another vial filled with some cloth to keep the small, dark seeds at the base of the vial from moving. These are more likely to be the "wild grass, fruit seeds" that were described during excavation. The inclusion of seeds is not uncommon and even in flintknapping kits seeds have been found (Geib and Robbins 2008; Dial 2016). Seeds can be remnants of food, medicine, or possibly possess some spiritual power (Geib and Robbins 2008; Dial 2016). UCM TIN-0477 appears to fit the description of the seeds. With future archival research, it is possible that the reconciliation of the temporary inventory numbers (TIN) could be achieved which would illuminate the connection of the items to Cache 6.

Cache 6 is another example of passive gear stored at Mantle's Cave. This mobile toolkit would be useful to complete tasks associated with the production of arrow-related items. As a way of anticipating future needs, this cache was crafted to serve a population when they moved

back into an area or if they needed to go on the move again (Geib and Robins 2008: 314). The net bag of twine with a grass lining (UCM 06170) and its contents could have been loaded into another basket or bag to make transport even easier. Depositing this cache at a site with other gear suggests the creators intended to come back and retrieve these items.

Even though Cache 2 does not have a precise extraction location, these three caches are congregated to the back of the cave. Cache 1A was recovered at 17 inches below the surface while Cache 2 was found 2 inches from the surface. Both caches were found within the first layer of cultural material present at the site and display ties to the Fremont. Cache 2 and Cache 6 employ a container to keep items congregated and protected while Cache 1A is ready to serve as a container (Appendix D).

Food Storage

One of the categories of stored material at Mantle's Cave was foodstuffs. This can be a sign of passive or active storage, depending on the needs of the community. In the area around Mantle's Cave, having a variety of food stores that are located separately from habitation sites (or off-site storage) is a common food strategy (Yoder 2005: 8). Mantle's Cave could have served as a possible storehouse for a local community. Maize and squash were the primary crops stored at the site. There is a singular bean (UCM 06232-2) from the site which was not found in a food storage context. There are collections of seeds at the site but their use as a food source was not able to be confirmed. As discussed earlier in the chapter, Mantle's Cave had the potential to store an abundance of material. earlier in the chapter, Mantle's Cave had the potential to store an abundance of material.

Six of the 50 storage features contained maize or squash remnants (Figure 50). More features contained foodstuffs, but their locations were not clear. Disturbance and retrieval of the

foodstuffs prior to excavation likely contributed to the diminished levels of food storage. With the large numbers of storage features present at Mantle's Cave, it is likely that at one point past people's stored crops here as they invested time and energy into modifying the site to fit their needs. The food storage is dispersed across the cave and across feature types. Potholes were used more frequently to store food and the masonry granary contained the greatest density of foodstuffs. Compared to the presence of foodstuff across the cave generally, the deposition of food into storage features was not pervasive (Appendix D). Small crop remnants are found littered along the cave floor, possibly as a result of rodents, disturbance during excavation, of debris left in the wake to use of stored crops. Maize kernels and squash fragments are the primary remnants of crops recovered. Their fragmentary nature coupled with the documented disturbance to the storage features could account for diminished evidence of food storage. Maize was only recovered in some of the storage features (Appendix D). Compared to maize generally, the stored maize was found primarily in the northwest section of the excavation grid. It is still important to note that features were able to preserve items for hundreds of years.

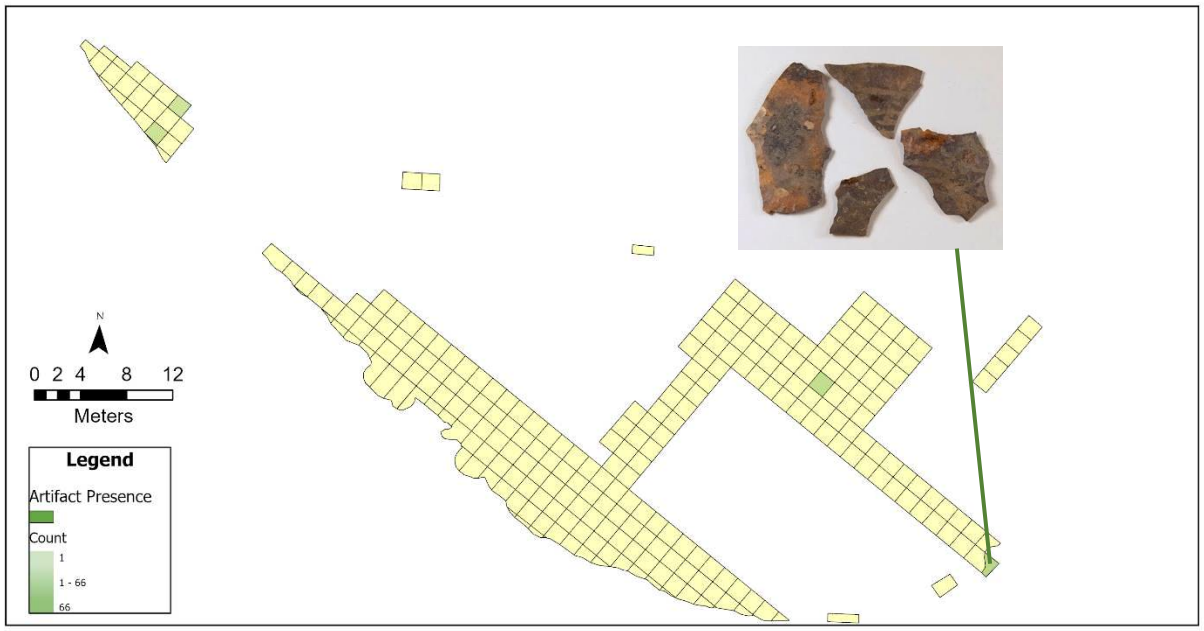

Figure 50. Only four of the six storage features containing maize or squash could be mapped. Squash fragments (UCM 06012a) from unit 1Q-13 are featured on the map. Image of UCM 06012a Copyright University of Colorado Museum of Natural History.

Other Examples of Passive Storage

Snares

Outside of the predefined caches, the people of Mantle's Cave deposited 25 additional snares around the cave. The styles of snares include double noose snares (UCM 06188), single peg noose (UCM 05942), and general snares (UCM 1939.01.004,06061a, 06061b). UCM 05448 is described as a net snare but is no longer part of the collection housed at CUMNH. UCM 06061b is a fragment of cordage taken from UCM 06061a. Jones and Lee recovered most of the snares, making it difficult to ascertain where they were found. Scoggin and Lohr recovered a snare (UCM 06061a) from unit 1C-14 under "four inches of hard pack silt, with rock rubble on silt top" (ARC.DNM01_001_018). Though the location of many of the snares remains unknown, the snares shed light on how the people of Mantle's Cave acquired game.

Keeping snares at the site would help the people revisiting Mantle's Cave ensure they had gear to support their subsistence needs. Remains of small game were found at the site and could

have been captured through the use of snares. The Fremont were known to employ snares, as part of their diverse subsistence strategy (Janetski 1979). Even if the snares were not left in curated storage spaces, they still indicate a desire by the people of Mantle's Cave to curate a collection of gear that would enable them to face a variety of challenges.

Shoes

In addition to the moccasins (UCM) found in Cache 3, there were an additional three shoes found at the site. The shoes (UCM 06186, 06187, 06136) were found inside a granary located within unit V-14. Scoggin and Lohr describe the granary as "the best of any in the cave. It is completely lined with stone slabs and clay mortar" (ARC.DNM01_001_015). Depositing the shoes into storage feature would enable easy access when new footwear was desired.

The shoes in V-14 are a departure from the moccasins in Cache 3 and Fremont footwear generally. All three shoes are crafted in the style of sandals which could suggest they were crafted to be worn in a hotter season than the thick, insulated moccasins. Sandals and moccasins can both be constructed with leather, though sandals can also be made of fibers. The construction of the shoe types offer different levels of protection for the wearer or signal cultural affiliation (Nash 2018). Two sandals (UCM 06186 and 06187) appear to be a pair (Figure 51). The shape of the toes and similar strap style support the classification of these two as a pair. Across all three shoes, hide and cordage are used to keep the footwear together. The third shoe (UCM 06136) does not have a piece of hide cord connected to the front of the shoe, though there are holes where a cord could be threaded through. A section of the toes would likely poke out at the front of UCM 06136 due to short and curved nature of the top piece of hide.

Figure 51. The sandals UCM 06186 (on the right) and UCM 06187 (on the left). Hide and cordage were used to fashion these shoes. Copyright University of Colorado Museum of Natural History.

Examples of sandals in the Fremont record are limited, as moccasins are the predominant style. A pair of buckskin sandals was found in a Fremont context at Rasmussen Cave on the nearby Tavaputs Plateau of Utah (Spangler 2002: 395). Accounts of sandals among the Basketmaker and later Great Basin groups is well documented (Spangler 2002). The presence of sandals at Mantle's Cave could be a result of trade, influence, or a wonder of preservation that captured a rare Fremont tradition. Depositing these shoes into a dedicated storage feature would help the items remain accessible and in good condition if a shoe change was needed.

Reflection

When looking at the overall location of storage-related activity, some patterns emerge (Figure 52). A dense concentration of material was observed in the northern section of the

excavation grid with particular emphasis on the granaries in sections V-13 and V-14. This upper portion of the excavation also had clusters of material to the east by the cave wall. Along the base of the excavation grid, material was found dispersed across the area. There was some material in the western portion of the site where a large number of storage features are present though there was room for more material to be deposited here. The storage is all behind the drip line, which would further aid in the preservation of material. Storage zones across the cave included a mix of utilizing natural and built facilities.

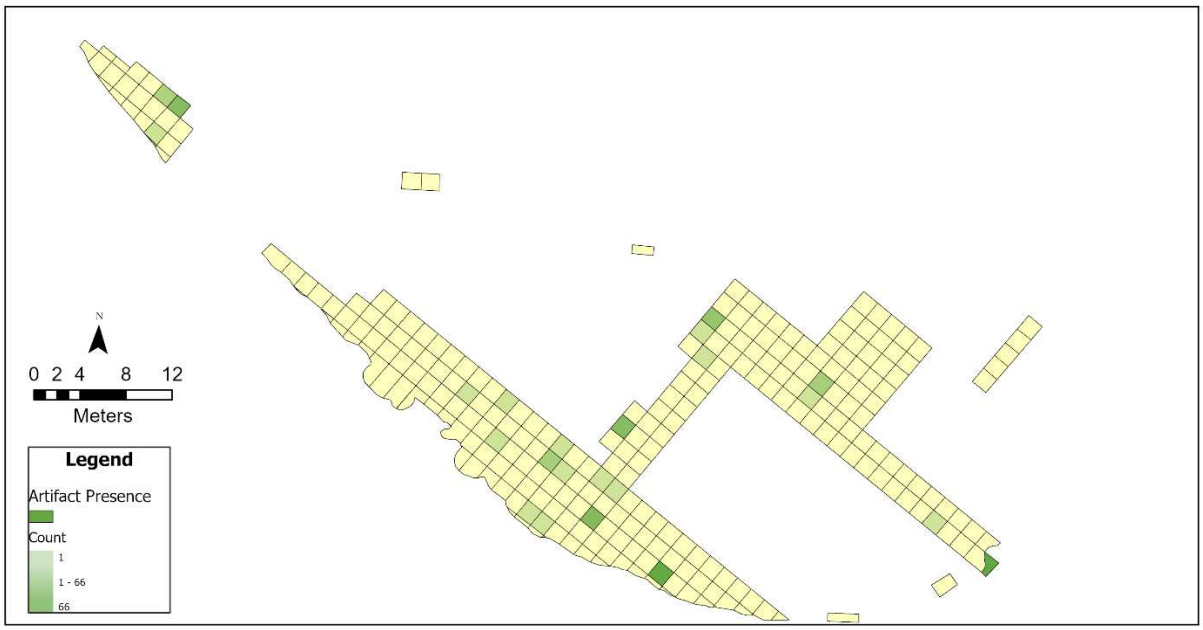

Figure 52. Artifacts related to storage activity. Material was often recovered from dedicated storage features.

Scoggin and Lohr keenly identified that Mantle's Cave was being used to store material. The presence of 50 storage features suggests that Mantle's Cave was valued for its accessible nature and preservation qualities. Features may have been emptied and never replenished, and gear carted off and deposited elsewhere. Mantle's Cave provides a glimpse into the material deemed important enough to store for the Fremont. Food, tools, gear, and other items tied to subsistence were key. Whether groups were passing through seasonally or living in the Castle Park area, having a site with bountiful storage space was valued.

CHAPTER 7: RITUAL ANALYSIS

Overview

This chapter addresses the possible ritual associations present at Mantle's Cave. For this section, ritual refers to the enactment of specific behaviors to fulfill religious or spiritual procedures. The evidence of ritual behavior at cave sites, as discussed in Chapter 3, can generally be captured by four patterns: presence of cave art, activity in zones with less light, burial of human remains, and placement of ritual deposits. Throughout this chapter, each criterion will be evaluated at Mantle's Cave to see what behavior can be identified and where it occurred. The analysis presented in this chapter explores a new dimension of the cave. Although several of the previous studies on Mantle's Cave have grappled with the possible ritual association with items from the cave, a comprehensive look at all of the site's features has not been completed. In this analysis, some of the most spectacularly preserved and crafted items from the site will be discussed to explore their potential connection to the ritual lives of the people of Mantle's Cave.

Rock Art

The creation and presence of rock art in caves can serve as an indicator of ritual activity or a place's sacredness. Scoggin and Lohr did not document any cave art at the site but were proficient in documenting other panels during their time at the Monument and adjacent private lands. During the 1988 review of the cave by Alpine Archaeology, the crew documented "one prehistoric rock art panel, one possible prehistoric rock art panel, and five panels containing recent inscriptions are present in Mantle's Cave" (Horn and Reed 1989: Section number 7, page 14). The main prehistoric petroglyph, Panel RA-2, was found in the northeast portion of the site on a boulder that "measures only 83 by 80 cm and is 49 cm high" (Horn and Reed 1989: Section number 7, page 14). The panel is described as having "three complete or partial concentric rings.

The pecked lines measured about 1 cm wide. The central circle was 7 cm in diameter, the next was 18 cm in diameter, and the outer ring was 26 cm in diameter. The figure terminated on the left-hand side where the [panels'] facet slightly changes its angle. The two outer rings were incomplete" (Horn and Reed 1989: Section number 7, page 14). Horn and Reed (1989) included an image of the panel in their report (Figure 53).

Figure 53. Image 19 from Horn and Reed (1989) shows the remnants of the rock art. The "rock art panel at entrance to cave (RA-2), looking southeast" (Horn and Reed 1989: section photographs page 3).

Today, the National Park Service includes an image of the RA-2 panel on one of their interpretative signs at the site. After the feature's documentation in 1988, the piece was defaced with graffiti and rubbed off the boulder (Horn and Reed 1989: Section number 7, page 14). The other possible panel, RA-3, was found on the northwestern side of a boulder on the east side of the cave. This panel was described as having "a few very faint lines can be discerned, but these

do not extend below the brown rock cortex. The faint lines make no pattern and may not be of human origin" (Horn and Reed 1989: Section number 7, page 14). The degradation of the rock art as well as the lack of reporting on it from the primary excavation of the cave complicated the assessment of it. From the art description, it does not appear to match any Fremont rock art panels associated with possible ritual behavior (Keyser 2016; Keyser and Poetschat 2017; Spangler 2002) The panel's context and deteriorated state make it hard to determine the art's connection to the site and the people who used it.

Activity in Zones with Less Light

The three sub-caves located at the back of Mantle's Cave are the only spaces with diminished available light. Lohr and Scoggin identified three spaces and labeled them Cave A, B, and C. Integrating the location of these caves into my digital representation of the cave was not possible as the location of these caves is not always clear concerning the established units. This section provides an overview of these spaces and what material was found inside them.

Cave A is located along the back wall near the large masonry granary (Appendix E). The inside of the sub-cave appears to be within the twilight zone based on the available photographs, as some light permeates into the space (Greer and Greer 2009:91). The pit within the sub-cave was "full of the material overlying the charcoal; it had been dug after the charcoal had accumulated and had filled at the time the material containing rat droppings, etc., had accumulated. Mat fragments, black chips (slate), and a large rough core of red cherty material were found within it. This appears to be a pit cist, dug at approximately the same time as those in the cave floor. But may be rodent 'hole'," (ARC.DNM01_001_015). Cave A is a restricted space that does not appear to have much evidence of ceremonial significance.

A sheltered pathway connects Cave B and Cave C. From photos, Cave B appears to fall within the transitional dark zone, as some light can be seen inside the space, but artificial light is needed to view the whole space (Greer and Greer 2009:91). Caves B and C appear to offer more space than Cave A; however, their shape does not easily accommodate space for ritual activity according to the photographs and descriptions of the caves (ARC.DNM01_001_015).

Between the three caves, there were 15 accounts of cultural material. The material includes tools, gaming items, modified wood, and maize. This collection of items could be used to support a variety of needs. The deposition of the items in these spaces are not easily identifiable as votive offerings based on the available information about their context. These spaces were likely used as storage chambers due to the seclusion and protection the sub-caves offered. Overall, the light restriction in these places did not equate to a ritually separated space.

Human Burials

The presence of a burial of human remains can be another indicator that a site has sacred power or association. At one point during the 1939-1940 excavation, Scoggin believed he found an internment, stating, "I've come across a situation that looks as though it may yield a burial" (ARC.DNM01_001_002: 12). The next day the area was excavated further and revealed that "the 'something' at the section of poles, represented in yesterday's entry proved to be no burial" (ARC.DNM01_001_002: 12). No further evidence of burials were ever found in the site. Fremont internments in caves have been documented, such as sites in Dry Fork and Ashley Creeks near Vernal, Utah (Spangler 2002: 393). Within Dinosaur National Monument, the Juniper Ledge Shelter, and Pool Creek Burial site both contained internments (Spangler 2002: 98). The absence of a burial does not immediately negate a site's ritual association.

Ritual Deposits

In Mantle's Cave, six deposits have ritual associations. This section explores the items in these deposits and how they may be connected to Fremont ritual practices. The available Fremont literature was consulted to explore the ceremonial connotations associated with these items. Five caches and one other artifact will be discussed here. My analysis of the ritual items suggests that the material had ritual connections but their presence at Mantle's Cave was related to ritual storage not ceremonial activity. A presentation of the spatial distribution of the material will be considered at the end of the section.

The Necklace

One of the remarkable pieces from Mantle's Cave is a necklace (UCM 05976) constructed of juniper berries and bird bone (Figure 54). An image from the 1939-1940 excavation of the cave shows the location of the necklace and its original pattern (Appendix E). In his journal, Scoggin recounts the excavation of the necklace, saying, "Ed uncovered some beads today, in section D-1, comprising what looks to be a string several feet long, placed in gentle loops along the bottom of a crevice between stones. They occur in the same general locality as the stone knife, mat twigs, and the metate, and at yet I'm not altogether satisfied that a burial isn't close about. The beads are of juniper berries and tubular bone. It is possible to uncover the beads in a (unknown word) manner with the hand bellows, so that a sketch can be drawn as to their original position" (ARC.DNM01_001_001: 77). Later the pair was able to re-string the necklace using dental floss that Scoggin had on hand, an idea inspired by Scoggin's father who was a dentist (LaBelle 2019: 7). The necklace measured a total of 28 feet in length (Burgh and Scoggin 1948: 66). Two other bone beads were recovered from the site, one of these

beads (UCM 05701a) was also found in unit D-1 but in a different context. The necklace is the only item found outside of a cache that I argue have potential ritual connotations.

Figure 54. Strands of the juniper berry and bird bone necklace (UCM 05976). Scoggin and Lohr preserved the pattern while re-stringing the necklace. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

The Fremont record reflects the use of adornment practices that could be tied to ceremonial events. Many anthropomorphs in the Classic Vernal style rock art are seen with pendants or strands around their necks (Keyser and Poetschat 2017: 160). One figure from the Sun Carrier Panel at McConkie Ranch near Vernal, Utah, can be seen donning a necklace with small, pecked circles (Simms 2010: 82). This style of adornment is different from some of the other, more trapezoidal, pendant styles displayed in Fremont rock art (Keyser 2016; Spangler 2002). A figure wearing a necklace, which appears to be comprised of many strands, was observed on a panel at Steinaker Reservoir near Vernal, Utah (Keyser and Poetschat 2017: 164).

Fremont figurines were also stylized with necklaces, as seen on the figurines from the Old Woman Site (Janetski 2012). As a form of decorative adornment, the necklace does not serve a utilitarian function; it could be used to signal status, affiliation, or aesthetic choices. The presence of necklaces on Fremont figurines and in Fremont rock art suggests that this form of decoration may be associated with ceremonial behavior.

Cache 1

On April 2, 1940, Scoggin and Lohr found "a cache of rawhide strips, a large patch-work buckskin bag, and another "medicine man" pouch. The latter contains the most unusual objects of the dig – the "finds" each passing day seem to be that. I note in glancing back through the pages. This one contains, among other items, a head-dress of beautiful colored feathers and one of the most beautiful stone knives I have ever seen; it is a gray quartzite and almost eight inches long" (ARC.DNM01_001_002: 72). Charcoal and maize kernels were found in the area around the pouch (Burgh and Scoggin 1948: 38). Scoggin's description of Cache 1 reveals the connection between the items of items which were found inside a buckskin bag (UCM 06177).

Past people made a clear choice when grouping these items, speaking to a possible shared function of these items or the decision to have a dedicated source to pull from. Cache 1 contains 16 diverse items (Figure 55). Items within this cache range in the degree of ritual affiliation they reflect. The cache contents also display "considerable cordage variability" (Goff 2010: 44). My examination of the contents of the bag suggests that the inclusion of items was intentional and primarily associated with fulfilling ritual needs.

Seven items within Cache 1 have compelling ties to ritual activity. The Flicker Feather Regalia (UCM 06178) is one of the most striking pieces in the collection (Figure 9). Discussions in Chapter 2 outline the cultural associations with this piece and the ideas about the item's

function. As noted earlier, the flicker feathers came from two species of flicker that live separately on the eastern and western sides of the Rocky Mountains (Burgh and Scoggin 1948: 40). The care to collect these feathers suggests that the item they were used to create had some value. Similar regalia has been found, such as the headwear from Temple Creek found by Morss (1954). Fremont rock art often depicts anthropomorphs with some form of regalia on their

Figure 55. The items from Cache 1 are reunited in this photograph. The items are not to scale in this figure to show the detail of each item. Photo of 06178 by Francois Gohier. Copyright University of Colorado Museum of Natural History.

heads. Simms connected a figure, that could be Fremont or Ancestral Puebloan in origin, in the Moab area to the Flicker Feather Regalia from Mantle's Cave based on their similar construction (Simms 2010). The careful creation, highly stylized form of adornment, connection to rock art, and remarkable nature of this piece suggests that the piece has value beyond the functional. This cache also included three feather bundles, highlighting the Fremont affinity for birds. The

bundles include magpie (UCM 06182), hawk (UCM 06183), and golden eagle (UCM 06184) feathers. Sommer (2013) interpreted these bundles as "secondary flight feathers and were probably not collected for fletching" but likely "for purposes closer to the use of feathers in medicine or spirit bundles" (Sommer 2013: 174-175). Feather bundles have been suggested to serve a ceremonial function for the Fremont (Lambert et al. 2019: 29). For the Fremont, "certain taxa, most notably owls, hawks, and eagles, may have been curated within ceremonial or communal structures, and therefore may have played a symbolic role in Fremont rituals" (Lambert et al. 2019: 38). The feather bundles and feather regalia reflect the value the Fremont placed on birds and their feather and how those beliefs manifested in cultural regalia.

Another form of adornment found within Cache 1 was a pendant (UCM 06109) made of hide and decorated with two strands of beads (Figure 56). This pendant was labeled a "butterfly pendant" by Lohr and Scoggin based on its unique shape. Fremont rock art anthropomorphs often include decorative elements on the torso of the figures (Keyser 2016: 21). The slate beads on the pendant resemble those on a figurine from the Dillman from Nine Mile Canyon, Utah (Janetski 2012). The pendant reflects another decorative form of Fremont ornamentation that likely has a ritual affiliation. Within Cache 1, there was a singular maize kernel and a bean. Maize is pervasive at Mantle's Cave; however, the bean is a rarity at the site and the area. Both crops were grown by the Fremont, and their inclusion in the cache could have been related to their importance as a form of subsistence (Spangler 2002). Including only one kernel (UCM 06232-1) and one bean (UCM 06232-2) suggests that the items were not there for food or as seeds, their inclusion could be related to beliefs around sustenance and growth. The seven items described in this section include the artifacts with the greatest ritual connection.

Figure 56. The hide and slate pendant (UCM 06109). The hide is thick and evenly shaped while the beads are strung on strips of cordage. Copyright University of Colorado Museum of Natural History.

Two lithic items were included in Cache 1 and could serve functional and ritual purposes. Scoggin and Lohr categorized the knife (UCM 05666), as a 'ceremonial blade' (ARC.DNM01_001_019). The knife (Figure 56) resembles the large Fremont knife form that could be hafted, like the one (UCM 05990) from Mantle's Cave. The knife could be used as a knife blank or as an offering piece. Another large knife (UCM 06189) fashioned in a similar way to the other large Fremont knives from the site. An obsidian flake (UCM TIN-0594) was also included in the cache. This material is the only "flaked specimen" made of obsidian in from the site (Burgh and Scoggin 1948: 44). Fremont sites "on the Northern Colorado Plateau seldom contain much obsidian" and the material is generally sourced from the "Topaz Mountain, Black Rock, Mineral Mountains, Modena (all in western Utah), and Malad in southern Idaho" (Janetski 2002: 354-355). The exotic nature of the flake could suggest that the material was selected for its unique attributes to fulfill some spiritual desire, though the flake could have been included to be

shaped later to make a functional item. These lithics could serve functional or ritual purposes, depending on how Fremont people desired to use the items.

Figure 57. The knife from Cache 1, UCM 05666. The grey quartzite knife could have been secured in a haft or left as a dedicatory offering. Copyright University of Colorado Museum of Natural History.

Within Cache 1, there were seven artifacts that served primarily utilitarian functions. The container protecting the cache was a buckskin bag (UCM 06177). This bag (Figure 58) had been sewn together into a diagonal shape. UCM 06177 was made from a deerskin, likely the head as "deer, evidenced by the presence of eye holes that are sewn shut" (Goff 2010: 44). A dried reed still sticks out at the top of the bag. The similarities between the bag from Cache 1 and Cache 4 were noted early in the excavation (ARC.DNM01_001_017). The bag has no clear ritual affiliation when it is considered separately from the rest of the cache.

Figure 58. The bag, UCM 06177, from Cache 1. This bag was used to protect a variety of items. Copyright University of Colorado Museum of Natural History.

Two black stones (UCM 1939.01.001 and 1939.01.002) that were shaped evenly with distinctive groves on their sides were also included in the cache. One of the stones (UCM 1939.01.001) had a cord still attached to the stone. These stones are likely to serve as weights to help balance arrow shafts, though they could also serve some aesthetic purpose. Similar items were found in Basketmaker era caves in northeastern Arizona (Burgh and Scoggin 1948).

Two modified horn (UCM 06180 and 06185) items were also included in the cache. The function of these pieces can be classified as batons or punches that are implements of chipped stone modification. Similar items have been found in a cache from Sand Dune Cave in Utah (Geib 2004: 275). Geib (2004) theorizes that "the appearance of horn flakers in early agricultural contexts on the Colorado Plateau likely happened through population movement rather than through diffusion; the flakers are one piece of evidence in the larger picture that appears to support the idea that some preceramic farmers migrated to a portion of the Colorado Plateau" (Geib 2004: 276). The horns batons show use, strengthening their functional explanation.

Three bundles of raw materials were also included in the cache. Leather straps (UCM 06181) were also included in the cache and resemble the straps from the shoes at Mantle's Cave. A band of wrapped sinew (UCM 06179) appears to be more prepared than some of the other pieces of sinew from the collection. A section of twisted bark (UCM 06014) did not appear braided or formed. The inclusion of distressed bark in caches has been documented at sites like Chewaucan Cave (Kallenbach 2013: 81). The functional items in Cache 1 could be used to support ritual activity. However, their affiliation with ceremonial behavior is not as direct.

Artifacts from Cache 1 fall on a spectrum between utilitarian and ritual functions. This is not an uncommon phenomenon; a diverse cache from Horseshoe Ranch Cave in the Lower Pecos of Texas highlights the incorporation of medicine items and tools (Dial 2016). Rituals can incorporate items with primary functional uses, like the lithics and tools in this cache. The Fremont's use of feathers is on display in this cache. The elements represented in this cache can be connected to ideas about Fremont spiritual life.

Cache 3

One of the smaller caches from Mantle's Cave is Cache 3 (Figure 59). Uncovered over two days in February 1940, the cache was packed in a shallow pit lined with sticks and bark (ARC.DNM01_001_002). A pair of Fremont-style moccasins (UCM 06193) were uncovered first, then a deerskin head pelt (UCM 06102) was found below. Similar to the construction of the bag from Cache 1, the deerskin head pelt had its eyes sewn shut (Burgh and Scoggin 1948: 42). The ears of the deer were stiffened with woven plant material. Burgh and Scoggin believed the moccasins would have been utilized during the winter as they were insulated with grass (Burgh and Scoggin 1948: 41). The sZ cordage style used in this cache is "opposite of the majority in the overall assemblage," possibly indicating a different group's creation of cache components (Goff

2010: 46). The dating of this cache will be discussed more extensively in Chapter 8 though it is important to mention that the items date to periods separated by two thousand years (Goff 2010). It is theorized that the "Middle Archaic users of the site left behind the deerskin headdress and that subsequent Fremont users, of a different social group than the dominant one using Mantle's Cave, came upon it and added objects of their own, the pair of moccasins" (Goff 2010: 48). The grouping of these two items raises several questions about function.

Figure 59. The pair of shoes (UCM 06193) and the deerskin head pelt (UCM 06102) from Cache 3 are shown above. The images are not to scale. Both photos by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Elements of the Fremont record can be compared to the items from this cache. Although the deerskin head pelt predates the Fremont, anthropomorphs in Fremont rock art often wear headwear connected to deer. Four anthropomorphs from Vermillion Canyon (5MF492) have antler 'headdresses' that make them appear deer-like (Keyser 2017: 29). documentation of shoes in ritual contexts has not been demonstrated among the Fremont. Shoes similar to the pair from Mantle's Cave have been observed along the Fremont River in Utah (Morss 1931). Although there are no clear indicators of this form of regalia being connected to ritual behavior in the Fremont record, the construction of the cache over generations could suggest the importance of the material.

Implications for the ritual nature of this cache can discussed when material from related groups is discussed. Deerskin head pelts similar to the one from Mantle's Cave have been found in the Capitol Reef area of Utah (Goff 2010: 45). The theorized use of these items ranges from hunting disguises to shamanistic regalia (Simms 2010). Beyond the archaeological record, "ethnographic documentation shows that they were often used as disguises for hunting and as spirit helpers by leaders and shamans" (Simms 2010: 65). Constructing regalia that resembles animals is seen within the ceremonial traditions in Puebloan groups in practices like the Buffalo Dance (Webster 2007: 168). The deerskin head pelt's purpose could fulfill several Fremont needs. Collections of shoes in caves can "offer a point of connection between this world and the underworld. Sandals are a person's individual point of connection to the earth. It therefore makes sense to discard sandals in caves," according to a cultural resource advisor from the Zuni (Nash 2018). Footwear can also act as a signaling device to highlight affiliation or status (Nash 2018). Consulting comparative literature provided points for comparison, as the Fremont literature did not contain enough points for evaluation.

As a group, Cache 3 could support and enable a hunter to blend in and have protected feet during a hunt. A spiritual leader could have worn the items as they engaged in ceremonial activity. Cache 3 was not enclosed in a pouch or bag; it was laid in a pit with material around it that could offer protection. A ritual interpretation of this cache is not the only feasible choice; however, it is important to consider the proximity of the items and the correlation between these items and ceremonial behavior.

Cache 4

Cache 4 is comprised of five catalog numbers. This cache was not photographed at the behest of the University of Colorado Museum of Natural History. Inside a reed bag (UCM

06173a) were a feather bundle (UCM 06175), rabbit fur (UCM 06174), sinew (UCM 06176), a fishhook, and maize kernel (UCM 06173b). When uncovering the item, Scoggin refers to the cache as a 'medicine bag'; however, that term is not later used to describe it in the 1948 report by Burgh and Scoggin (ARC.DNM01_001_008). Goff (2010) found the fishhook and maize kernel tucked inside the bag while studying the piece during her time at the University of Colorado Museum of Natural History (Goff 2011: 46). The feather bundle from the cache appears to be trimmed red-flicker feathers similar to those in the Flicker Feather Regalia from Cache 1, although the cordage used to tie the bundle of feathers is "the opposite twist direction of most cordage seen in the headdress" (Goff 2010: 44). Within this feather bundle there are approximately 16 feathers (Sommer 2013: 117). The bag's construction is similar to the twined mat style in Fremont assemblages that use the zS cordage style (Goff 2010L 46). Cache 4 has material that is very similar to other caches from the site.

Within the Fremont record, there are connections to some of the material from Cache 4 with ritual behavior. The bag displays Fremont techniques and likely served as a source of protection that could also enable the movement of material more easily. As discussed in the section on Cache 1, feathers are an item class that often has ritual associations with the Fremont. The connection of the feather bundle in Cache 4 to the regalia in Cache 1 further strengthens this affiliation. The rabbit fur from Cache 4 could have been gathered as the people of Mantle's Cave used snares to capture rabbits as part of their diverse subsistence strategy (Janetski 1979). Using the fur to construct other items is possible. An anthropomorph in rock art from Vermillion Canyon "wears a large, bulky 'rabbit ear' headdress" (Keyser 2017: 30). Although the fur from Cache 4 is loose, it could be used to support the creation of a larger piece of regalia. The fishhook from Cache 4 is smaller than those in Cache 2. Including the fishhook without other

material related to subsistence shows a departure from other caches at Mantle's Cave. The fishhook in isolation is not inherently ritual; however, its inclusion in this cache could be part of a larger direction toward hunting magic. Another single maize kernel was included in this cache, similar to Cache 1. Including this isolated form of subsistence, if not concretely ceremonial in nature, however, it does suggest a choice that was made beyond the premise of subsistence. The feathers are the most compelling elements in Cache 4 that suggest ritual behavior.

Cache 4 has strong ties to animals and subsistence. Only the fishhooks are tools; the other items are byproducts. When assessing this cache, the items appear disjointed or like pieces that may be used to fulfill specific functions once the need arises. Cache 4 may reflect a sample of items that could be pulled to some sort of hunting or subsistence magic.

Cache 5

Cached along the back wall of Mantle's Cave in unit R-02, two decorative items were found together. A rabbit fur tassel (UCM 06103) and a weasel band (UCM 06144) are the decorative adornment items of Cache 5 (Figure 60). The items were interpreted as a weasel pelt and rabbit fur made into tassels or a breech [cloth] (ARC.DNM01_001_019). Within the report by Burgh and Scoggin, there is a depiction of the rabbit fur tassel (Appendix E) of the item that reflects its condition in the 1940s (Burgh and Scoggin 1948: 43). When reviewing the archaeological material, the fur appears to have been eaten or degraded through time. Displaying the item during the mid to late 1900s could have also affected the shape of this item. The features of the weasel (UCM 06144) are still visible, including the cave and talons. Cache 5 contained more material that allowed an exploration of Fremont adornment practices.

Figure 60. Cache 5 contained two items, both likely served as decorative adornments that would be used in ritual settings. The items are not to scale. Copyright University of Colorado Museum of Natural History.

The items from Cache 5 reflect the ability of caves to open up new avenues to study the past. The presence of these decorative items has not been reported on previously in the Fremont literature (Goff 2010: 46). Dating connects this cache to the Fremont Period, and the cordage used in this cache "is of the same type, zS, the dominant type seen in the overall assemblage at Mantle's Cave" (Goff 2010: 46). The fur and tassel 'pendant' could be similar belt decorations seen in rock art at Steinaker Reservoir, Utah (Keyser 2016:38). The Pillings figurines, like many Fremont figurines, have detailed skirts and breechcloths (Janetski 2012, Yoder 2023). Adding additional tassels or decorations to these clothing items could have been possible. Sashes are also observed in Fremont rock art. Although the ermine pelt could not wrap around an entire body, it could have been used to adorn other parts of the body (Spangler 2002: 400). In the current catalog of the University of Colorado Museum of Natural History, the ermine pelt is listed "as a possible arm or leg band." Both pieces in Cache 5 display similarities to dancer regalia from the American Southwest (Webster 2007). On a 15th-century kiva mural from Pottery Mound, a male dancer appears to have decorative elements similar to those from Cache 5 combined (Plog 2003: 160). Leg bands and tassels hanging from a belt were captured in another kiva mural from the Hopi village of Kawaika-a (Plog 2003: 167). Connecting the items from Cache 5 to dancer

insignia requires the consideration of material outside of the Fremont record. The Fremont connection to the Puebloan world is documented, and even evidence of this connection is seen in some of the material culture from Mantle's Cave (Madsen and Simms 1998; Spangler 2002). Due to the closeness of these cultures, material from the groups can be compared. Even if the items from Cache 5 are not dancer regalia, they fulfill some social or societal code of adornment beyond functional clothing.

Cache 7

Although not included as an official cache in the Burgh and Scoggin (1948) report, a cache of seven nearly identical blades (UCM 06171) from the site warrants consideration as an official cache. The cache is comprised of seven nearly identical knives (Figure 61). A historic photograph shows the configuration of the cache prior to its extraction from the cave (Appendix E).

Figure 61. The seven knives (UCM 6171) of Cache 7. The knives are made of a similar material and are similarly shaped. Copyright University of Colorado Museum of Natural History.

Scoggin recounted their uncovering, stating, "Ed found a cache today of six beautiful chalcedony and clear agate blades. They are examples of excellent craftmanship"

(ARC.DNM01_001_002: 20). The top two blades were initially brushed from their position which is why Scoggin initially talks about six knives in his journal description. However, the others were found, and Lohr and Scoggin were confident in their association as they were confined to a "small pocked between small stones" (ARC.DNM01_001_017). Sommer (2013) was the first to label these items as Cache 7. Sommer notes that the width for knives are all 2.54cm and that the length ranges from 6.68 to 7.62cm (Sommer 2013: 222). Interpretations of the cache insinuate that "the quality of the blades and their concealment in the cave indicate that they were objects of great value" (Burgh and Scoggin 1948:45).

Examples of Fremont lithic caches solely comprised of chipped stone material with ritual connotations are limited. There are examples of caches in the area that the Fremont inhabited, but many date to the period before the Fremont (Loosle 2000). Caches comprised of tools are found in Fremont contexts; however, a connection to ceremonial activities is not always clear (Spangler 2002). In an inventory of lithic caches in Colorado, LaBelle (2015) includes Cache 1 and Cache 6 from Mantle's Cave on the list. Cache 1 has ritual connotations, and the lithics are a component of the grouping's ritual nature. It is reasonable to assume that the designation of Cache 7 as a lithic cache as a possible ceremonial offering is not beyond the behavioral spectrum of the Fremont.

The cache itself displays several characteristics of an offering or votive cache. The knives were cached along the cave's back wall and are the only known cultural material from that unit. The secluded nature of the cache could be explained by an intentional deposition that could have been meant to remain interred or be retrieved to complete rituals if needed. Made of nearly translucent material, the knives differ from other chipped stone items at the site. Another divergence from the stone tool traditions reflected in the rest of the collection is the base of the

knives, and they are a different shape from other lithics from Mantle's Cave. The knives are not sharp but do reflect some damage to their edges. An argument could be made that these knives served as blanks that just needed refinement; however, the pieces are so thin and follow such a distinct pattern it suggests their design was intentional and final. Although uniqueness should not be used to identify ritual items, it can be helpful in conjunction with other factors to explore items that are a departure from other cultural manifestations at a site. Burgh suggests that the number of knives "is suggestive of occult significance, but other examples from open sites in Castle Park certainly indicate domestic utility" though this connection is not made elsewhere in Fremont literature (Burgh and Scoggin 1948: 45). The similarities between the blades, their aesthetic value, and their close grouping suggest that the grouping of these items was intentional and served a purpose beyond function.

Spatial Distribution

The ritual material from Mantle's Cave was confined to a relatively restricted part of the site, spanning from line D to line U (Figure 62). The location of the items mainly fall to the right of the rock and masonry area and ends at the other cluster of rocks at the center back of the cave. Cache 1 was found the farthest away from the back wall in unit U-1, although this location is still in a protected portion of the cave. The location of the ritual items ranged in depth from 7 to 15 inches, although two items were missing records of depth. Compared to the location of the caches as a whole, the ritual items are congregated at the center and western portion of the base of the excavation units. In contrast, the caches extend across a wider portion of the cave (Appendix D). Interestingly, none of the sub-caves with limited light were selected to house the ritual items. Storing the material in containers or in protected areas of the cave seemed to satisfy the Fremont's need to preserve or separate material.

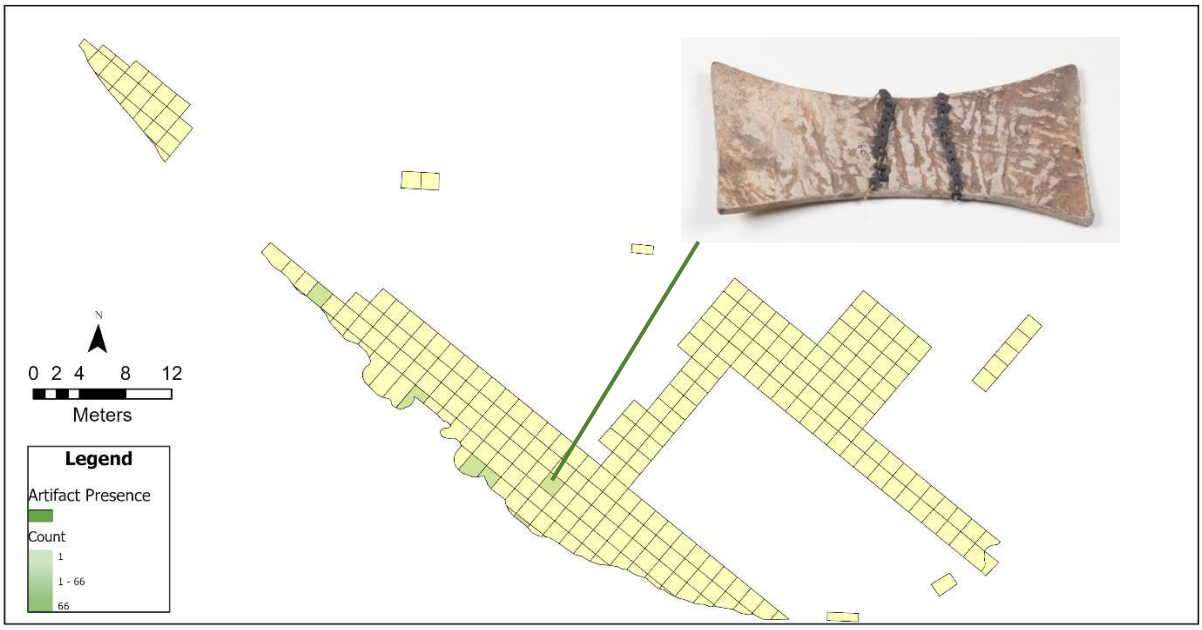

Figure 62. Locations of the ritual caches and the necklace. The ritual pendant (UCM 06109) from Cache 1, was recovered from unit U-1. The caches are clustered along the back wall of the cave. Image of UCM 06109 Copyright University of Colorado Museum of Natural History.

Reflection

There is a definable zone of ritual material at Mantle's Cave that is manifestation of storage behavior. The presence of the material at the back of the cave is possibly due to the protected nature of the space that made for an excellent place for retravel or permanent deposition. Not all of the ritual material was contained in bags, though there appears to be an effort to use the cave's features or natural barriers to separate the items from the cave floor. When the indicators of ritual behavior are considered, Mantle's Cave appears to have limited ritual connections. More information on the rock art could help explore the ceremonial connections to the site on a deeper level.

The grouping and deposition of the ritual material suggests that Mantle's Cave may have been used to store ritual material so the items could be accessed as needed to complete ceremonies in the area. Ritual elements at Mantle's Cave appear to be extensions of storage behavior and not markers of ceremonial activity occurring at the site. It is possible the ritual

caches left at Mantle's Cave were used to complete ceremonies there, though there is no clear evidence of that. Examining the possible ritual connections at Mantle's Cave highlights the gap in archaeologists' understanding of Fremont spiritual life. Caves, such as Mantle's Cave, offer an opportunity to engage with material that can be connected to ceremonial dimensions of life.

CHAPTER 8: TEMPORAL ANALYSIS

Overview

Understanding the history of Mantle's Cave from a temporal perspective was my fourth research question. A variety of data sources were used to explore this question, as there was a limited number of absolute dates from the site to reference. Assessing the temporal associations of diagnostic artifacts from the site was another line of evidence considered. Results from my archival research are used in this section to support discussions of artifact provenience and possible cultural layers. Exploring how time plays a role in the use of Mantle's Cave is vital to my assessment of the site's history as a whole.

Radiocarbon Dates from Mantle's Cave

Early interpretations of the site placed the occupation "from about A.D. 400 to 800" (Burgh and Scoggin 1948: 89). Several researchers who have previously worked with the Mantle's Cave collection were able to date several pieces from the collection through radiocarbon dating (Table 5). Information on these dates is limited to details presented in publications and what was shared in personal correspondence with me. The calibrated dates are as presented in the original researchers' work. A discussion of the artifacts and the dates they yielded is included below.

Cache 3 contains two items; both have been radiocarbon dated by Goff (2010). The Deerskin Head Pelt (UCM 06102) generated two intriguing dates, 1770 cal B.C. to 1510 and 1620 cal B.C. to 1410 (Goff 2011). These dates would place the item's origin in the Middle Archaic period, approximately 2,000 years before the Fremont period. The date is surprising and could be the result of a dating error.

Table 5. Radiocarbon dates and their sources from Mantle's Cave.

Article	Item Dated	Laboratory Number	Item Dated	Cache	Date Generated	Calibrated Date
Adovasio 1970	Possibly 05957	RL-11	Basketry Piece		1260 ±150 B.P.	A.D. 690 ± 150
Truesdale 1993	UCM 06178	AA7823	Flicker-Feather Headwear (from ermine fur)	1	882 ± 60 B.P.	A.D. 1001 to 1275
Truesdale 1993	UCM 06178	AA7824	Flicker-Feather Headwear (leather)	1	1000 ± 52 B.P.	A.D. 900 to 1160
Goff 2010	UCM 06102	UGAMS 00931-A	Deerskin Headwear (from front)	3	3362 ± 54 B.P.	1770 B.C. to 1510
Goff 2010	UCM 06102	UGAMS 01898	Deerskin Headwear (from back)	3	3220 ± 50 B.P.	1620 B.C. to 1410
Goff 2010	UCM 05962	UGAMS 00931-B	Game snare	2	1085 ± 48 B.P.	A.D. 810 to 1030
Goff 2010	UCM 06193a	UGAMS 01897	Moccasin	3	1330 ± 50 B.P.	A.D. 600 to 780
Goff 2010	UCM 06103	UGAMS 02155	Rabbit Fur Tassel	5	1320 ± 45 B.P.	A.D. 630 to 810
Goff 2010	UCM 06108	UGAMS 02156	Patchwork bag	1A	1090 ± 45 B.P.	A.D. 860 to 1030
Sommer 2013	UCM 06175	UGAMS 6587	Feathers	4	840 ± 25 B.P.	A.D. 1085 to 1135
Jolie 2018	UCM 05943	AA85135	Coiled Basketry Ladle		1805 ± 35 B.P.	A.D. 126 to 332

Another item that generated a date earlier than expected was the Basketry Ladle (UCM 05943) (Jolie 2018). The ladle is a woven object with a rigid structure (Figure 63). The ladle had a calibrated date of cal A.D. 126 to 332 with a calibrated median age of A.D. 207 (Jolie 2018: 248). This early date could reflect the Fremont influence by Basketmaker populations (Goff 2020: 37). There is a woven ladle from Aztec West that Jolie (2018) detailed that has some

similarities to the piece from Mantle's Cave, possibly speaking to larger regional connections. No information is known about the ladle's location in the cave as it was collected during the Jones and Lee Expedition. The ladle could be an early manifestation of Fremont activity at Mantle's Cave influenced by Basketmaker interactions.

Figure 63. The uniquely shaped basketry piece, UCM 05943. Ladles are not a common form in the Fremont culture. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History

The shoes (UCM 06193) from Cache 3 generated a date of cal A.D. 600 to 780 which fits within the middle of the Fremont period (Goff 2010). The construction of these shoes also fits within the Fremont moccasin tradition (Goff 2010: 46). The other item from this cache was the Deerskin Head Pelt (UCM 06102) which was dated to the Middle Archaic. Finding two objects that were directly placed together with such a wide creation date is intriguing. Another explanation for the intermingling of these items could be that the Fremont people of Mantle's Cave decided to incorporate an item they would recognize as being older and possibly significant

into their traditions. The mixing could have occurred at the site if the pelt was left at Mantle's Cave from a previous group and then the later Fremont people decided to use it. The dating of Cache 3 provides an intriguing view into the possibly very deep and interconnected history of Mantle's Cave.

Dr. Adovasio (1970) tested a piece of basketry as part of his dissertation that yielded a date of cal A.D. 690 ± 150. Spangler (2002) reports have associated the basketry date with a calibrated median age of A.D. 776. It is unclear which artifact was dated after consulting with Dr. Adovasio and the University of Colorado Museum of Natural History. This date may be from the Globular Basket (UCM 05957), which is part of Cache 2.

There are several other dates that fall within the middle to late periods of the Fremont like the shoes (UCM 06193) and the unknown basketry fragment. The fur and tassel (UCM 6103) returned a calibrated date of A.D. 630 to 810 (Goff 2010). The bag from Cache 1A, UCM 6108, was dated to cal A.D. 860 to 1030, which fits within the Fremont period (Goff 2010). One of the snares (UCM 5962) from Cache 2 was dated to cal A.D. 810 to 1030, similar to the previously mentioned bag (Goff 2010). The snare's date falls within a broad swath of the Fremont period. Sommer (2013) dated one of the feather bundles (UCM 06175) from Cache 4 and it returned a date of cal A.D. 1085 to 1135. Truesdale (1993) tested two sections of the Flicker Feather Regalia (UCM 6178) to get a sample of two types of organic material from the item. The ermine fur generated a date of cal A.D. 1001 to 1275, while the date from the leather had an associated date of cal A.D. 900 to 1160 (Truesdale 1993). These dates fit within the later sequences of the Fremont and overlap with the snare. With the available dates, Mantle's Cave appears to have a clear connection to the middle and late periods of the Fremont.

The Fremont connection to Mantle's Cave is seen in the radiocarbon dates from the site. The dated material was recovered from the back of the cave (Figure 64). The dates from Cache 3 suggest that a Middle Archaic lineage at the site is possible, but further testing is needed to determine how much of the collection dates to this period. The Fremont chronology at Mantle's Cave appears to be concentrated in the A.D. 600 to 1150 period. Primarily, the site reflects several iterations of Fremont visitation and use of Mantle's Cave.

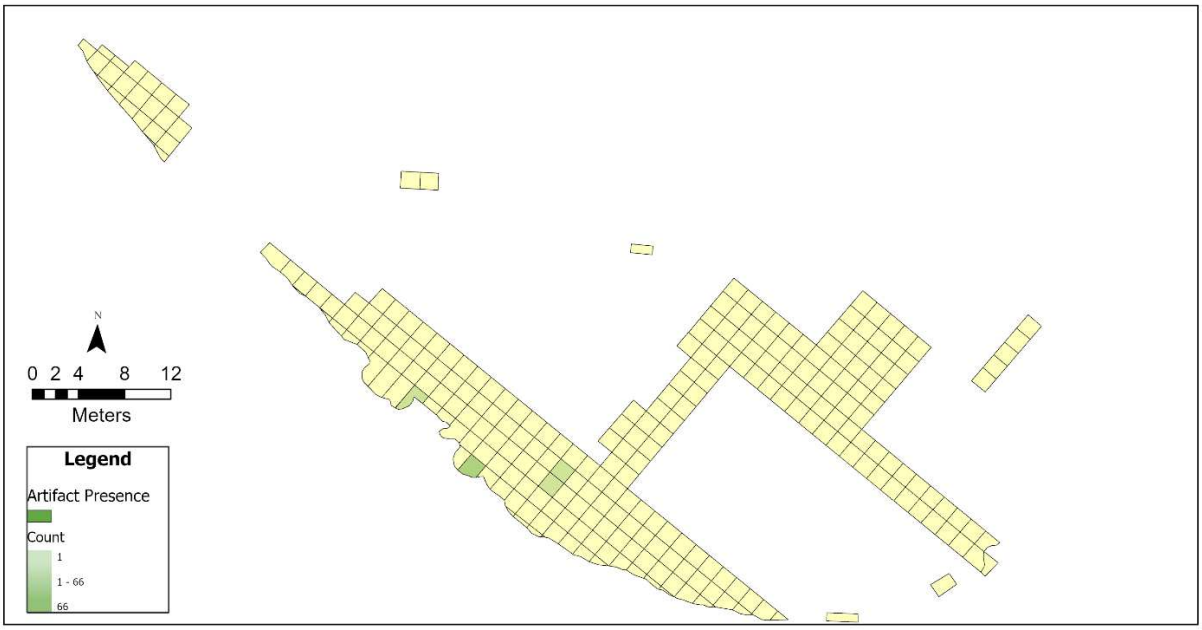

Figure 64. This map provides the location of the items that were radiocarbon dated when provenience information was available. The dated material only reflects a small portion of the cave and represents a limited number of items.

Diagnostic Analysis

Projectile Points

Assessing the typologies associated with the projectile points from Mantle's Cave can provide a general temporal range for the site. There are five projectile points from the site. The points were compared to available projectile point typologies to find analogous projectile technologies.

Three projectile points are comparable to points in the Elko Series. Points in this series "first appear around 6000 BC and are poor temporal diagnostics due to their presence in both Archaic and Formative Period contexts" (Woods 2009: 34). Elko Corner Notched points have slightly curved to straight bases and triangular corner notches. A jasper projectile point (UCM 05183) shares similar traits to Elko Corner Notched points (Wood 2009: 49). UCM 05549 is a yellow jasper point comparable to Elko Corner Notched points (Wood 2009: 49). A broken chert point (UCM 06743) is also comparable to points from the Elko series (Wood 2009: 49). Elko series points have been found at several Fremont sites, suggesting an incorporation of this technology into Fremont traditions (Wood 2009).

Two points were difficult to find comparable typologies for. UCM 06231q is an expanding stemmed point. The provenience on this point is unclear as the catalog number assigned to the item may have changed through time, though the records from Scoggin and Lohr do include a description of a dark chert stemmed point, which matches the item's description (ARC.DNM01_001_017). UCM 05194 is the other point that is challenging to identify. There is some breakage of the base, though notching is still visible. UCM 05194 may fall under the Elko Series, but it is unclear. Future identification of these points could support discussions about the site's history.

There is limited spatial data available on the projectile points. None of the points were recovered from caches. The point (UCM 06231q) with problematic numbering was recovered from unit A-1 (ARC.DNM01_001_006). UCM 05194 was found in one of the early test trenches dug along the back of the site by Scoggin and Lohr to identify cultural material (ARC.DNM01_001_017). UCM 05549 was found in a trash pile from past hobbyist work at the site (ARC.DNM01_001_017). The lack of information makes it hard to use these projectiles to

talk about the age of specific areas of the cave, though it does contribute to the overall discussion of the site.

The identifiable projectile points from Mantle's Cave could be used to support a Late Archaic or Fremont use of the site. The limited provenience data on the points makes relating the items to other cultural material challenging. While the connection to the Elko Series suggests a Late Archaic connection at the site, Fremont people were known to incorporate these tools into their toolkits (Woods 2009). Among the Fremont, there are a variety of point styles, usually small corner-notched points and side-notched arrow points that "appear between A.D. 900-1000 throughout the Fremont region" (Bischoff and Allison 2020: 2). As seen in other elements of Fremont life, incorporating other styles, or using diverse toolkits is commonplace. The projectiles from Mantle's Cave could suggest a connection to Late Archaic use of the site but the presence of these points alone does not definitively support prior use.

Ceramics

Mantle's Cave yielded 35 pieces of plain, grayware ceramics. Overall, the ceramics from the site appear to have a similar coarse limestone temper (Figure 65). Some of the sherds show evidence of burning that could be related to cooking activities. Evidence of ceramics in Dinosaur National Monument is not widespread; their presence at Mantle's Cave provides an opportunity to survey the ceramic associations of the people of the Castle Park area (Burgh and Scoggin 1948: 66).

Figure 65. Six sherds (UCM5748a) shown here reflect one pile of broken pottery recovered from the site. Copyright University of Colorado Museum of Natural History.

There has been considerable effort in the Great Basin and Colorado Plateau to examine the ceramics and develop a thorough typology. Based on my assessment of the pottery, the sherds appear to be characteristic of the Uinta Gray Pottery Type. This pottery type is marked by its angular temper and smoothed surface (Watkins 2009: 148). Temper specifically can help determine the differences in graywares common in the region (Watkins 2009). Morss first noted the prevalence of grayware with an igneous rock temper in the Colorado Plateau (Morss 1931, Watkins 2009: 146). In Dinosaur National Monument specifically, a tempering agent of fossiliferous limestone was frequently used (Spangler 2002: 386). Uinta Gray is associated with the Fremont and is thought to have appeared around A.D. 550 (Spangler 2002: 384). The presence of Uinta Gray at Mantle's Cave supports the Fremont connection at the site.

The pottery sherds at Mantle's Cave are primarily concentrated in one area (Figure 66). A singular rim sherd lies in the bottom section of the excavation grid. The ceramics were found at depths ranging from 0.5 – 6 inches, with most of the sherds falling in the 2 – 3-inch range. A

large percentage of the pottery does not have location data. The presence of Uinta Gray pottery in the upper section of the excavation grid of Mantle's Cave supports a Fremont association with this area and the site's top layers.

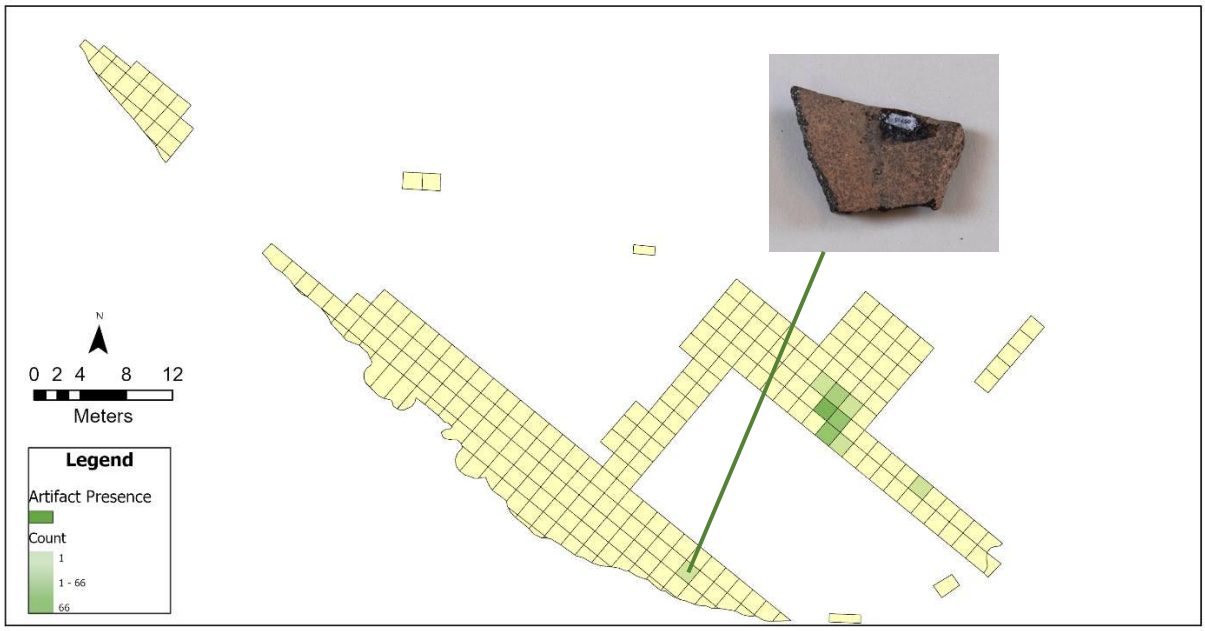

Figure 66. Ceramics from Mantle's Cave are primarily concentrated in the upper portion of the excavation grid. This area is near some of the cists used for storage. The isolated sherd, UCM 05745, was recovered from unit 1D-2. Image of UCM 05745 Copyright University of Colorado Museum of Natural History.

Temporal Information from the Archives

Scoggin and Lohr captured information about their 1939-1940 excavation of the site in detailed soil profiles, bag tags, journal entries, and field notes. The details captured in the archives helped me to reconstruct additional relationships between features and items from the site. Regarding my temporal analysis, this information will be used to provide information on the possible cultural layers present at the site.

Information from Soil Profiles

Lohr and Scoggin completed 30 soil profiles that showcased several features, artifacts, and cave areas. The profiles cover the base section of the excavation grid, spanning from the back wall to line three. The units represented range from A to Z and 02 to 3. Not every unit

across the base has a profile, and even within the documented units, not every depiction spans from the wall to line 3. The profiles are drawn with reference to the numbers and letters on the grid system across the cave. These drawings provide a perspective on the units that go beyond the information contained in the bag tags.

The profiles provide details on the sediment changes, features, presence of rocks, and cultural material at the site. Charcoal or ash can be seen in several profiles (ARC.DNM01_001_017). A charcoal layer is visible in a soil profile of unit A-1 from January 1940 with cultural material above and below the charcoal stream (Appendix F). The presence of material above and below the layer suggests multiple visits to the site over time, as sediment had a chance to accumulate to form the levels. Cultural material was also documented above and below the ceiling rock fall in units G-2 and G-3, echoing the return and ruse of the site through time (Appendix F). The profiles also provided other relational details about objects and features not captured in bag tags of field notes. The 'couch' section can be seen on the profile for Line Z from March 16, 1940 (Appendix F). A burned rock feature was also captured in a soil profile of Line Z in units Y-3 and Z-3 on March 1, 1940 (Appendix F). Information from the profiles help illuminate temporal events as well as relationships between the cultural material.

Scoggin and Lohr's depictions of the site support the idea that there are parts of the cave where a stratigraphic separation of the cultural material is present. Rockfall and charcoal have both been found between cultural deposits. Dating material from areas above and below the rockfall would provide clarity on how separated these events truly were in time. Disturbances to the cave due to rats or previous work at the site were also captured in the drawings. Without more profiles, it is hard to get an accurate image of the site's stratigraphy as a whole. Even with the limited view and effects of disturbance, zones where cultural material was found emerges.

Information from Bag Tags

Lohr and Scoggin carefully recorded information about the artifacts they excavated. Many of the original bag tags from the artifacts were preserved and contain information about the depth at which the artifacts were collected. Using recordings of depth, I could see how artifact location may relate to cultural layers at the site. Though depth is only available for a fraction of the catalog numbers, it was pertinent to try and use every line of evidence available from the original records.

The 1948 report by Burgh and Scoggin contains some descriptions of artifact stratification and conditions at Mantle's Cave. Some of the deepest sections dug in the cave were units 3A-1, 3B-1, and 3C-1, but they did not yield any cultural material beyond charcoal (Burgh and Scoggin 1948: 24). The report stated that most cultural material was coming from depths of 6 – 15 inches below the surface (Burgh and Scoggin 1948: 25). There were limited artifacts "found beneath layers of silt; but these, even at a depth of thirty inches, cannot be proved older than others of the same type found shallowly buried in areas where no deposition of silt took place" (Burgh and Scoggin 1948: 25). Information from the report points to valid concerns about mixing, silt accumulation, and the overall formation of the cave and their impact on the stratification of deposits.

Information from the original bag tags yielded a more specific view of the location of the cultural material at the site. The measurements are in inches, as they were first recorded. I observed that cultural material was found at a range of 0.5 – 75 inches below the surface at Mantle's Cave (Figure 67). The units that yielded the deepest cultural material were D-1 and J-2. Much of the material is seen within the first 15 inches of the site. The 3.1 – 7-inch level was the most concentrated depth, with 201 catalog numbers connected to it. The material was fairly

dispersed around the cave at this depth, as seen within ArcGIS Pro's chart level selection. The second most concentrated level was the 7.1 – 11-inch range with 118 catalog references, and the items were also dispersed across the excavation grid. There is a gap in material between 30 to 63 inches. The material found 63 inches and below is not diagnostic and would require dating to establish an age for the level.

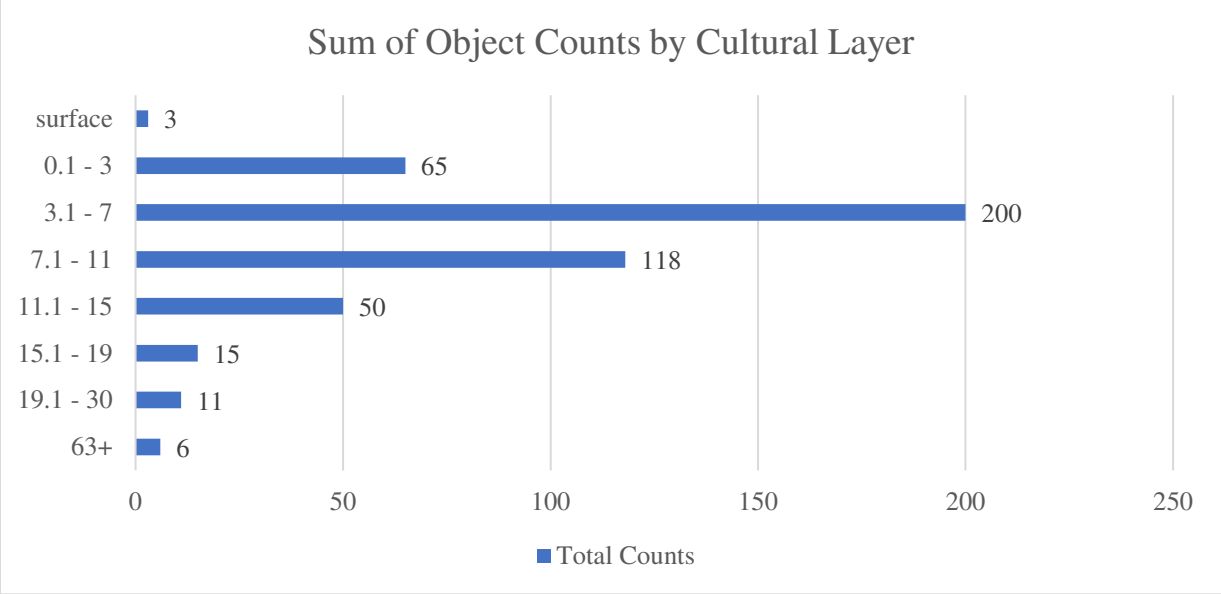

Figure 67. The chart reflects the concentration of artifacts at certain depth ranges. This chart represents the artifact counts by cultural layer portion of my map in ArcGISPro. The y-axis measurements are in inches.

A few bag tags mention 'Stratum A' and 'Stratum B' as levels within the site (ARC.DNM01_001_006). These terms are not used extensively or clearly defined, but they are associated with "occupational" evidence of the site (ARC.DNM01_001_007). 'Stratum B' is referred to as the main stratum and is labeled as containing charcoal and ash (ARC.DNM01_001_006). The separation of material between 30 and 63 inches does not appear to match the depths associated with the items described as being in stratum A and B (ARC.DNM01_001_017). Stratums A and B appear to be concentrated within the first 30 inches of the site. Although there is no direct labeling of another stratum that dips to 63 inches, the notes reflect that the material did come from there and that the material may reflect a different

occupation of the cave. Records from the 1939-1940 excavation of the cave provide a window into how the material from the site was dispersed within the cave levels.

Dendrochronology

Using samples collected in 1940 and 1948, CUMNH sent two samples out for dendrochronological testing. The samples were sent to Gila Pueblo Tree Ring Lab, a research foundation in operation from 1928-1950 (Gila Pueblo Archaeological Foundation 1928-1950). A log section (UCM 05978) was recovered from one of the trash piles from past diggers at the site by Scoggin and Lohr (ARC.DNM01_001_017). Later records indicate that a "portion of A235a [was] sent to Gila Pueblo Tree Ring Lab" on August 19, 1947 (ARC.DNM01_001_019). The other item sent for testing was a section of charcoal (UCM Tin-0544) from unit E-1 that Burgh collected during his work at the site in 1947 (ARC.DNM01_001_007). There is some confusion as to which artifact number the charcoal was affiliated with. However, the records from the 1940s indicate a specimen (47D6) was sent to Gila Pueblo for testing on October 29, 1947 (ARC.DNM01_004). Correspondence to Jesse Nusbaum of the National Park Service on February 13, 1947, from the museum included two tree ring dates, though this letter is dated before the two samples from the collection were reportedly sent, so it is unclear what specimens are being referenced (ARC.DNM03). The letter states that "Deric has confirmed his original tree ring dates of 343 and 367 A.D. for wood from Mantle's Cave" (ARC.DNM03). Even though the origin of the dates is unclear, it is useful to consider this other line of evidence.

Combining Temporal Information

Using the available radiocarbon dates and the information from bag tags, I was able to explore the possible layers' temporal associations. In unit Q-03, both items from Cache 3 are dated (Goff 2011). The Deerskin Head Pelt (UCM 06102) was found in the cache below the

shoes (06193a and 06193b). Dating does not easily explain the temporal and stratigraphic associations with this cache because of the unexpected date of the Deerskin Head Pelt from the Middle Archaic (Goff 2011: 45). With this mixed context, depth cannot simply be used to suggest that some mixing of the layers occurred because the items were cached together at some point, integrating their periods of use. The other three items (UCM 06108, 06175, and 06178) were found between 11 – 17 inches below the surface. The items returned dates around the A.D. 850 – 1200 range, which can be associated with the Fremont. The similar dates and depth suggest that the Fremont layers of the site can be attributed to this depth at a minimum. There are no radiocarbon dates from below the 30" depth, which could be used to explore the gap in the cultural material from the site. Exploring object depth in relation to available radiocarbon dates can help explore how the site was used through time.

The basketry ladle (UCM 05943) is the object that has the closest date to the dendrochronology results. Tree ring data places the samples around A.D. 343 and 367, while the ladle returned a date of A.D. 126-332. The lack of provenience for the basketry ladle and the confusing records about the items sent for tree ring testing makes it hard to compare the subjects. The evidence suggests that an earlier Fremont component is represented at the site, though the extent of this activity is unclear.

Reflection

The chronology of Mantle's Cave reflects dates that span from the Middle Archaic to the Fremont period. Dates associated with the Fremont can possibly interpreted as multiple visits to the site through time by Fremont people. The intensity of use may not always be consistent, so determining the number of Fremont occupations is challenging. How past peoples used the cave could have also contributed to the difficulty of isolating specific periods of use. Connecting

Mantle's Cave to Ute and Shoshone populations on dates alone is challenging as these are thought to post-date the Fremont (Spangler 2002). Cultural material separation, as seen in the records of Lohr and Scoggin from the 1939-1940 excavation of the site, suggests that there are some stratified layers at the site. The site also showed evidence of use before and after the large rock fall from the center of the cave's ceiling. A more nuanced view of the site's temporal story could be achieved with more dating that targeted different activity areas as well as artifacts from different depths.

CHAPTER 9: CONCLUSION

The primary goal of this project was to establish a foundation for the interpretation of Mantle's Cave. Evaluating how past people used Mantle's Cave was made possible by the detailed work of Charles Scoggin and Edison Lohr. An image of how the site was used emerged through an analysis of habitation, storage, and ritual behavior. Examining the temporal extent of the site was another component of the research project. Reflecting on the outcome of this project enabled me to see where research questions could be advanced further with additional work. A reflection on the behavioral elements of Mantle's Cave reveals a multi-faceted site that could serve a community in several ways.

Habitation Reflections

When comparing the evidence for habitation and the material from Mantle's Cave, the site does not appear to have been a site of dense occupation. The site lacked evidence of architectural features even though some larger log sections were recovered. In the review of the collection, there were areas of charcoal and burned material that suggest the presence of hearths. Mantle's Cave contained several broken items; however, no singular midden area emerged in the analysis of the site. Even the coprolites were found at different points at the site. Plant and animal processing equipment were found in several units at the site, and evidence of some processing occurred on-site. The use of mats to prepare areas for sleeping did not seem to be occurring at Mantle's Cave. There were areas where mats were laid on top of sand, though they did not appear to be suitable for adults. Several gaming items were strewn across the site, which could indicate that some time was spent at Mantle's Cave participating in games. Evidence connected to habitation makes up a considerable portion of the collection.

Spatially, artifacts linked to habitation can be seen across the cave (Figure 38). From unit A-1 to the I line, there is a concentration of material. Flakes, burned maize, burned bone, and burned sticks are found in this section, suggesting a hearth in this area. The flakes could have been left as people were knapping near the hearth, a phenomenon that is well documented in the archaeological record (Zink 2017: 15). Burned material in the units could reflect discarded items thrown into the fire or pieces used to start the fires. The hearth-centered activity zone from unit A-1 to the I line is one compelling area of habitation activity. The site does not appear to be a place of intensive habitation. A diversity of activity represented at the site that was not previously explored suggests people occupied the site for short periods while they worked on localized tasks.

Storage Reflections

Storage has been heralded as the primary function of Mantle's Cave for decades. Evidence of this behavior can be seen in the natural spaces curated for storage as well as the structures built to house material. Three storage caches were found outside of these features but suggested that protective cases were also a storage strategy used by the people of the site. Foodstuffs and gear were the primary materials being stored. Although, it is important to note that ritual life was manifested in Mantle's Cave as the storage of ritual items. Cultural Material related to storage made up the second largest portion of the collection.

The material related to storage was primarily found in storage features or toward the back of the cave (Figure 52). When cists were filled with material, they were often found adjacent to other storage features that were also filled, which strengthens the supposition that storage was intentional. After reviewing the collection, storage appears to be a large component of the site. Between the potential storage spaces present and the use of these features, this was undoubtedly

a reason for people to seek out this site. Storage was used to support these activities in relation to ritual and habitation material. Storage appears to be a dynamic component of cave life at Mantle's Cave.

Ritual Reflections

The ritual components at Mantle's Cave do not appear to be a large part of the site's function. Rock art has been documented at the site; however, the description of the panel does not support a ritual interpretation. Mantle's Cave does have areas with less light, though the spaces are physically restricted, and the cultural material does not suggest that any ceremonial activities were occurring there. No burials have been recovered from the site. Ritual deposits comprise the bulk of the evidence for a ceremonial connection to the site. The ritual caches and necklace were found at the back of the cave, primarily along the wall (Figure 57). Distribution of the ritual material seems confined to a smaller space than to the site's caches as a whole. The ritual elements are tied to storage behavior, as the items were placed in protected spaces where they could be retrieved or left in peace. Mantle's Cave held a variety of items linked to Fremont ceremonial life that could have been collected as needed. The objects were likely cached together and left at the site so they could be collected as ceremonial needs arose. Fremont ritual material was present at the site; however, the items alone do not suggest that rituals occurred at Mantle's Cave.

Temporal Reflections

Mantle's Cave's primary cultural component has been attributed to the Fremont since the 1940s. The site's affiliation with the Fremont is supported from the diagnostic material to radiocarbon dates. Within the date range produced by radiocarbon and dendrochronology dates, there appears to be some fluctuations of when material was produced. The range in dates could

suggest that different generations visited Mantle's Cave throughout the Fremont period. Sites with evidence of reoccupation are not an uncommon phenomenon in the Castle Park area; Hells Midden is an example of this (Little 2024). Using Mantle's Cave as a base of activity, Fremont communities would have frequented the site to use the space as needed over a long period.

Occupation of the site may extend beyond the Fremont, as evidenced by the additional artifact lens and deerskin head pelt (UCM 06102). The material in the bottom layer does not have any diagnostic material and requires radiocarbon dating to solidify that this material reflects a proper gap in who used the site. The deerskin head pelt (UCM 06102) was dated to the Middle Archaic and was found with an item dated the Fremont period. Though this piece suggests an earlier component of the site, it may be tied to the cache it was recovered, which may have been formed off-site prior to the group's presence at Mantle's Cave. Castle Park contains evidence of use before and after the Fremont, so it is not impossible that Mantle's Cave was one of these spaces; the evidence is just not as evident as it is at other sites.

Redefining Mantle's Cave

The completion of this research allows me to speak to new dimensions of activity at Mantle's Cave. Storage is still a prominent function at the site, though it is not some blanket use. Items were deposited at the site to fit the daily or monthly life needs in the canyon. Past peoples used this place and its available space to suit their needs. Evidence of processing, production, and hearths suggests an occupational component was present at the site. Temporal evidence suggests that the Fremont returned to this place as part of their generational story. Establishing the context for the material from Mantle's Cave created a foundation that a variety of research questions can build off of. With the records from the past, future work with this collection could address various questions about the site.

Research Implications for Broader Area

Castle Park

As part of the Castle Park Archaeological District, Mantle's Cave is in proximity to a variety of sites. In line with Goff's interpretation of the site, it is likely that "Mantle's Cave was a significant point on the landscape used by different groups" as they lived and passed through the area (Goff 2010: 49). Material was stored at the site so it could be accessed on a long- or short-term basis. Evidence of tool production, gaming, animal and plant processing, and hearths suggest the site had supported limited occupation. For one generation or group, Mantle's Cave was not just a place where items were deposited and then left; the site functioned as an extended living space where people spent time. The site does not appear to be occupied in the same manner as Marigold Cave, where dedicated structures were built (Burgh and Scoggin 1948: 37). Mantle's Cave differs from Hells Midden as it was not a place where refuse accumulated for generations. Other sites in the district had storage features, although Mantle's Cave contained the most (Burgh and Scoggin 1948). Mantle's Cave contained a diverse assemblage and continues to be an intriguing piece of the Castle Park story.

The Fremont

As discussed in Chapter 2, the Fremont are a diverse group that are challenging to define. Elements of the Fremont tradition are integrated into the site and archaeological material. Mantle's Cave highlights the diversity of material that the Colorado Fremont had, a factor that is not often discussed. The carefully crafted items and clear storage initiative showcase the richness of life the semi-mobile people had. Fremont cultivation and hunting technology are both present at the site, supporting the notion that the Fremont engaged in several lifeways (Madsen and Simms 1989; Spangler 2002). The Eastern Fremont may not have organized themselves into

villages, but their life was not simple or solely driven by movement; they were tied to places and continued to integrate Mantle's Cave into their culture. The diverse material from the site also has the potential to answer questions about the Fremont's relationships with other groups through further analysis of the material. The Fremont were flexible people, and Mantle's Cave could have been adapted to fit the needs of communities as they used the site.

Other Institutions

As part of this project, I contacted other institutions to see if they had any material from Mantle's Cave (Table 6). Material was collected from the cave during the years of early hobbyist work at the site; where those items were taken is unclear. The Museum of Northwest Colorado was not able to respond by the time of publication, however Dr. Jason LaBelle reported seeing material from Mantle's Cave at the institution. The collection housed at the University of Colorado Museum of Natural History reflects the bulk of material collected from the site.

Table 6. This table lists the institutions contacted to try and identify if any other components of the Mantle's Cave are housed beyond the University of Colorado Museum of Natural History.

Institution Contacted	Date contacted	Response
Denver Museum of Nature and Science	08/14/2023	No Related Material
Dinosaur National Monument	09/18/2023	No Related Material
History Colorado	08/14/2023	No Related Material
Museum of Northwest Colorado	09/06/2023	No Response: Dr. Jason LaBelle reports seeing material identified as from Mantle's Cave in his past research at the Museum
Museum of the West	08/14/2023	No Related Material
Uinta County Heritage Museum	08/14/2023	No Related Material
Utah Field House of Natural History State Park Museum	08/14/2023	No Response

Opportunities for Future Research

Potential Deposits Still Present at Mantle's Cave

Documents from the work at Mantle's Cave support that areas of the site do not appear to have been excavated. Scoggin and Lohr also left some of the material they encountered, such as the 'couch' section, in place (ARC.DNM01_001_017). Notes from the 1939-1940 excavation acknowledge that material was present under the ceiling rock fall that could not be accessed (ARC.DNM01_001_017). Material may also be along the eastern portion of the cave wall, as it was at the back and western portion of the site. The eastern side may have had less evidence of cultural components on the surface than other areas; however, that does not mean it was a sterile area. A gap between the western cists and the base of the excavation grid that begins with unit A-1 could be another area to explore. The western end of the cists and A-1 were filled with material, so there could be more underneath the surface and modern vegetation (Horn and Reed 1989). Material was found by Burgh and company in 1947 in units that had been previously excavated, which further strengthens the idea that the site is not fully excavated. Mantle's Cave likely holds more material in hard-to-reach places and unexcavated areas.

Unidentified Artifacts

Within the discussion of the storage, ritual, and habitation material present at Mantle's Cave, there was not room to discuss all of the items. Specifically, there was one artifact type I could not connect to any of the behaviors discussed here. Scoggin and Lohr initially referred to these items as "gaming pieces," although there is no direct corollary in the archaeological record (ARC.DNM01_001_019). Four slate pieces (UCM 05057) are representative of the modified slate pieces from the site (Figure 68). Each slate piece has small lines etched on both sides of the

items. With these items being recovered by Jones and Lee, there are no details about the relationship to the cave.

Figure 68. Four modified pieces of slate (UCM 05057). Small lines are etched on the surface of the pieces. Copyright University of Colorado Museum of Natural History.

The slate pieces from Mantle's Cave are different from other slate pieces in Fremont contexts and appear different from other pieces in surrounding cultures. Some Fremont figurines are made of slate, though it is hard to tell if that was the intended purpose for the pieces at Mantle's Cave (Janetski 2012). Steward (1937) discusses some slate pieces from Promontory era sites in the Great Salt Lake area with intricate details. These carved items appear to be shaped and etched more intentionally than those at Mantle's Cave (Steward 1937: 77). Two slate bifaces were recovered from Taylor Cave in Mesa County (LaBelle 2023). These bifaces were etched in a similar way to those from Mantle's Cave. However, they appear to be much thicker and have prominent flake scars. The slate pieces from Mantle's Cave could be gaming pieces, as thought by Scoggin and Lohr, though they lack the consistency and patterned marking that are seen on

gaming pieces made from other mediums (Janetski 2017). Without more patterned shaping of the stone or information about the origin of these pieces, it is hard to determine their role in life at Mantle's Cave.

Radiocarbon Dating

The University of Colorado Museum of Natural History was not approving destructive sampling techniques, including radiocarbon dating, at the time of my project as part of their collections management strategy. In the future, if the policy changes, it would be valuable to collect more radiocarbon dates from the site. This project established a base of knowledge that could support various future projects. Targeting items of different artifact classes or those found in different locations in the cave would greatly benefit the interpretation of Mantle's Cave. Three specific radiocarbon dating projects would help explore perspectives on how the cave was used and when.

A thorough dating of all nine caches from the site would enable the material in them to be more easily compared. Six of the nine caches have been dated; of those, only one cache has more than one item dated. As seen with Cache 3, dating more than one item from the cache can illuminate unexpected temporal gaps. Cache 7 would not be able to be dated, as the cache is comprised only of lithics, and there are no other organic materials from that unit. Dating the caches would help address questions about how storage functioned at the site through time and possibly what connection the ritual items have to each other temporally.

Selecting artifacts from different depths and testing them could be another project. Within this strategy, it would be crucial to test material from the two levels at the site and see if there is a difference in the dates. Testing material found above and below the rock fall could help answer questions about how the site was used after the ceiling fell (likely multiple times).

Sampling material from different depths within a singular unit, such as A-1 or D-1 with abundant material, would suggest how items accumulated within a unit. There are several ways to use the depth data collected for this project to answer questions about Mantle's Cave.

Targeting items from storage features and using them to answer questions about feature fill is another possible avenue. Looking at the crops specifically, testing could be done to see if they were stored at roughly the same time or over long stretches. A comparison could also be made between the storing of squash versus maize. Targeting cultigens could answer questions about horticultural practices in the Castle Park area among the Fremont. There are several ways to carefully and thoughtfully sample material from this site to get at larger questions surrounding who used the site and how.

Coprolite Testing

As discussed in Chapter 5, there are possible human coprolites from Mantle's Cave. Dr. Tim Riley suggested that based on photos, the samples could be from human origins (Dr. Tim Riley, personal correspondence, September 9, 2022). A rehydration test could be performed to determine if the specimens were from humans (Reinhard and Bryant 1992: 260). If these samples are human, further tests could be done to assess diet or other aspects of past people's lives. Coprolites are not classified as human remains under the Native American Graves Protection and Repatriation Act (NAGPRA) and therefore can be tested, though undergoing additional tribal consultation to discuss possible coprolite testing would be advisable. Confirming that these samples are human would bolster the argument that Mantle's Cave had a more complicated use history that involved some periods of occupation.

More Spatial Analysis

With the database created for this project, there is the potential to use this information to address more questions about the site. More complicated spatial and density analyses could be conducted. Analyzing artifact depth in more detail is another approach that could be taken. I hope the information gathered and organized for this project can be used to support future endeavors.

Concluding Remarks

Mantle's Cave served as a base for a broader spectrum of activity than initially thought. Through a systematic review of the archives, archaeological collections, and relevant literature, a clearer picture of Mantle's Cave emerged. Observations made by early archaeologists at the site support one view of the site. While their interpretation were not incorrect, the perception of the site should be expanded to include the results of this project. Examining the site through the available spatial data reflected zones of use. The results of this project indicate that Mantle's Cave was a base for limited habitation and storage activities.

Future work at the site and in the area will hopefully continue to illuminate more details about the lives of past peoples. In the spirit of Scoggin and Lohr's work at Mantle's Cave, this project hopes to follow Scoggin's goal of generating "some worthy knowledge for our contemporaries and future students" (ARC.DNM01_001_001: 49).

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1939-1940 Mantle's Cave sections I, J, K, L and M. University of Colorado Museum of Natural History, Anthropology Section. Boulder, Colorado.

ARC.DNM01_001_015
1939-1940 Mantle's Cave west slope cist area, masonry granaries, and sub-caves. University of Colorado Museum of Natural History, Anthropology Section. Boulder, Colorado.

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ARC.DNM02_001
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ARC.DNM02_003
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ARC.DNM04_004_005
1939-1940 Pack D. University of Colorado Museum of Natural History, Anthropology Section. Boulder, Colorado.

ARC.DNM04_004_006
1939-1940 Pack E. University of Colorado Museum of Natural History, Anthropology Section. Boulder, Colorado.

ARC.DNM04_004_008
1939-1940 Pack G. University of Colorado Museum of Natural History, Anthropology Section. Boulder, Colorado.

ARC.DNM04_004_009
1939-1940 Pack H. University of Colorado Museum of Natural History, Anthropology Section. Boulder, Colorado.

ARC.DNM04_004_010

1939-1940 Pack I. University of Colorado Museum of Natural History, Anthropology Section. Boulder, Colorado.

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APPENDIX A: CLASSIFICATION CODES

Table 7. The table reflects the codes I used to classify the material from Mantle's Cave.

Material	Class	Element
Animal Skin/Hair/Flesh	Modified	Buckskin
Animal Skin/Hair/Flesh	Modified	Buffalo Hide
Animal Skin/Hair/Flesh	Modified	Deer Hide
Animal Skin/Hair/Flesh	Modified	Feather
Animal Skin/Hair/Flesh	Modified	Fur
Animal Skin/Hair/Flesh	Modified	Hide
Animal Skin/Hair/Flesh	Modified	Hide Cord
Animal Skin/Hair/Flesh	Modified	Leather Strap
Animal Skin/Hair/Flesh	Modified	Membrane
Animal Skin/Hair/Flesh	Modified	Rabbit Fur
Animal Skin/Hair/Flesh	Modified	Quill
Animal Skin/Hair/Flesh	Modified	Quill Fragments
Clay/Ceramics	Clay	Fragment With Basket Imprint
Clay/Ceramics	Pottery	Body Sherd
Clay/Ceramics	Pottery	Rim Sherd
Clay/Ceramics	Storage Sealers	Plug
Combined Materials	Animal, Bone	Bones, Hide
Combined Materials	Animal, Flora	Bone Awl with Grass
Combined Materials	Animal, Flora	Rope, Fur
Combined Materials	Animal, Flora, Wood	Shoes
Combined Materials	Animal, Reed	Bag
Combined Materials	Animal, Woven	Bundle of Feathers With Cordage
Combined Materials	Animal, Vegetal	Bundle of Feathers With Grass
Combined Materials	Animal, Vegetal	Bundle of Feathers With Hide Tie
Combined Materials	Animal, Vegetal	Bundle of Feathers With Vegetal Strand
Combined Materials	Animal, Vegetal	Deerskin Head Pelt
Combined Materials	Animal, Vegetal	Fur and Tassel
Combined Materials	Animal, Flora	Flicker Feather Regalia
Combined Materials	Animal, Wood, Woven	Cedar, Cordage Hide Cord
Combined Materials	Animal, Wood	Flicker Feathers With Wood Tie

Material	Class	Element
Combined Materials	Animal, Wood	Fur, Twisted Twig
Combined Materials	Animal, Woven	Bag
Combined Materials	Animal, Woven	Cordage, Hide
Combined Materials	Animal, Woven	Pendant
Combined Materials	Animal, Woven	Shoes
Combined Materials	Animal, Woven	Weasel With Twine
Combined Materials	Bone, Flora	Necklace
Combined Materials	Bone, Wood, Woven	Fish Hook With Line
Combined Materials	Clay, Wood	Cist Cover With Stick
Combined Materials	Flora	Bark Mat
Combined Materials	Flora	Net Bag of Twine With Grass Lining
Combined Materials	Flora	Peg Snare
Combined Materials	Flora, Reed	Snare
Combined Materials	Flora, Stone, Wood	Hafted Knife
Combined Materials	Flora, Woven	Mat
Combined Materials	Reed	Mat
Combined Materials	Reed, Woven	Arrow Shaft With Tie
Combined Materials	Reed, Woven	Bag
Combined Materials	Reed, Woven	Basket Rods
Combined Materials	Reed, Woven	Mat
Combined Materials	Stone, Wood, Woven	Drill Shaft With Point
Combined Materials	Wood, Woven	Stick With String
Combined Materials	Woven, Wood	Mat
From Humans	Coprolite	Sample
From Humans	Hair	Strand
From Humans	Modern Item	Bread
Insect	Unknown	Fragments
Lithics	Chipped Stone	Biface
Lithics	Chipped Stone	Flake
Lithics	Chipped Stone	Knife
Lithics	Chipped Stone	Projectile Point
Lithics	Chipped Stone	Side Scraper
Lithics	Chipped Stone	Tool
Lithics	Chipped Stone	Worked Flakes
Lithics	Gaming	Ball
Lithics	Gaming	Piece
Lithics	Ground Stone	Handstone

Material	Class	Element
Lithics	Ground Stone	Hammer
Lithics	Ground Stone	Rubbing Stone
Lithics	Ground Stone	Shaft Polisher
Lithics	Ground Stone	Smoothing Stone
Lithics	Raw Material	Alabaster
Lithics	Raw Material	Chalcedony
Lithics	Unknown	Slate Pieces
Lithics	Unknown	Weight
Mixed Lot	Animal	Feather
Mixed Lot	Animal	Fur Strings
Mixed Lot	Bone	Unknown
Mixed Lot	Bone	Fragments
Mixed Lot	Clay	Sample
Mixed Lot	Lithics	Flakes
Mixed Lot	Shell	Gastropods
Mixed Lot	Wood	Fragments
Mixed Lot	Flora	Corn Kernels
Mixed Lot	Unknown	Burned Items
Mixed Lot	Animal	Fur Fragments
Mixed Lot	Flora	Unknown
Mixed Lot	Animal	Hide
Mixed Lot	Bone	Tooth
Mixed Lot	Bone	Mandible
Mixed Lot	Bone	Scapula
Mixed Lot	Clay	Sherds
Mixed Lot	Lithics	Rocks
Mixed Lot	Wood	Sticks
Mixed Lot	Wood	Burned Sticks
Mixed Lot	Sediment	Sand
Mixed Lot	Flora	Seeds
Mixed Lot	Flora	Grass
Mixed Lot	Flora	Corn Husk
Mixed Lot	Animal	Quill
Mixed Lot	Unknown	Unknown
Mixed Lot	Insect	Fragments
Mixed Lot	Wood	Charcoal
Mixed Lot	Bone	Burned Fragments
Mixed Lot	Wood	Stick Fragments

Material	Class	Element
Mixed Lot	Flora	Squash Fragments
Mixed Lot	Flora	Mixed Fragments
Mixed Lot	Sediment	Mixed Soil
Mixed Lot	Insect	Grasshopper
Mixed Lot	Flora	Pods
Mixed Lot	Flora	Tubers
Mixed Lot	Wood	Modified Stick
Mixed Lot	Reed	Fragments
Mixed Lot	Woven	Basket Fragments
Modified Animal Bone	Burned	Antler
Modified Animal Bone	Burned	Bighorn Sheep Tooth
Modified Animal Bone	Burned	Deer Fragments
Modified Animal Bone	Burned	Fish
Modified Animal Bone	Decorative	Bead
Modified Animal Bone	Decorated/Marked	Antler With Holes
Modified Animal Bone	Decorated/Marked	Cut Bone
Modified Animal Bone	Decorated/Marked	Fragments
Modified Animal Bone	Decorated/Marked	Red Stained Fragment
Modified Animal Bone	Fish	Tool
Modified Animal Bone	Fowl	Fragments
Modified Animal Bone	Gaming	Burned Dice
Modified Animal Bone	Gaming	Dice
Modified Animal Bone	Gaming	Incised Gaming Piece
Modified Animal Bone	Gaming	Piece
Modified Animal Bone	Mammal	Bison Bones
Modified Animal Bone	Mammal	Deer Leg Bones
Modified Animal Bone	Tool	Bone Awl
Modified Animal Bone	Tool	Bone Awl Fragment
Modified Animal Bone	Tool	Burned
Modified Animal Bone	Tool	Notched Deer Rib
Modified Animal Bone	Tool	Scapula Tool
Modified Animal Bone	Tool	Sheep Horn Wrench
Modified Animal Bone	Tool	Unknown
Modified Animal Bone	Unknown	Modified Horn
Modified Animal Bone	Unknown	Modified Horn
Modified Flora	Corn	Burned Cob
Modified Flora	Corn	Cob on Stick
Modified Flora	Grass	Bundle

Material	Class	Element
Modified Flora	Tuber	Whistle
Pot Hunter Discard	Mixed Items	Fragments
Reed	Modified	Dart Shaft
Reed	Modified	Cradle Fragments
Reed	Modified	Fragments
Reed	Modified	Shaft
Reed	Modified	Shaft Fragment
Reed	Unmodified	Fragments
Shells	Unmodified	Gastropods
Unknown	Plant	Unknown
Unknown	Resin	Fragments
Unmodified Animal Bone	Fish	Fragments
Unmodified Animal Bone	Fowl	Eagle Fragments
Unmodified Animal Bone	Fowl	Fragments
Unmodified Animal Bone	Fowl	Hawk Fragments
Unmodified Animal Bone	Fowl	Talons
Unmodified Animal Bone	Mammal	Beaver Fragments
Unmodified Animal Bone	Mammal	Bighorn Sheep Fragments
Unmodified Animal Bone	Mammal	Bighorn Sheep Vertebrae
Unmodified Animal Bone	Mammal	Bison Bones
Unmodified Animal Bone	Mammal	Bison Fragments
Unmodified Animal Bone	Mammal	Bison Tooth
Unmodified Animal Bone	Mammal	Chipmunk Fragments
Unmodified Animal Bone	Mammal	Coyote Fragments
Unmodified Animal Bone	Mammal	Deer Antler
Unmodified Animal Bone	Mammal	Deer Fragments
Unmodified Animal Bone	Mammal	Deer Tooth
Unmodified Animal Bone	Mammal	Fox Fragments
Unmodified Animal Bone	Mammal	Gopher Fragments
Unmodified Animal Bone	Mammal	Jackrabbit Fragments
Unmodified Animal Bone	Mammal	Mouse Fragments
Unmodified Animal Bone	Mammal	Muskrat Fragments
Unmodified Animal Bone	Mammal	Prairie Dog Fragments
Unmodified Animal Bone	Mammal	Rabbit Fragments
Unmodified Animal Bone	Mammal	Rat Fragments
Unmodified Animal Bone	Mammal	Squirrel Fragments
Unmodified Animal Bone	Mammal	Unknown
Unmodified Animal Bone	Mammal	Vertebrae

Material	Class	Element
Unmodified Animal Bone	Mammal	Vole Fragments
Unmodified Animal Bone	Mammal	Weasel Fragments
Unmodified Animal Bone	Mammal	Wolf Fragments
Unmodified Animal Bone	Remains	Mouse
Unmodified Animal Bone	Remains	Squirrel
Unmodified Animal Bone	Reptile	Snake Vertebrae
Unmodified Animal Bone	Unknown	Fragments
Unmodified Animal Bone	Unknown	Tooth
Unmodified Flora	Bean	Kidney Bean
Unmodified Flora	Corn	Cob
Unmodified Flora	Corn	Husk
Unmodified Flora	Corn	Nubbin
Unmodified Flora	Corn	Kernels
Unmodified Flora	Grass	Bundle
Unmodified Flora	Moss	Fragments
Unmodified Flora	Root	Fragments
Unmodified Flora	Seeds	Cedar Berries
Unmodified Flora	Seeds	Unknown
Unmodified Flora	Squash	Fragments
Unmodified Flora	Stem	Fragments
Unmodified Flora	Unknown	Fragments
Unmodified Sediment or Mineral	Ochre	Red
Unmodified Sediment or Mineral	Ochre	Yellow
Unmodified Sediment or Mineral	Sediment	Sand
Wood	Basketry	Burned Fragments
Wood	Burned	Charcoal
Wood	Burned	Digging Stick
Wood	Burned	Fragments
Wood	Burned	Log
Wood	Burned	Pointed Stick
Wood	Modified	Arrow Shaft
Wood	Modified	Binding
Wood	Modified	Cradle Rod
Wood	Modified	Cut Stick
Wood	Modified	Dart Shaft
Wood	Modified	Digging Stick

Material	Class	Element
Wood	Modified	Drill
Wood	Modified	Fragments
Wood	Modified	Game Trap
Wood	Modified	Hoop
Wood	Modified	Hoop With Handle
Wood	Modified	Knotted Stick
Wood	Modified	Loop
Wood	Modified	Pointed Stick
Wood	Modified	Snares
Wood	Modified	Splint
Wood	Modified	Split Rod For Basket
Wood	Modified	Tie
Wood	Modified	Tie Fragment
Wood	Modified	Trimmed Stick
Wood	Modified	Twisted Bark
Wood	Modified	Twisted Handle
Wood	Modified	Mat Fragments
Wood	Modified	Unknown
Wood	Modified	Utilized Stick
Wood	Modified	Winnowing Fan Fragment
Wood	Modified	Worked Stick
Wood	Modified	Wrapped Stick
Wood	Unmodified	Log
Wood	Unmodified	Stick Fragments
Wood	Unmodified	Unknown
Woven	Bark	Mat Fragments
Woven	Basketry	Base Fragment
Woven	Basketry	Carrying Basket
Woven	Basketry	Carrying Basket Fragments
Woven	Basketry	Core
Woven	Basketry	Fragments
Woven	Basketry	Globular Basket
Woven	Basketry	Ladle
Woven	Basketry	Miniature Basket
Woven	Basketry	Unknown
Woven	Cordage	Bark Fragments
Woven	Cordage	Double Noose Snare
Woven	Cordage	Fragments

Material	Class	Element
Woven	Cordage	Game Snare
Woven	Cordage	Mat
Woven	Cordage	Mat Fragments
Woven	Cordage	Net Bag
Woven	Cordage	Snare Fragments
Woven	Cordage	Tied
Woven	Unmodified	Stick Fragments

APPENDIX B: CATALOG

Table 8. The table includes the basic identification and provenience information for the items in the Mantle's Cave collection.

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
1939.01.001	A436	U-1	15"	Lithics	Unknown	Weight
1939.01.002	A437	U-1	15"	Lithics	Unknown	Weight
1939.01.003		C-1		Reed	Modified	Dart Shaft
1939.01.004				Wood	Modified	Snares
05024	A643	1E - 15	2.5"	Lithics	Ground Stone	Rubbing Stone
05025	A675	S-03	8"	Lithics	Ground Stone	Handstone
05028	A266			Lithics	Ground Stone	Hammer
05029	A155	D-1	1' 2"	Lithics	Raw Material	Chalcedony
05030	A268	G-3	2"	Lithics	Ground Stone	Smoothing Stone
05033	A642	1D-15	8"	Lithics	Ground Stone	Handstone
05034	A1076			Lithics	Ground Stone	Shaft Polisher
05045	A1017	C-1		No Longer Part of Collection		
05046	A1054			Lithics	Raw Material	Alabaster
05047	A1055			Lithics	Raw Material	Alabaster
05048	A1053			Lithics	Raw Material	Alabaster
05049	A1097	U-01	6-9"	Lithics	Ground Stone	Handstone
05050	A1113	G-3		Lithics	Gaming	Piece
05051	A1105	V-12		Combined Materials	Clay, Wood	Cist Cover With Stick
05052	A1050			Clay/Ceramics	Storage Sealers	Plug
05053	A1056			Clay/Ceramics	Storage Sealers	Plug
05055	A1077			Lithics	Unknown	Slate Pieces
05056	A1078			Lithics	Unknown	Slate Pieces
05057	A1079			Lithics	Unknown	Slate Pieces
05058	A1080			Lithics	Unknown	Slate Pieces
05059	A1081			Lithics	Unknown	Slate Pieces
05060	A1082			Lithics	Unknown	Slate Pieces
05061	A1083			Lithics	Unknown	Slate Pieces

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05084	A647	V-6	4"	Lithics	Chipped Stone	Flake
05088	A1121	1G-13	8"	Lithics	Chipped Stone	Flake
05089	A1125			Lithics	Chipped Stone	Worked Flakes
05101	A1070			Lithics	Chipped Stone	Worked Flakes
05102	A1071			Lithics	Chipped Stone	Worked Flakes
05124	A307a	H-1	5"	Lithics	Chipped Stone	Knife
05144	A590	1M-13	1.5"	Lithics	Chipped Stone	Worked Flakes
05166	A500	R-01		Lithics	Chipped Stone	Worked Flakes
05167	A501	R-01		Lithics	Chipped Stone	Flake
05168	A502	R-01		Lithics	Chipped Stone	Flake
05173	A474	H-3	7"	Lithics	Chipped Stone	Worked Flakes
05183	A546			Lithics	Chipped Stone	Projectile Point
05193	A537	1I-14	7"	Lithics	Chipped Stone	Flake
05194	A304		7"	Lithics	Chipped Stone	Projectile Point
05284	A669	H-4	4"	Lithics	Chipped Stone	Side Scraper
05389	A415	1Q-13	3"	Lithics	Chipped Stone	Flake
05390	A301a		1.5"	Lithics	Chipped Stone	Flake
05390	A301b		1.5"	Lithics	Chipped Stone	Flake
05391	A305		2"	Lithics	Chipped Stone	Flake
05392	A310		3"	Lithics	Chipped Stone	Worked Flakes
05393	A317			Modified Animal Bone	Decorated/Marked	Fragments
05394	A318			Modified Animal Bone	Burned	Fragments
05395	A319	I-01	24"	Lithics	Chipped Stone	Worked Flakes
05424	A388	X-1	13"	Lithics	Chipped Stone	Worked Flakes
05425	A389	K-2	9"	Lithics	Chipped Stone	Projectile Point

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05436	A264	From screening of debris piles west of large rock, right rear of cave		Lithics	Chipped Stone	Worked Flakes
05437	A275	G-1		Lithics	Chipped Stone	Worked Flakes
05438	A276	G-1		Lithics	Chipped Stone	Flake
05439	A277	G-1		Lithics	Chipped Stone	Flake
05440	A285	H-3	4.5"	Lithics	Chipped Stone	Flake
05441	A286	H-3	5"	Lithics	Chipped Stone	Worked Flakes
05442	A287	H-3	5.5"	Lithics	Chipped Stone	Worked Flakes
05443	A292		10"	Lithics	Chipped Stone	Scraper
05444	A297		1'	Lithics	Chipped Stone	Knife
05492	A160	B-1	7"	Lithics	Chipped Stone	Flake
05549	A253	Trash piles on big rock at right back of cave		Lithics	Chipped Stone	Projectile Point
05550	A255	Trash piles on big rock at right back of cave		Lithics	Chipped Stone	Worked Flakes
05551	A257	From screening of trash piles in vicinity of big rock right rear of cave		Lithics	Chipped Stone	Worked Flakes
05552	A258	From screening of trash piles in vicinity of big rock right rear of cave		Lithics	Chipped Stone	Flake
05553	A259	From screening of trash piles in vicinity of big rock right rear of cave		Lithics	Chipped Stone	Flake
05554	A260	From screening of trash piles in vicinity of big		Lithics	Chipped Stone	Flake

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
		rock right rear of cave				
05555	A273	N-1	To 10"	Lithics	Chipped Stone	Biface
05556	A278	G-1		Lithics	Chipped Stone	Flake
05557	A289a	I-3	4.5"	Lithics	Chipped Stone	Flake
05558	A289b	I-3	4.5"	Lithics	Chipped Stone	Flake
05559	A289c	I-3	4.5"	Lithics	Chipped Stone	Flake
05560	A296c	G-1	4.75"	Lithics	Chipped Stone	Worked Flakes
05590	A238	D-1	2' 4"	No Longer Part of Collection		
05651	A320b	H-01	8"	Lithics	Chipped Stone	Flake
05652	A320c	H-01	8"	Lithics	Chipped Stone	Knife
05658	A507	1C-14	1.5"	Lithics	Gaming	Ball
05666	A431	U-1	15"	Lithics	Chipped Stone	Knife
05678-1		V-6	7"	Mixed Lot	Flora	Seeds
05678-2		V-6	7"	Mixed Lot	Flora	Mixed Fragments
05678-3		V-6	7"	Mixed Lot	Lithics	Rocks
05678-4		V-6	7"	Mixed Lot	Sediment	Mixed Soil
05681		V-3	12"	From Humans	Coprolite	Sample
05683		T-3		Wood	Burned	Charcoal
05685-1		V-7		Mixed Lot	Clay, Wood	Sample
05685-2		V-7		Mixed Lot	Lithics	Rocks
05685-3		V-7		Mixed Lot	Flora	Seeds
05690a-1		A-1		Mixed Lot	Bone	Fragments
05690a-2		A-1		Mixed Lot	Flora	Mixed Fragments
05690a-3		A-1		Mixed Lot	Lithics	Flake
05690a-4		A-1		Mixed Lot	Shell	Gastropods
05690a-5		A-1		Mixed Lot	Wood	Charcoal
05690b-1		A-1		Mixed Lot	Animal	Hide
05690b-2		A-1		Mixed Lot	Bone	Tooth
05690b-3		A-1		Mixed Lot	Lithics	Flake
05690c-1		A-1		Mixed Lot	Bone	Fragments
05690c-2		A-1		Mixed Lot	Lithics	Flake
05690c-3		A-1		Mixed Lot	Shell	Gastropods
05690c-4		A-1		Mixed Lot	Wood	Burned Sticks

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05690d-1		A-1	7"	Mixed Lot	Bone	Fragments
05690d-2		A-1	7"	Mixed Lot	Bone	Burned Fragments
05690d-3		A-1	7"	Mixed Lot	Lithics	Flake
05690d-4		A-1	7"	Mixed Lot	Flora	Unknown
05691	A477	T-2	Cist	Wood	Burned	Charcoal
05693a-1		D-1	7"	Mixed Lot	Animal	Fur Strings
05693a-2		D-1	7"	Mixed Lot	Bone	Fragments
05693a-3		D-1	7"	Mixed Lot	Coprolite	Sample
05693a-4		D-1	7"	Mixed Lot	Lithics	Flake
05693a-5		D-1	7"	Mixed Lot	Shell	Gastropods
05693a-6		D-1	7"	Mixed Lot	Wood	Stick Fragments
05693b		D-1	75"	Unmodified Animal Bone	Unknown	Fragments
05694-1				Mixed Lot	Bone	Fragments
05694-2				Mixed Lot	Bone	Tooth
05694-3				Mixed Lot	Insects	Unknown
05694-4				Mixed Lot	Shell	Gastropods
05696	possibly A259	H-3	4"	Unmodified Flora	Corn	Husk
05697		T-1	10"	Wood	Modified	Digging Stick
05698				Unmodified Animal Bone	Unknown	Fragments
05699-1		G-3	8"	Modified Flora	Corn	Burned Cob
05699-2		G-3	8"	Unmodified Flora	Corn	Cob
05700		G-3		Wood	Burned	Fragments
05701a		D-1	2'	Modified Animal Bone	Decorative	Bead
05701b-1		D-1		Mixed Lot	Bone	Fragments
05701b-2		D-1		Mixed Lot	Shell	Gastropods
05701b-3		D-1		Mixed Lot	Wood	Stick Fragments
05701b-4		D-1		Mixed Lot	Flora	Seeds
05701b-5		D-1		Mixed Lot	Bone	Tooth
05701b-6		D-1		Mixed Lot	Flora	Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05701c		D-1	63"	Unmodified Animal Bone	Mammal	Vertebrae
05701d		D-1	9"	From Humans	Coprolite	Sample
05703a-1		B-1	Level A	Mixed Lot	Bone	Fragments
05703a-2		B-1	Level A	Mixed Lot	Lithics	Flake
05703a-3		B-1	Level A	Mixed Lot	Flora	Unknown
05703a-4		B-1	Level A	Mixed Lot	Shell	Gastropods
05703a-5		B-1	Level A	Mixed Lot	Animal	Hide
05703b-1		B-1		Mixed Lot	Animal	Hide
05703b-2		B-1		Mixed Lot	Bone	Fragments
05703b-3		B-1		Mixed Lot	Flora	Corn Kernels
05703b-4		B-1		Mixed Lot	Lithics	Flake
05703b-5		B-1		Mixed Lot	Shell	Gastropods
05703b-6		B-1		Mixed Lot	Wood	Fragments
05703b-7		B-1		Mixed Lot	Flora	Mixed Fragments
05709	A998			No Longer Part of Collection		
05710	A999			Clay/Ceramics	Pottery	Body Sherd
05711	A1000			Clay/Ceramics	Pottery	Body Sherd
05712	A1001			Clay/Ceramics	Pottery	Body Sherd
05713	A1002			Clay/Ceramics	Pottery	Body Sherd
05714	A1003			Clay/Ceramics	Pottery	Body Sherd
05715	A1004			Clay/Ceramics	Pottery	Body Sherd
05716	A1005			Clay/Ceramics	Pottery	Body Sherd
05717	A1006			Clay/Ceramics	Pottery	Body Sherd
05718	A1007			Clay/Ceramics	Pottery	Body Sherd
05719	A1008			Clay/Ceramics	Pottery	Body Sherd
05720	A1009			Clay/Ceramics	Pottery	Body Sherd
05721	A1010			Clay/Ceramics	Pottery	Body Sherd
05722	A1011			No Longer Part of Collection		
05723	A1012			Clay/Ceramics	Pottery	Body Sherd
05724	A1013			Clay/Ceramics	Pottery	Body Sherd
05725	A1014			Clay/Ceramics	Pottery	Body Sherd

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05726	A1015			Clay/Ceramics	Pottery	Body Sherd
05727	A1016			Clay/Ceramics	Pottery	Body Sherd
05730	A514	1E - 15	6"	Clay/Ceramics	Pottery	Body Sherd
05732	A1122	1D-14	3"	Clay/Ceramics	Pottery	Body Sherd
05733	A1124	1E - 14	3"	Clay/Ceramics	Pottery	Body Sherd
05735	A376a	E-1	6"	Unmodified Sediment or Mineral	Ochre	Yellow
05735	A376b	E-1	6"	Unmodified Sediment or Mineral	Ochre	Yellow
05736	A494			Unmodified Sediment or Mineral	Ochre	Red
05737	A1144	X-1		Unmodified Sediment or Mineral	Sediment	Sand
05738	A1120			Shells	Unmodified	Gastropods
05739	A1099		not seen	Unmodified Sediment or Mineral	Ochre	Red
05741				Shells	Unmodified	Gastropods
05742-1	A1128a	2H-1		Mixed Lot	Insects	Fragments
05742-2	A1128b	2H-1		Mixed Lot	Sediment	Mixed Soil
05743	A509	1D-14	0.5"	Clay/Ceramics	Pottery	Body Sherd
05744	A510	1C-15	2"	Clay/Ceramics	Pottery	Body Sherd
05745	A511	1D-2		Clay/Ceramics	Pottery	Rim Sherd
05746	A512	1D-14	3"	Clay/Ceramics	Pottery	Body Sherd
05747	A513	1E - 13	2"	Clay/Ceramics	Pottery	Body Sherd
05748a	A515	1D-14, 1D-15, 1E-14, 1E-15		Clay/Ceramics	Pottery	Body Sherd
05748b	A515	1D-14, 1D-15, 1E-14, 1E-15		Clay/Ceramics	Pottery	Body Sherd
05751-1				Mixed Lot	Bone	Mandible
05751-2				Mixed Lot	Bone	Scapula
05751-3				Mixed Lot	Clay	Sample
05751-4				Mixed Lot	Clay	Sherds

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05751-5				Mixed Lot	Lithics	Rocks
05751-6				Mixed Lot	Wood	Sticks
05752	A1123	1F-13		Clay/Ceramics	Pottery	Rim Sherd
05753	A300	F-01	8.25"	Modified Animal Bone	Mammal	Deer Leg Bones
05754	A302	K-01		Modified Animal Bone	Tool	Scapula Tool
05755	A313e			Combined Materials	Animal, Bone	Bones, Hide
05759	A904			Combined Materials	Animal, Flora	Bone Awl with Grass
05804	A1033			Unmodified Animal Bone	Unknown	Fragments
05805	A1048			Modified Animal Bone	Gaming	Dice
05806	A1057			Unmodified Animal Bone	Mammal	Deer Antler
05807	A1059			Modified Animal Bone	Gaming	Dice
05808	A1060			Modified Animal Bone	Gaming	Piece
05809	A1061			Modified Animal Bone	Gaming	Piece
05810	A1062			Modified Animal Bone	Gaming	Piece
05811	A1063			Modified Animal Bone	Gaming	Incised Gaming Piece
05812	A1064			Modified Animal Bone	Tool	Bone Awl Fragment
05813	A1069			Modified Animal Bone	Gaming	Piece
05814	A1107			Modified Animal Bone	Gaming	Dice
05815	A1108			Modified Animal Bone	Gaming	Dice
05816	A1109			Modified Animal Bone	Tool	Bone Awl Fragment
05817	A312	P-02	12"	Modified Animal Bone	Tool	Bone Awl
05818	A316			Modified Animal Bone	Gaming	Piece

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05821	A535	1B-15	2"	Modified Animal Bone	Gaming	Piece
05822	A538	1G-13		Modified Animal Bone	Gaming	Burned Dice
05823	A539	1G-13	1.5"	Modified Animal Bone	Gaming	Burned Dice
05824	A540	1F-14		Modified Animal Bone	Gaming	Burned Dice
05826	A444	D-1		Unmodified Animal Bone	Mammal	Bison Fragments
05827	A448	D-1		Unmodified Animal Bone	Mammal	Bison Tooth
05828	A456	U-02	13"	Unmodified Animal Bone	Fowl	Eagle Fragments
05829	A464			Modified Animal Bone	Fish	Tool
05830	A496	V-02	from cist	Unmodified Animal Bone	Fowl	Talons
05831	A498	T-01	1' 1"	Modified Animal Bone	Tool	Bone Awl
05833	A623	1C-15	2"	Modified Animal Bone	Decorated/Marked	Fragments
05834	A644	Cave B	8"	Modified Animal Bone	Tool	Bone Awl
05835	A645	Cave B	10.5"	Modified Animal Bone	Tool	Bone Awl
05839	A251	Trash piles on big rock at right back of cave		Unmodified Animal Bone	Mammal	Fox Fragments
05840	A252	Trash piles on big rock at right back of cave		Modified Animal Bone	Gaming	Piece
05841	A254	Trash piles on big rock at right back of cave		No Longer Part of Collection		
05842	A261	From screening of trash piles in vicinity of big rock right rear of cave		Modified Animal Bone	Gaming	Piece
05843	A262	From screening of trash piles in vicinity of big		Modified Animal Bone	Tool	Bone Awl

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
		rock right rear of cave				
05844	A279	R-02		Unmodified Animal Bone	Mammal	Deer Fragments
05845	A284	H-3	4"	Modified Animal Bone	Decorative	Bead
05846	A290	I-3	3"	Modified Animal Bone	Decorative	Bead
05847	A294	Cave A	7"	Modified Animal Bone	Gaming	Dice
05848	A442	02-R		Modified Animal Bone	Tool	Bone Awl Fragment
05849	A447	Q-1		Modified Animal Bone	Tool	Bone Awl Fragment
05850	A451	S-01		Modified Animal Bone	Tool	Bone Awl Fragment
05851	A149	A-1	6.5"	Modified Animal Bone	Tool	Unknown
05852	A156	C-1	23"	Modified Animal Bone	Decorated/Marked	Red Stained Fragment
05853	A159	A-1	11"	Modified Animal Bone	Tool	Burned
05854	A161	D-1	1' 3" below sticks	Modified Animal Bone	Mammal	Bison Bones
05862a		FL		Unmodified Animal Bone	Mammal	Coyote Fragments
05862b		FL		Unmodified Animal Bone	Mammal	Bighorn Sheep Vertebrae
05862c		FL		Unmodified Animal Bone	Mammal	Rabbit Fragments
05862d		FL		Unmodified Animal Bone	Mammal	Deer Tooth
05862e		FL		Unmodified Animal Bone	Mammal	Bison Bones
05864a		Trash on Surface		Unmodified Animal Bone	Mammal	Wolf Fragments
05864b		Trash on Surface		Unmodified Animal Bone	Mammal	Bighorn Sheep Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05864c		Trash on Surface		Modified Animal Bone	Burned	Deer Fragments
05864d		Trash on Surface		Unmodified Animal Bone	Mammal	Beaver Fragments
05864e		Trash on Surface		Unmodified Animal Bone	Mammal	Bison Fragments
05864f		Trash on Surface		Unmodified Animal Bone	Mammal	Rabbit Fragments
05864g		Trash on Surface		Unmodified Animal Bone	Mammal	Jackrabbit Fragments
05865a				Unmodified Animal Bone	Unknown	Fragments
05865b				Unmodified Animal Bone	Unknown	Fragments
05865c				Unmodified Animal Bone	Unknown	Fragments
05865d				Unmodified Animal Bone	Mammal	Bighorn Sheep Fragments
05865e -1				Unmodified Animal Bone	Unknown	Tooth
05865e -2				Unmodified Animal Bone	Mammal	Deer Fragments
05865f -1				Unmodified Animal Bone	Fish	Fragments
05865f -2				Modified Animal Bone	Burned	Fish
05867a		Rear of Cave		Unmodified Animal Bone	Mammal	Bighorn Sheep Fragments
05867b		Rear of Cave		Unmodified Animal Bone	Mammal	Vole Fragments
05867c		Rear of Cave		Unmodified Animal Bone	Mammal	Chipmunk Fragments
05867d		Rear of Cave		Unmodified Animal Bone	Reptile	Snake Vertebrae
05867e		Rear of Cave		Modified Animal Bone	Fowl	Fragments
05867f		Rear of Cave		Unmodified Animal Bone	Mammal	Deer Fragments
05867g		Rear of Cave		Unmodified Animal Bone	Mammal	Mouse Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05867h		Rear of Cave		Unmodified Animal Bone	Mammal	Muskrat Fragments
05867i		Rear of Cave		Unmodified Animal Bone	Mammal	Rat Fragments
05867j		Rear of Cave		Unmodified Animal Bone	Mammal	Beaver Fragments
05867k		Rear of Cave		Unmodified Animal Bone	Mammal	Squirrel Fragments
05867l		Rear of Cave		Unmodified Animal Bone	Mammal	Rabbit Fragments
05867m		Rear of Cave		Unmodified Animal Bone	Fish	Fragments
05867n		Rear of Cave		Unmodified Animal Bone	Mammal	Prairie Dog Fragments
05867o		Rear of Cave		Unmodified Animal Bone	Mammal	Weasel Fragments
05867p		Rear of Cave		Unmodified Animal Bone	Mammal	Gopher Fragments
05867q		Rear of Cave		Unmodified Animal Bone	Mammal	Jackrabbit Fragments
05868a		Trash on Surface		Unmodified Animal Bone	Mammal	Bighorn Sheep Fragments
05868b		Trash on Surface		Unmodified Animal Bone	Mammal	Deer Fragments
05868c		Trash on Surface		Unmodified Animal Bone	Mammal	Jackrabbit Fragments
05868d		Trash on Surface		Unmodified Animal Bone	Fowl	Fragments
05868e		Trash on Surface		Unmodified Animal Bone	Mammal	Bison Fragments
05868f		Trash on Surface		Unmodified Animal Bone	Mammal	Jackrabbit Fragments
05868g		Trash on Surface		Unmodified Animal Bone	Unknown	Fragments
05868h		Trash on Surface		Unmodified Animal Bone	Mammal	Unknown
05869a		Rear of Cave		Unmodified Animal Bone	Fish	Fragments
05869b		Rear of Cave		Unmodified Animal Bone	Fowl	Fragments
05869c		Rear of Cave		Unmodified Animal Bone	Fowl	Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05869d		Rear of Cave		Unmodified Animal Bone	Mammal	Rabbit Fragments
05869e		Rear of Cave		Unmodified Animal Bone	Mammal	Unknown
05869f		Rear of Cave		Unmodified Animal Bone	Mammal	Bison Bones
05869h		Rear of Cave		Modified Animal Bone	Burned	Bighorn Sheep Tooth
05869i		Rear of Cave		Unmodified Animal Bone	Mammal	Rat Fragments
05872a		D-1		Unmodified Animal Bone	Fowl	Hawk Fragments
05872b		D-1		Unmodified Animal Bone	Mammal	Jackrabbit Fragments
05872c		D-1		Unmodified Animal Bone	Fowl	Fragments
05872d		D-1		Unmodified Animal Bone	Unknown	Fragments
05878	A932	W-10	9"	Woven	Basketry	Fragments
05879	A934	W-11	9"	Wood	Modified	Tie Fragment
05880	A936	W-12	9"	Wood	Modified	Mat Fragments
05881	A937	W-13	9"	Unmodified Flora	Squash	Fragments
05899	A970	E-1		Woven	Basketry	Fragments
05900	A971	V-13	3" from cist top	Woven	Basketry	Fragments
05901	A975	2H-2, 2H-1		Unmodified Flora	Squash	Fragments
05902	A977	2G-4, 2H-4		Woven	Grass	Mat Fragments
05903	A980	V-12	8"	Combined Materials	Flora, Woven	Mat
05904	A981	V-12	8"	Combined Materials	Reed, Woven	Mat
05905	A982	V-13	8"	Combined Materials	Flora	Bark Mat
05915	A610	S-2, T-2		Woven	Bark	Knotted
05916	A611	S-2, T-2		Woven	Basketry	Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05917	A613	S-2, T-2		Unmodified Flora	Root	Fragments
05918-1	A616	S-2, T-2		Mixed Lot	Reed	Fragments
05918-2	A616	S-2, T-2		Mixed Lot	Wood	Sticks
05918-3	A616	S-2, T-2		Mixed Lot	Wood	Burned Sticks
05919	A620	S-2, T-2		Unmodified Flora	Squash	Fragments
05920	A621	S-2, T-2		Modified Flora	Tuber	Whistle
05921	A627			Woven	Bark	Mat Fragments
05922-1	A630			Mixed Lot	Bone	Fragments
05922-2	A630			Mixed Lot	Flora	Unknown
05922-3	A630			Mixed Lot	Flora	Squash
05922-4	A630			Mixed Lot	Lithics	Flake
05922-5	A630			Mixed Lot	Wood	Knotted Stick
05923	A634	1C-14	2' 4"	Unmodified Flora	Seeds	Cedar Berries
05924	A636	1C-16	2"	Woven	Basketry	Core
05925	A639	1D-15	8"	Unmodified Flora	Corn	Kernels
05926	A641	1E - 15	5"	Woven	Basketry	Base Fragment
05927	A646			Wood	Modified	Worked Stick
05928-1	A649			Mixed Lot	Flora	Mixed Fragments
05928-2	A649			Mixed Lot	Lithics	Flake
05928-3	A649			Mixed Lot	Wood	Burned Sticks
05928-4	A649			Mixed Lot	Animal	Hide
05928-5	A649			Mixed Lot	Wood	Sticks
05930	A976	2G-4, 2H-4		Wood	Modified	Tie
05931	A1028			Woven	Cordage	Fragments
05932	A1030			Woven	Basketry	Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05933	A1031			Wood	Modified	Wrapped Stick
05934	A1034			Unmodified Flora	Corn	Husk
05935	A1036			No Longer Part of Collection		
05936	A1038			Wood	Unmodified	Unknown
05937	A1042	W-14	11"	Wood	Modified	Hoop
05938	A1049			Woven	Cordage	Tied
05939	A1047			Wood	Burned	Fragments
05940a	A1051			Unmodified Flora	Squash	Fragments
05940b	A1051			Modified Flora	Squash	Fragments
05941a	A1066			Combined Materials	Reed, Woven	Basket Rods
05941b	A1066			Wood	Modified	Split Rod For Basket
05942	A1067			Combined Materials	Reed, Flora	Snare
05943	A1073			Woven	Basketry	Ladle
05944	A1074			Woven	Cordage	Bark Fragments
05945	A1075			Unmodified Flora	Squash	Fragments
05946	A1065			Reed	Modified	Shaft
05947-a	A1085			Combined Materials	Flora	Peg Snare
05947-b	A1085			Combined Materials	Flora	Peg Snare
05947-c	A1085			Combined Materials	Flora	Peg Snare
05947-d	A1085			Combined Materials	Flora	Peg Snare
05948a	A1090			Woven	Cordage	Net Bag
05948b	A1090			Woven	Cordage	Net Bag
05949	A1095			Woven	Cordage	Bark Fragments
05950	A1096			Woven	Cordage	Tied
05951	A1098	D-1	2"	Unmodified Flora	Corn	Kernels
05952a	A1032			Unmodified Flora	Squash	Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05952b	A1032			Unmodified Flora	Squash	Fragments
05953a	A1043	Below W-10		Reed	Modified	Shaft
05953b	A1043	Below W-10		Reed	Modified	Shaft
05954	A1044	Below W-10		Wood	Modified	Digging Stick
05955	A1045	Below W-10		Combined Materials	Reed, Woven	Arrow Shaft With Tie
05956	A1072			Wood	Modified	Arrow Shaft
05957	A1087			Woven	Basketry	Globular Basket
05958	A1037			Reed	Modified	Shaft
05959	A1084			Woven	Cordage	Game Snare
05960	A1086			Combined Materials	Bone, Wood, Woven	Fish Hook With Line
05961	A1092			Woven	Cordage	Game Snare
05962	A1089			Woven	Cordage	Game Snare
05963	A1100			Wood	Modified	Cut Stick
05964	A1101			Combined Materials	Stone, Wood, Woven	Drill Shaft With Point
05965	A1102			Wood	Modified	Trimmed Stick
05966	A1103			Wood	Modified	Arrow Shaft
05967	A1106			Modified Flora	Corn	Cob on Stick
05968	A1110			Wood	Modified	Utilized Stick
05969	A1112	G-3	From 6" to 7" below surface	No Longer Part of Collection		
05970	A1114	G-3	From 6" to 7" below surface	Reed	Modified	Shaft Fragment

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05971	A1116	T-2		Animal Skin/Hair/Flesh	Modified	Membrane
05972	A1117	1E - 14	to 10"	Woven	Basketry	Fragments
05973	A1126	1O-13	4"	Woven	Cordage	Bark Fragments
05974	A1145			Unmodified Flora	Corn	Kernels
05975	A1068			Reed	Modified	Cradle Fragments
05976	A232	D-1		Combined Materials	Bone, Flora	Necklace
05978	A235 (a) (b)	Trash piles of former diggers		Wood	Unmodified	Log
05979	A236	D-1	1' 1"	Wood	Modified	Cut Stick
05980	A239	C-1	3"	Wood	Burned	Log
05982	A256	Trash piles on big rock at right back of cave		Wood	Modified	Knotted Stick
05983a	A263	From screening of trash piles in vicinity of big rock right rear of cave		Woven	Cordage	Bark Fragments
05983b	A263	From screening of trash piles in vicinity of big rock right rear of cave		Woven	Cordage	Fragments
05984	A267	K-01	15"	Wood	Modified	Loop
05985	A269	K-01		Wood	Modified	Digging Stick
05986	A270	K-01	3"	Woven	Basketry	Fragments
05987	A291	I-3	1' 1"	Modified Animal Bone	Burned	Antler
05988	A293	Cave A	11"	Combined Materials	Wood, Woven	Stick With String
05989	A295		11"	Woven	Cordage	Fragments
05990	A296a	G-1	4.75"	Combined Materials	Stone, Flora, Wood	Hafted Knife
05991	A298	F-1		Woven	Basketry	Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
05992	A299		1' 10"	No Longer Part of Collection		
05993	A303		1' 5"	Wood	Burned	Pointed Stick
05994a	A307b	H-1	5"	Combined Materials	Reed	Mat
05994b	A307b	H-2	5"	Wood	Modified	Cradle Rod
05995	A308		6"	Wood	Unmodified	Stick Fragments
05996	A309		2'	Woven	Cordage	Fragments
05997	A313a			Woven	Basketry	Core
05998	A313b			Woven	Basketry	Unfinished
05999	A313c			Woven	Basketry	Core
06000	A313d			Woven	Basketry	Core
06004	A379	X-1		Combined Materials	Reed, Woven	Mat
06005a	A380	X-1		Woven	Cordage	Mat Fragments
06005b	A380	X-1		Woven	Cordage	Mat
06006	A383	W-02		Combined Materials	Woven, Wood	Mat
06007	A384	J-2	7"	Woven	Cordage	Bark Fragments
06008	A385	J-2	7"	Wood	Modified	Unknown
06009	A386	J-2	7"	Unknown	Plant	Unknown
06010	A387	J-2	7"	No Longer Part of Collection		
06011	A411	1Q-13	9"	Woven	Basketry	Fragments
06012a	A417	1Q-13	9"	Unmodified Flora	Squash	Fragments
06012b	A417	1Q-13	9"	Unmodified Flora	Squash	Fragments
06012c	A417	1Q-13	9"	Wood	Modified	Fragments
06013	A418	J-1		Woven	Bark	Mat Fragments
06014	A432	U-1	15"	Wood	Modified	Twisted Bark
06015	A440	N-01 & J-1	To 5"	Wood	Modified	Tie Fragment
06016	A441	N-01 & J-1	To 5"	Woven	Basketry	Unknown
06017	A443	H-1	16"	Wood	Modified	Pointed Stick

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
06018	A445	V-1	8"	Wood	Burned	Digging Stick
06019	A446	T-1	7"	Wood	Modified	Pointed Stick
06020	A450	1	5"	Wood	Modified	Splint
06021	A457	O-1	2" - base 6" (one end)	Wood	Modified	Twisted Handle
06022	A458	N-2		Wood	Modified	Binding
06023	A460	N-2		Unknown	Resin	Fragments
06024-1	A461	N-2		Mixed Lot	Flora	Pods or Tubers
06024-2	A461	N-2		Mixed Lot	Flora	Mixed Fragments
06025	A462	L-2	7"	No Longer Part of Collection		
06026	A463	V-01	4"	No Longer Part of Collection		
06027	A467	T-1	5"	Wood	Modified	Hoop With Handle
06028a	A469	Q-01	7"	No Longer Part of Collection		
06029	A470	T-2	7"	Wood	Modified	Cut Stick
06030	A475	U-1	on surface level	Wood	Modified	Game Trap
06031	A476	Y-3		Wood	Basketry	Burned Fragments
06032	A478	T-1		No Longer Part of Collection		
06033	A479	P-01	10.75"	No Longer Part of Collection		
06034	A495	U-02	from cist	Wood	Modified	Utilized Stick
06035	A497	R-01	10"	Woven	Cordage	Bark Fragments
06036	A499	R-01	1' 6"	Wood	Modified	Drill
06037-1	A466	T-1, T-2, T-3		Mixed Lot	Unknown	Unknown
06037-2	A466	T-1, T-2, T-3		Mixed Lot	Flora	Squash Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
06037-3	A466	T-1, T-2, T-3		Mixed Lot	Flora	Corn Kernels
06037-4	A466	T-1, T-2, T-3		Mixed Lot	Animal	Hide
06038	A455	N-2	to 15"	Unmodified Flora	Corn	Kernels
06039	A503	R-01	10"	No Longer Part of Collection		
06040	A505	R-01		Woven	Cordage	Fragments
06041	A508	Z-15	2"	Woven	Basketry	Fragments
06042	A536	1E - 14	2"	Woven	Basketry	Fragments
06043-1	A541	1F-13	1"	Mixed Lot	Flora	Mixed Fragments
06043-2	A541	1F-13	1"	Mixed Lot	Woven	Basket Fragments
06044	A543	R-1	10"	Animal Skin/Hair/Flesh	Modified	Sinew
06045-1	A545	Q-1		Mixed Lot	Flora	Unknown
06045-2	A545	Q-1		Mixed Lot	Wood	Sticks
06045-3	A545	Q-1		Mixed Lot	Flora	Corn Kernels
06046	A559	Q-02	16"	Wood	Burned	Digging Stick
06050	A576			Wood	Modified	Dart Shaft
06051	A577			Woven	Basketry	Fragments
06052	A588	1G-13	6"	Wood	Modified	Winnowing Fan Fragment
06053	A593	1I-21	3"	Woven	Cordage	Fragments
06054	A594	1M-13	7"	Woven	Basketry	Fragments
06056	A612	2T-25		Insect	Unknown	Fragments
06057-1	A617	S-2, T-2		Mixed Lot	Animal	Fur
06057-2	A617	S-2, T-2		Mixed Lot	Flora	Mixed Fragments
06057-3	A617	S-2, T-2		Mixed Lot	Bone	Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
06057-4	A617	S-2, T-2		Mixed Lot	Lithics	Flake
06057-5	A617	S-2, T-2		Mixed Lot	Wood	Fragments
06058a	A619	S-2, T-2		Modified Flora	Corn	Burned Cob
06058b	A619	S-2, T-2		Unmodified Flora	Squash	Fragments
06059	A628			Wood	Modified	Cut Stick
06060	A632			No Longer Part of Collection		
06061a	A637	1C-14	1' 6"	Woven	Cordage	Game Snare
06061b	A637	1C-14	1' 6"	Woven	Cordage	Snare Fragments
06062-1	A638	1C-14		Mixed Lot	Wood	Fragments
06062-2	A638	1C-14		Mixed Lot	Insect	Grasshopper
06062-3	A638	1C-14		Mixed Lot	Lithics	Rocks
06062-4	A638	1C-14		Mixed Lot	Wood	Charcoal
06063a	A648			Unmodified Flora	Grass	Bundle
06063b	A648			Modified Flora	Grass	Bundle
06065	A151	B-1		Woven	Basketry	Base Fragment
06066	A152	C-1	6.5"	Unmodified Flora	Corn	Husk
06067	A154	D-1	6"	Wood	Unmodified	Unknown
06068	A162	C-1	2"	Reed	Modified	Fragments
06069	A163	D-1	2' 4"	Woven	Cordage	Fragments
06070	A164	C-1	2'	Woven	Cordage	Fragments
06073	A899			Wood	Modified	Unknown
06074	A378	X-1		Woven	Basketry	Core
06075	A381	X-1		Woven	Basketry	Core
06076a	A377	X-1		Woven	Basketry	Carrying Basket
06076b	A377	X-1		Woven	Basketry	Carrying Basket Fragments
06077	A878	2H-4		Woven	Cordage	Bark Fragments
06078				Wood	Modified	Fragments

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
06080				Unmodified Flora	Moss	Fragments
06081-1				Mixed Lot	Bone	Fragments
06081-2				Mixed Lot	Flora	Unknown
06081-3				Mixed Lot	Insect	Fragments
06081-4				Mixed Lot	Wood	Sticks
06081-5				Mixed Lot	Unknown	Unknown
06083				Reed	Unmodified	Fragments
06084a				Unmodified Flora	Stem	Fragments
06084b-1				Mixed Lot	Bone	Burned Bone
06084b-2				Mixed Lot	Flora	Squash Fragments
06085-1				Mixed Lot	Flora	Corn Kernels
06085-2				Mixed Lot	Wood	Sticks
06087				Unmodified Flora	Seeds	Unknown
06090				Wood	Burned	Charcoal
06092				Wood	Unmodified	Stick Fragments
06094	A150	B-1	11.25"	Animal Skin/Hair/Flesh	Modified	Quill
06095	A157	D-1	6"	Animal Skin/Hair/Flesh	Modified	Buckskin
06096	A165	C-1	2'	Animal Skin/Hair/Flesh	Modified	Sinew
06097	A166	A-1	11"	Animal Skin/Hair/Flesh	Unmodified	Quill
06098	A167	A-1	13"	Animal Skin/Hair/Flesh	Modified	Feather
06099	A233	D-1		Animal Skin/Hair/Flesh	Modified	Feather
06100	A265	From screening of debris piles		Combined Materials	Animal, Woven	Cordage, Hide

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
		west of large rock, right rear of cave				
06101	A281		On surface	Animal Skin/Hair/Flesh	Modified	Deer Hide
06102	A282	Q-03	12"	Combined Materials	Animal, Vegetal	Deerskin Head Pelt
06103	A311	R-02		Combined Materials	Animal, Vegetal	Fur and Tassel
06104	A321	1B-2	1' 3"	Animal Skin/Hair/Flesh	Modified	Buffalo Hide
06107	A375	Z-1	7"	Animal Skin/Hair/Flesh	Modified	Deer Hide
06108	A423	U-2	17"	Combined Materials	Animal, Woven	Bag
06109	A428	U-1	15"	Combined Materials	Animal, Woven	Pendant
06110	A449	Z-3	to 10.5"	From Humans	Hair	Strand
06111	A452	T-3	on surface	Combined Materials	Animal, Flora	Bone Awl with Grass
06112	A459	N-2		Combined Materials	Animal, Wood, Woven	Cedar, Cordage Hide Cord
06113	A465	T-1	8"	From Humans	Hair	Strand
06114	A468	U-2	16.5"	Animal Skin/Hair/Flesh	Modified	Deer Hide
06115	A472	W-3, X-3		Animal Skin/Hair/Flesh	Modified	Hide Cord
06116	A473	U-2	9"	Animal Skin/Hair/Flesh	Modified	Hide Cord
06117-1	A517	1C-1		Mixed Lot	Animal	Feather
06117-2	A517	1C-1		Mixed Lot	Bone	Fragments
06117-3	A517	1C-1		Mixed Lot	Animal	Hide
06118	A542	1E - 13	6-9"	Animal Skin/Hair/Flesh	Modified	Feather

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
06119	A544	R-1	10"	Combined Materials	Animal, Flora	Rope, Fur
06120	A560	T-02	7"	Animal Skin/Hair/Flesh	Modified	Feather
06121	A618	S-2, T-2		Shells	Unmodified	Gastropods
06122	A622	U-02	7"	Animal Skin/Hair/Flesh	Modified	Deer Hide
06123	A629			Animal Skin/Hair/Flesh	Modified	Rabbit Fur
06124	A631			Unmodified Animal Bone	Remains	Mouse
06126	A640	1D-15	10"	Combined Materials	Animal, Wood	Fur, Twisted Twig
06127	A650	V-5	10"	Unmodified Animal Bone	Remains	Mouse
06129	A900			Animal Skin/Hair/Flesh	Modified	Feather
06130	A903	1B-15	2-3"	Unmodified Animal Bone	Remains	Mouse
06136	A974	V-14		Combined Materials	Animal, Woven	Shoes
06137	A978	P-3	1' 6"	Unmodified Animal Bone	Remains	Squirrel
06138	A979	N-2		Unmodified Animal Bone	Remains	Mouse
06139	A981	V-12	8"	Animal Skin/Hair/Flesh	Unknown	Fur
06143	A1058			Animal Skin/Hair/Flesh	Modified	Deer Hide
06144	A1091	R-02		Combined Materials	Animal, Woven	Weasel With Twine
06145	A1093			Animal Skin/Hair/Flesh	Modified	Sinew

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
06146	A1118	1E - 14	to 10"	Animal Skin/Hair/Flesh	Modified	Animal Skin
06147	A1130	Q-1		Unmodified Flora	Seeds	Unknown
06148				Shells	Unmodified	Gastropods
06149	A1094			Animal Skin/Hair/Flesh	Modified	Rabbit Fur
06153				Pot Hunter Discard	Mixed Items	Fragments
06154	A518	1C-1	2"	Animal Skin/Hair/Flesh	Unmodified	Quill Fragments
06155	A519	1C-1	2"	Lithics	Chipped Stone	Biface
06156	A520	1C-1	2"	Lithics	Chipped Stone	Biface
06157	A521	1C-1	2"	Lithics	Chipped Stone	Biface
06158	A522	1C-1	2"	Lithics	Chipped Stone	Biface
06159	A523	1C-1	2"	Lithics	Chipped Stone	Biface
06160	A524	1C-1	2"	Lithics	Chipped Stone	Biface
06161	A525	1C-1	2"	Lithics	Chipped Stone	Biface
06162	A526	1C-1	2"	Lithics	Chipped Stone	Worked Flake
06163	A527	1C-1	2"	Modified Animal Bone	Tool	Bone Awl
06164	A528	1C-1	2"	Animal Skin/Hair/Flesh	Modified	Hide
06165	A529	1C-1	2"	Animal Skin/Hair/Flesh	Modified	Hide
06166	A530	1C-1	2"	Modified Animal Bone	Tool	Notched Deer Rib
06167	A531	1C-1	2"	Modified Animal Bone	Tool	Notched Deer Rib
06168	A532	1C-1	2"	Modified Animal Bone	Decorated/Marked	Cut Bone
06169	A533	1C-1	2"	Modified Animal Bone	Tool	Sheep Horn Wrench
06170	A534	1C-1	2"	Combined Materials	Flora	Net Bag of Twine With

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
						Grass Lining
06171	A322a	V-02	7"	Lithics	Chipped Stone	Knife
06171	A322b	V-02	7"	Lithics	Chipped Stone	Knife
06171	A322c	V-02	7"	Lithics	Chipped Stone	Knife
06171	A322d	V-02	7"	Lithics	Chipped Stone	Knife
06171	A322e	V-02	7"	Lithics	Chipped Stone	Knife
06171	A322f	V-02	7"	Lithics	Chipped Stone	Knife
06171	A322g	V-02	7"	Lithics	Chipped Stone	Knife
06172	A414	1P-13	9"	Animal Skin/Hair/Flesh	Modified	Rabbit Fur
06173a	A419	L-01	11"	Combined Materials	Reed, Woven	Bag
06173b-1	A419	L-01	11"	Mixed Lot	Combined	Fish Hooks
06173b-2	A419	L-01	11"	Mixed Lot	Flora	Corn Kernels
06173b-3	A419	L-01	11"	Mixed Lot	Woven	Cordage
06174	A420	L-01	11"	Animal Skin/Hair/Flesh	Modified	Rabbit Fur
06175	A421	L-01	11"	Combined Materials	Animal, Woven	Bundle of Feathers With Cordage
06176	A422	L-01	11"	Animal Skin/Hair/Flesh	Modified	Sinew
06177	A424	U-1	15"	Combined Materials	Animal, Reed	Bag
06178	A425	U-1	15"	Combined Materials	Animal, Flora	Flicker Feather Regalia
06179	A426	U-1	15"	Animal Skin/Hair/Flesh	Modified	Sinew
06180	A427	U-1	15"	Modified Animal Bone	Unknown	Modified Horn
06181	A430	U-1	15"	Animal Skin/Hair/Flesh	Modified	Leather Strap

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
06182	A433	U-1	15"	Combined Materials	Animal, Vegetal	Bundle of Feathers With Grass
06183	A434	U-1	15"	Combined Materials	Animal, Vegetal	Bundle of Feathers With Vegetal Strand
06184	A435	U-1	15"	Combined Materials	Animal, Vegetal	Bundle of Feathers With Hide Tie
06185	A429	U-1	15"	Modified Animal Bone	Unknown	Modified Horn
06186	A972	V-14		Combined Materials	Animal, Woven	Shoes
06187	A973	V-14		Combined Materials	Animal, Woven	Shoes
06188	A1088			Woven	Cordage	Double Noose Snare
06189	A153	B-1	19"	Lithics	Chipped Stone	Knife
06190	A296b	G-1	4.75"	No Longer Part of Collection		
06191	A320a	H-01	8"	No Longer Part of Collection		
06193a	A271	Q-03	Top 4.5"	Combined Materials	Animal, Flora, Wood	Shoes
06193b	A271	Q-03	Top 4.5"	Combined Materials	Animal, Flora, Wood	Shoes
06194	A280	H-3	2"	Lithics	Chipped Stone	Knife
06195	A591	1K-14	3"	Clay/Ceramics	Pottery	Body Sherd
06220	A1104	Cave B		No Longer Part of Collection		
06221	A901	C-1	3"	No Longer Part of Collection		
06222	A477	T-2		No Longer Part of Collection		
06223	A234	D-1	7"	Unmodified Flora	Corn	Kernels
06224	A272	N-01	10"	Unmodified Flora	Seeds	Unknown
06225a	A274a&b	L-01		Modified Flora	Corn	Cob on Stick
06225b	A274a&b	L-01		Modified Flora	Corn	Cob on Stick

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
06227-1	A382	X-1		Unmodified Flora	Corn	Kernels
06227-2	A382	X-1		Wood	Burned	Fragments
06228	A410	J-1, K-1		Unmodified Flora	Corn	Kernels
06229	A412	1Q-13		No Longer Part of Collection		
06230	A413	1N-13	3"	Unmodified Flora	Seeds	Cedar Berries
06231	A416	1N-13		Unmodified Flora	Corn	Kernels
06231	A416	1N-13		Lithics	Chipped Stone	Tool
06231q possibly 05491	A416	1N-13		Lithics	Chipped Stone	Projectile Point
06231r	A416	1N-13		Lithics	Chipped Stone	Tool
06231s	A416	1N-13		Lithics	Chipped Stone	Tool
06231t	A416	1N-13		Lithics	Chipped Stone	Tool
06232-1	A439	U-1	15"	Unmodified Flora	Corn	Kernels
06232-2	A439	U-1	15"	Unmodified Flora	Bean	Kidney Bean
06233	A453	1Q-13	8"	Unmodified Flora	Corn	Kernels
06234	A4534			From Humans	Modern Item	Bread
06235	A454	N-2	to 15"	Unmodified Flora	Seeds	Unknown
06236	A455	N-2	to 15"	Unmodified Flora	Corn	Cob
06237	A471	P-01	12.25"	Unmodified Flora	Seeds	Unknown
06238	A504	R-01		Unmodified Flora	Unknown	Fragments
06239	A506	R-01		Unmodified Flora	Corn	Kernels
06240	A516	1C-1		No Longer Part of Collection		
06241	A589	1L-13		Unmodified Flora	Corn	Kernels
06242a	A614	S-2, T-2		Unmodified Flora	Corn	Kernels
06242b	A614	S-2, T-2		Unmodified Flora	Corn	Kernels

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
06243a	A615	S-2, T-2		Unmodified Flora	Corn	Kernels
06243b	A615	S-2, T-2		Unmodified Flora	Corn	Kernels
06243c	A615	S-2, T-2		Unmodified Flora	Corn	Kernels
06243d	A615	S-2, T-2		Unmodified Flora	Corn	Kernels
06244	A624	1C-15		Unmodified Flora	Corn	Kernels
06245	A626			Unmodified Flora	Corn	Kernels
06248	A902	1M-13	2"	Unmodified Flora	Seeds	Unknown
06251	A933	W-10	9"	Unmodified Flora	Corn	Kernels
06252-1	A935	W-10	9"	Modified Flora	Corn	Cob on Stick
06252-2	A935	W-10	9"	Unmodified Flora	Corn	Cob
06257	A969	2H-4		Unmodified Flora	Corn	Cob
06258	A1029			Unmodified Flora	Corn	Cob
06259	A1035			Unmodified Flora	Corn	Kernels
06260-1	A1039			Unmodified Flora	Corn	Cob
06260-2	A1039			Modified Flora	Corn	Cob on Stick
06261	A1040	D-1	from 6" down	Unmodified Flora	Corn	Kernels
06262	A1041	D-1	from 6" down	Unmodified Flora	Corn	Kernels
06263a	A1046			Unmodified Flora	Corn	Cob
06263b	A1046			Unmodified Flora	Corn	Cob
06264	A1052			Unmodified Flora	Corn	Kernels
06265	A1111			Unmodified Flora	Corn	Kernels

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
06266	A1119			Unmodified Flora	Corn	Kernels
06267	A1127	F-1		Unmodified Flora	Corn	Nubbin
06268	A1129		1' 6"	Unmodified Flora	Corn	Kernels
06269	A1146	I-1		Unmodified Flora	Corn	Kernels
06270	A1147	L-1		Unmodified Flora	Seeds	Unknown
06271	A1148	X-1		Unmodified Flora	Seeds	Unknown
06272-1				Mixed Lot	Animal	Fur Fragments
06272-2				Mixed Lot	Flora	Seeds
06272-3				Mixed Lot	Sediment	Sand
06519		X-3, 1A-3		Lithics	Ground Stone	Handstone
06520	0048-003-2			Woven	Basketry	Miniature Basket
06743				Lithics	Chipped Stone	Projectile Point
06744		H		Lithics	Chipped Stone	Biface
07828-1				Unmodified Flora	Corn	Cob
07828-2				Modified Flora	Corn	Burned Cob
07829				Clay/Ceramics	Clay	Fragment With Basket Imprint
TIN-0476				Woven	Basketry	Fragments
TIN-0477				Unmodified Flora	Seeds	Unknown
TIN-0479	47D7			Woven	Unmodified	Stick Fragments
TIN-0480 - 1				Mixed Lot	Animal	Feather
TIN-0480 - 2				Mixed Lot	Bone	Fragments
TIN-0480 - 3				Mixed Lot	Flora	Corn Kernels

UCM Number	Scoggin Number	Unit	Depth Found	Material	Class	Element
TIN-0480 - 4				Mixed Lot	Flora	Unknown
TIN-0480 - 5				Mixed Lot	Lithics	Flake
TIN-0480 - 6				Mixed Lot	Shell	Gastropods
TIN-0480 - 7				Mixed Lot	Animal	Fur
TIN-0481				Combined Materials	Animal, Wood	Flicker Feathers With Wood Tie
TIN-0482	47D8			Wood	Modified	Stick Fragments
TIN-0541-1				Mixed Lot	Animal	Quill
TIN-0541-2				Mixed Lot	Flora	Corn Husk
TIN-0541-3				Mixed Lot	Flora	Grass
TIN-0541-4				Mixed Lot	Flora	Unknown
TIN-0542				Wood	Modified	Knotted Stick
TIN-0544	47D6	E-1		Wood	Burned	Charcoal
TIN-0594	A438	U-1	15"	Lithics	Chipped Stone	Flake
	A237	D-1	1' 4"	No Longer Part of Collection		
	A246			No Longer Part of Collection		
	A283	H-3	6"	No Longer Part of Collection		
	A288	D-1	16"	No Longer Part of Collection		
	A306		6"	No Longer Part of Collection		
	A314	Y-3	6' to 1' 3"	No Longer Part of Collection		
	A315	Z-3	6" to 1' 3"	No Longer Part of Collection		
	A592	1U-14	to 8" max	No Longer Part of Collection		
	A635		10"	No Longer Part of Collection		
	A1115	E-1		No Longer Part of Collection		

APPENDIX C: PHOTOGRAPHS OF REFERENCED ITEMS

Figure 69. An additional image of the maize on a stick pairs, UCM 06225. The cobs reflect different colors of maize. Copyright University of Colorado Museum of Natural History.

Figure 70. The remnants of the fire drill fragment (UCM 05939). Descriptions of the item suggest that at one time the piece was larger and identifiable. Copyright University of Colorado Museum of Natural History.

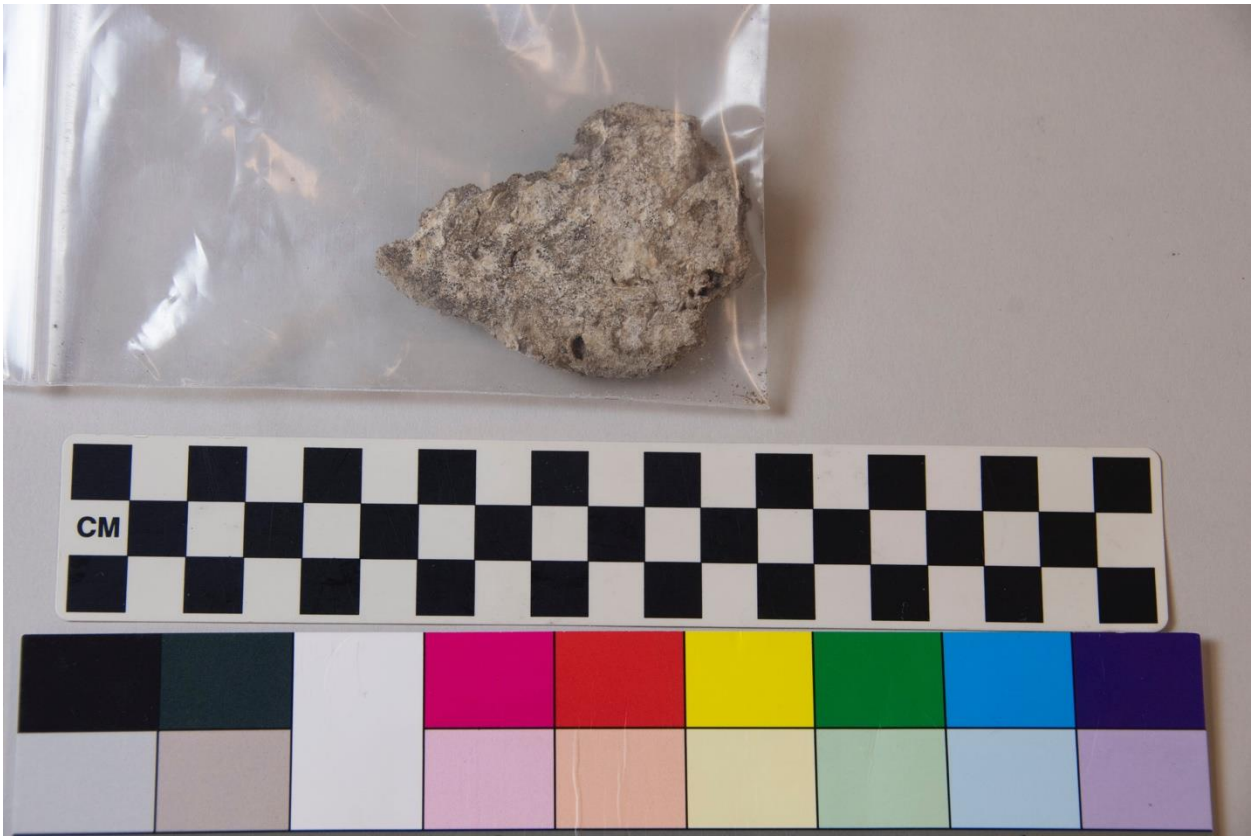


Figure 71. One of the coprolite samples (UCM 05701d). The item was photographed inside of its specimen bag to protect the item. Copyright University of Colorado Museum of Natural History.

Figure 72. One of the handstones (UCM 05025) from Mantle's Cave. The ground stone is worn along the curved edges. Copyright University of Colorado Museum of Natural History.

Figure 73. The handstone (UCM 05033) has signs of wear and supports the idea the piece was used to process material. Copyright University of Colorado Museum of Natural History.

Figure 74. Featured above is the largest digging stick (UCM 05985) from Mantle's Cave. The implement would have been used to help prepare fields for cultigens. Copyright University of Colorado Museum of Natural History.

Figure 75. Three burned and one unburned deer bone fragment (UCM 05864c). The bones were recovered on the surface of the cave. Copyright University of Colorado Museum of Natural History.

Figure 76. Two big horn sheep bones (UCM 05869h). The bones were found at the rear of the cave. Copyright University of Colorado Museum of Natural History.

Figure 77. Three fish fragments (UCM 05865f-2) one of which are burned. With Mantle's Cave close proximity to the Yampa River, it is logical that fish would be a resource. Copyright University of Colorado Museum of Natural History.

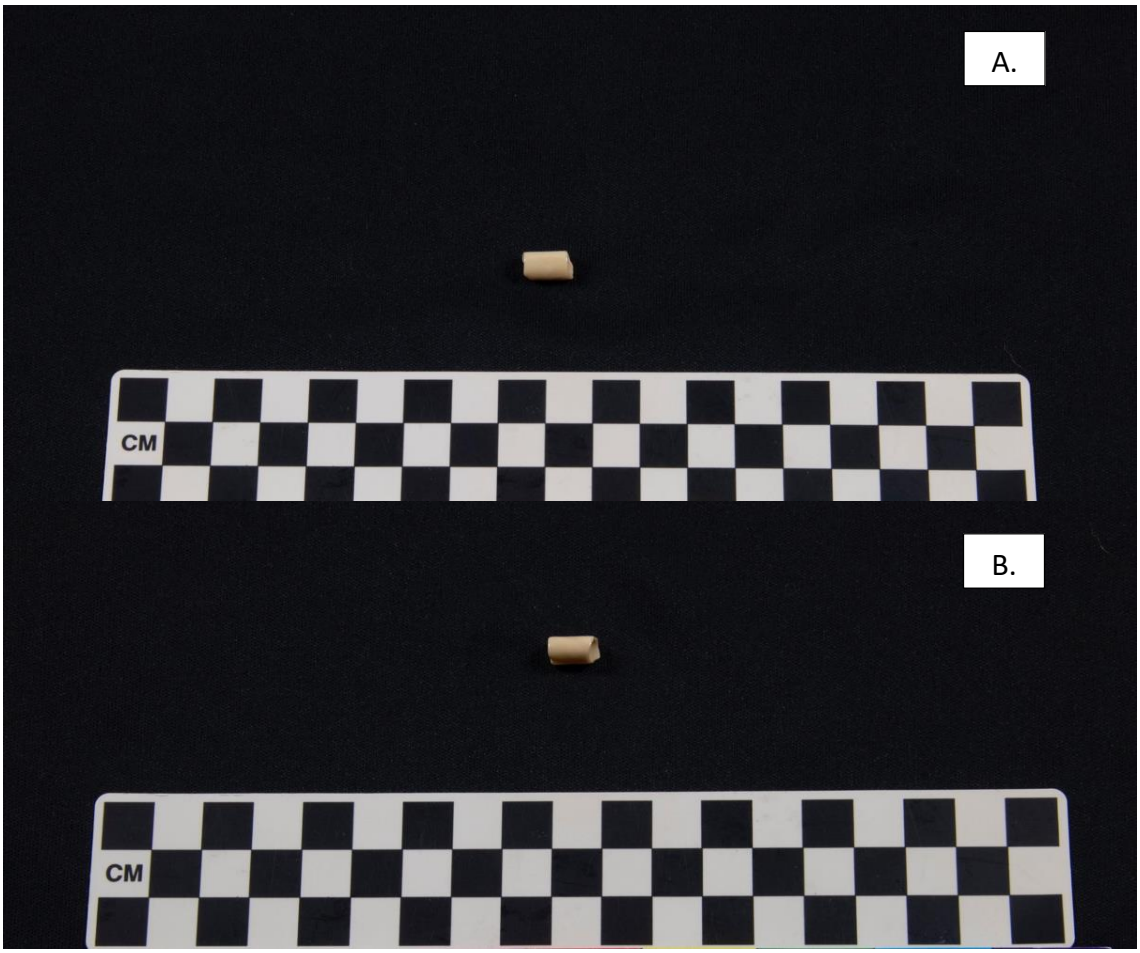


Figure 78. The images display two of the bone beads not found with the necklace (UCM 05976). Photo A. is of UCM 05845. Photo B is of UCM 05846. Copyright University of Colorado Museum of Natural History.

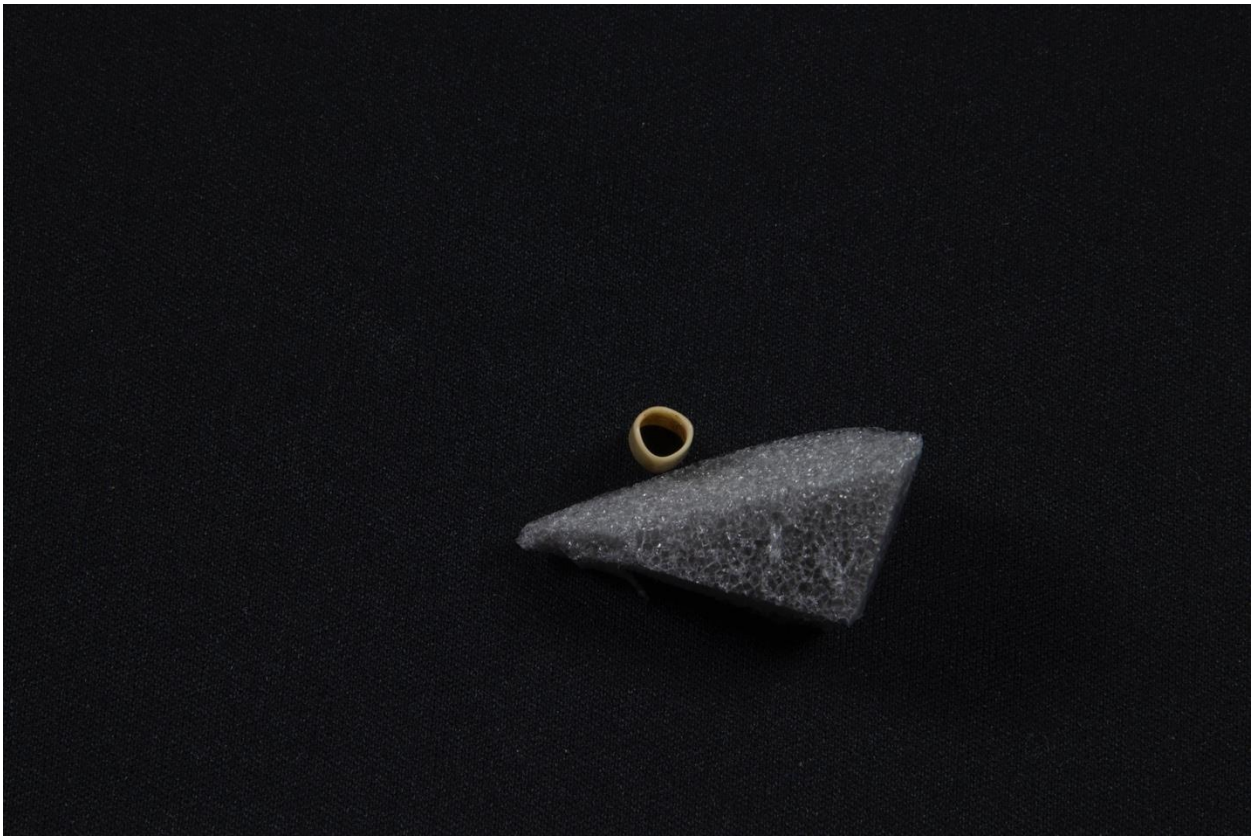


Figure 79. The photo shows a different perspective of UCM 05845. The bead is incredibly thin and delicate. Copyright University of Colorado Museum of Natural History.

Figure 80. A drill hafted to a thin wooden stick (UCM 05964). Copyright University of Colorado Museum of Natural History.

Figure 81. A pair of shaft abraders (UCM 05034). Wear is visible along the grove at the center of the abraders. Copyright University of Colorado Museum of Natural History.

Figure 82. The remnants of a mat (UCM 05902). Several quills were found mixed in the mat debris. Copyright University of Colorado Museum of Natural History.

Figure 83. A close up of a mat (UCM 05904) from the site. The cordage is visible from this angle. Copyright University of Colorado Museum of Natural History.

Figure 84. A variety of fragments (UCM 06076b) were removed from the carrying basket (UCM 06076a). The different samples show different components of the basket. Copyright University of Colorado Museum of Natural History.

Figure 85. The basketry core (UCM 06074) was a part of Cache 8. The basket was made in a single rod coiled style with additional vegetal stitching around the center of the basket. Copyright University of Colorado Museum of Natural History.

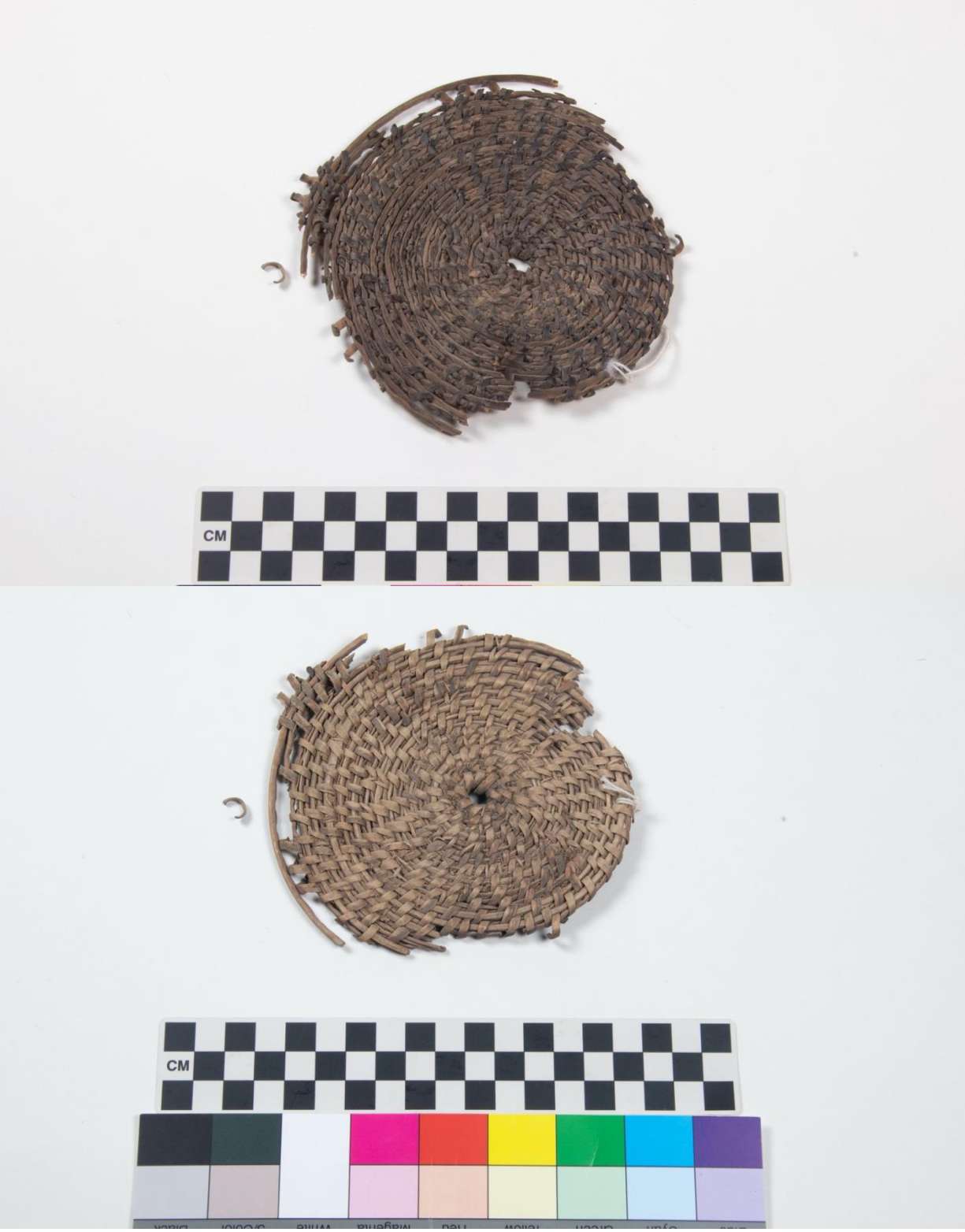


Figure 86. The image shows another basket core (UCM 06075). One side appears to have soot or tar present. Copyright University of Colorado Museum of Natural History.

Figure 87. A large reed mat (UCM 06004) from Cache 8. The bottom image provides a close up of the bottom section of the mat. Copyright University of Colorado Museum of Natural History.

Figure 88. Another reed mat (UCM 06005a) from Cache 8 is featured above. The bottom image provides a close up of the left side of the mat. Copyright University of Colorado Museum of Natural History.

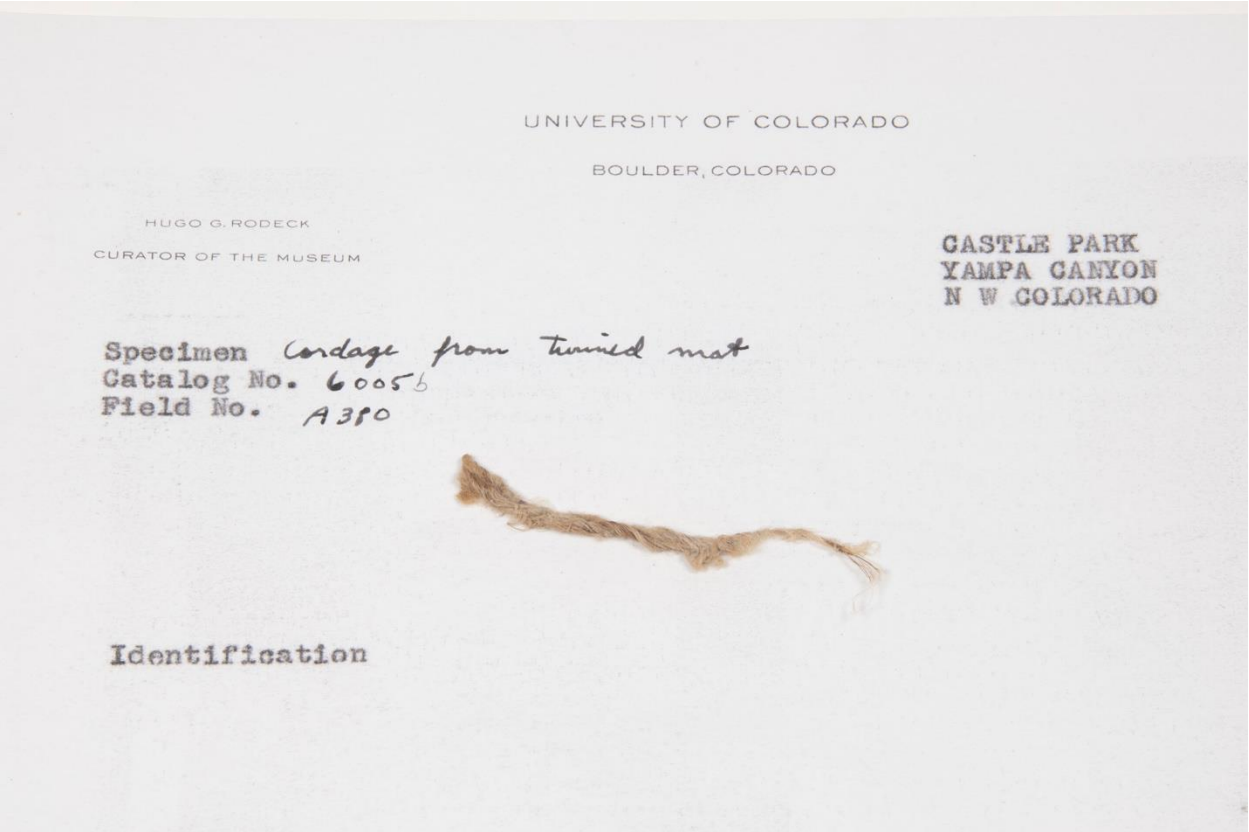


Figure 89. A fragment (UCM 06005b) was removed from the large mat (UCM 06005a). The cordage serves as a specimen reference. Copyright University of Colorado Museum of Natural History.

Figure 90. The three maize kernels (UCM 06227-1) and the burned wood fragments (UCM 06227-2) were recovered from the cist in unit X-1. Copyright University of Colorado Museum of Natural History.

Figure 91. Seventy-four seeds (UCM 06271) were recovered from the cist in unit X-1. Copyright University of Colorado Museum of Natural History.

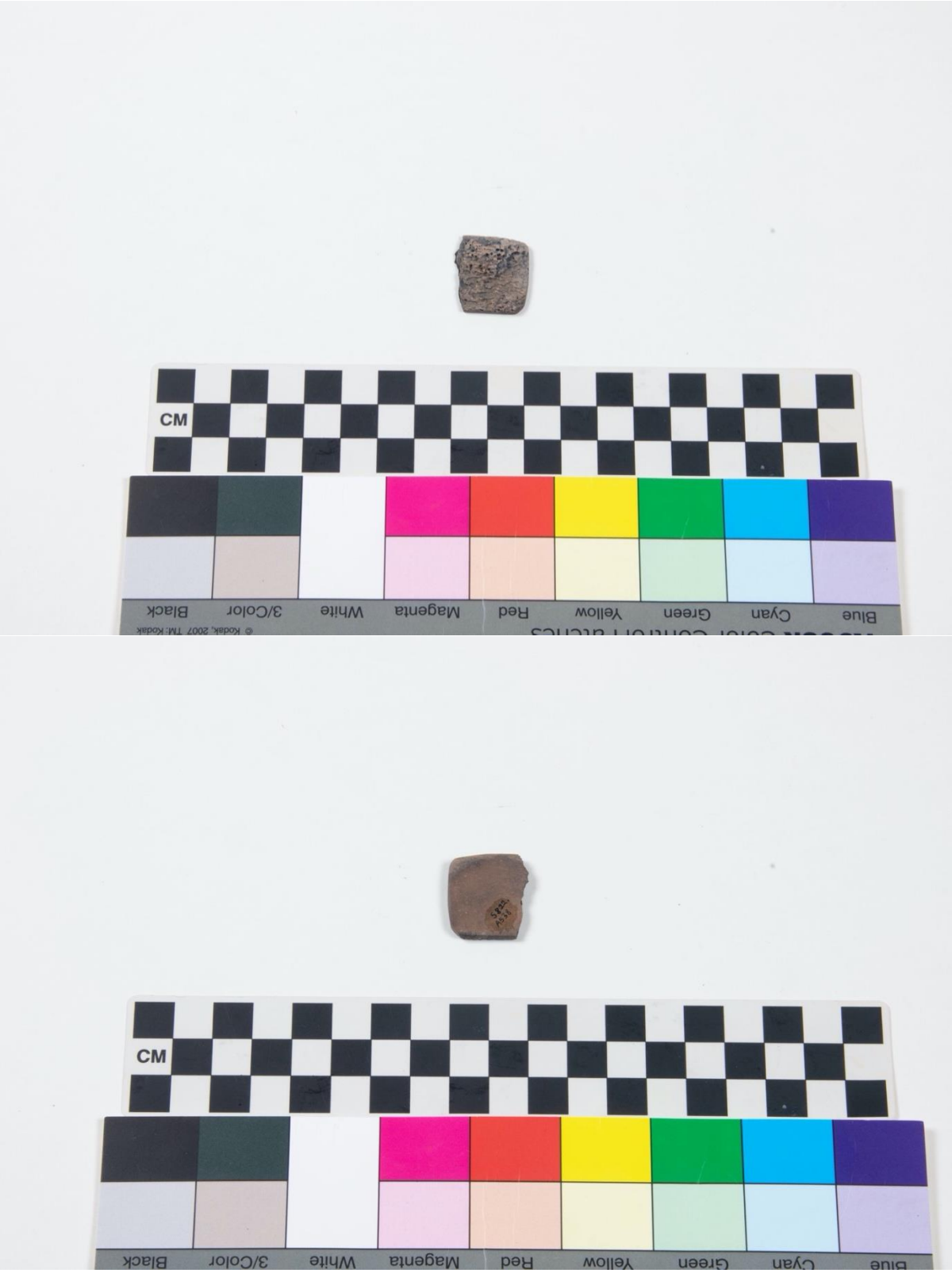


Figure 92. One of the burned dice (UCM 05822). The edges of the bones have been shaped. Copyright University of Colorado Museum of Natural History.

Figure 93. Another burned dice (UCM 05823). Copyright University of Colorado Museum of Natural History.

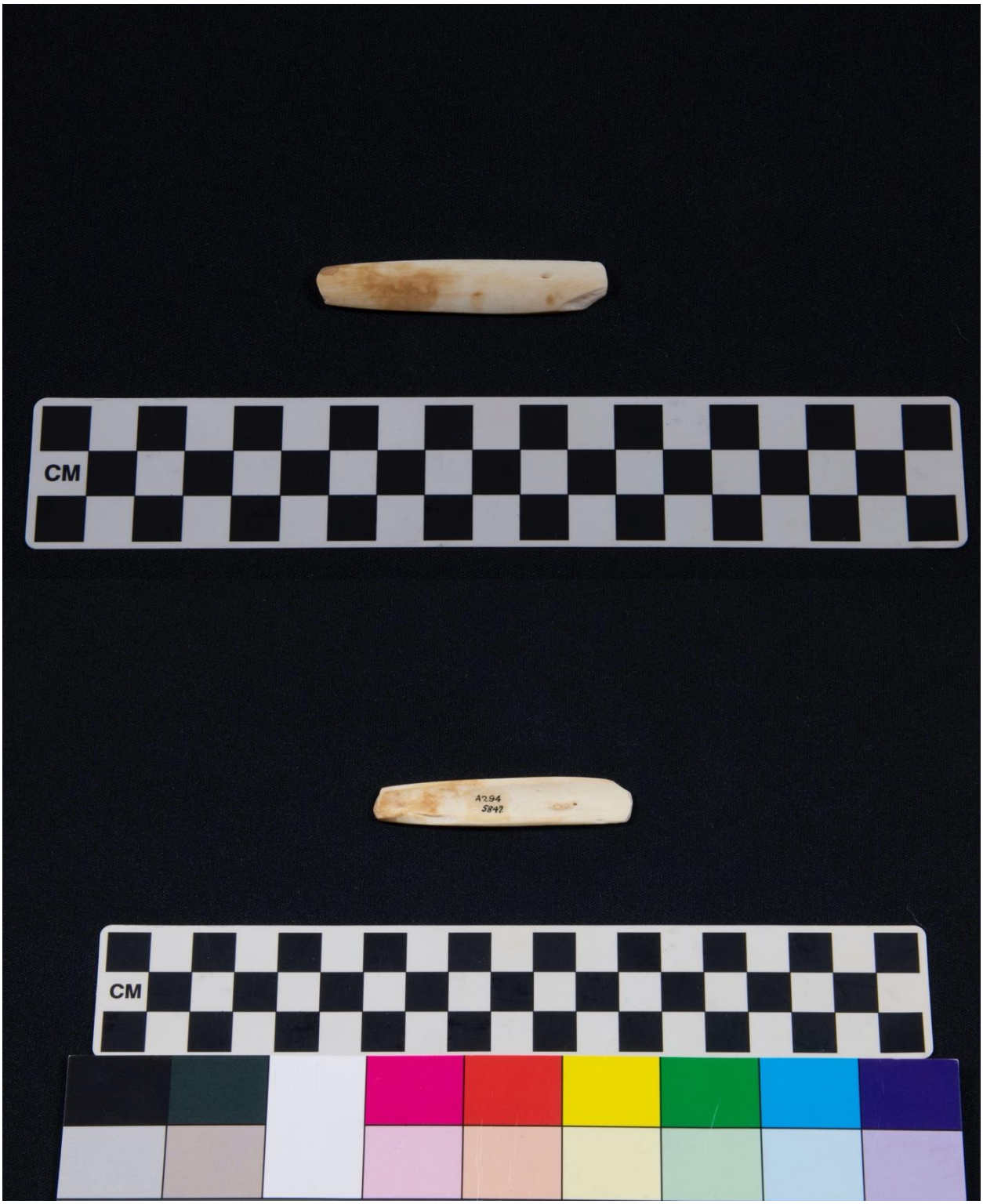


Figure 94. The gaming dice (UCM 05847) was found in Cave A. Copyright University of Colorado Museum of Natural History.

The piece of alabaster shown above was shaped into a gaming piece (UCM 05050). Copyright University of Colorado Museum of Natural History.

Figure 95. The large piece of clay, with the stick inserted, was used as storage cover for a cist. UCM 05051 has several indentations possibly from other sticks or shaping implements. Copyright University of Colorado Museum of Natural History.

Figure 96. Additional angles of the cist cover (UCM 05051). More texture on the clay is visible. Copyright University of Colorado Museum of Natural History.

Figure 97. Both pieces of clay worked as cist plus. Photograph A shows UCM 05052. Photograph B shows UCM 05053. Impressions of basketry can be seen on both pieces. Copyright University of Colorado Museum of Natural History.

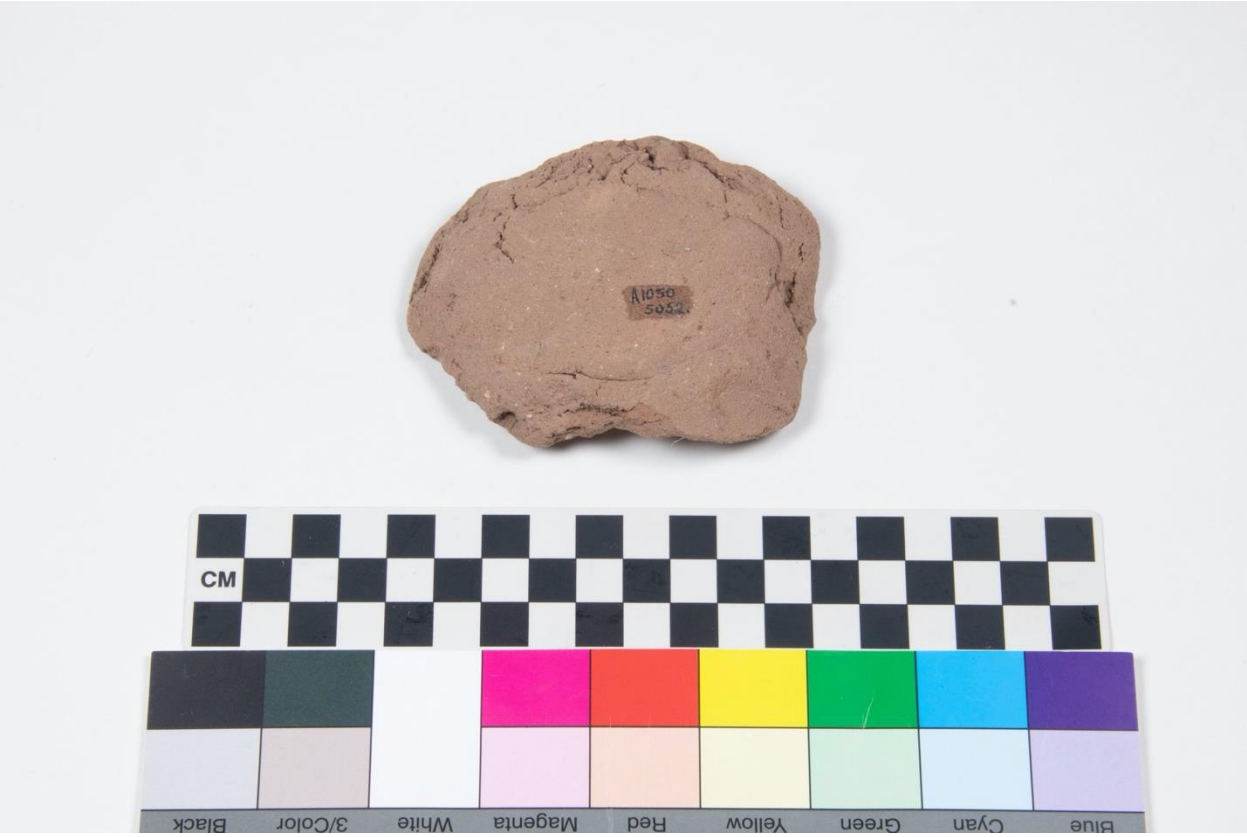


Figure 98. Another angle of the storage plug (UCM 05052). There is cracking along the edges of the clay. Copyright University of Colorado Museum of Natural History.

Figure 99. Another angle of the storage plug (UCM 05053). There are some small cracks in the clay. Copyright University of Colorado Museum of Natural History.

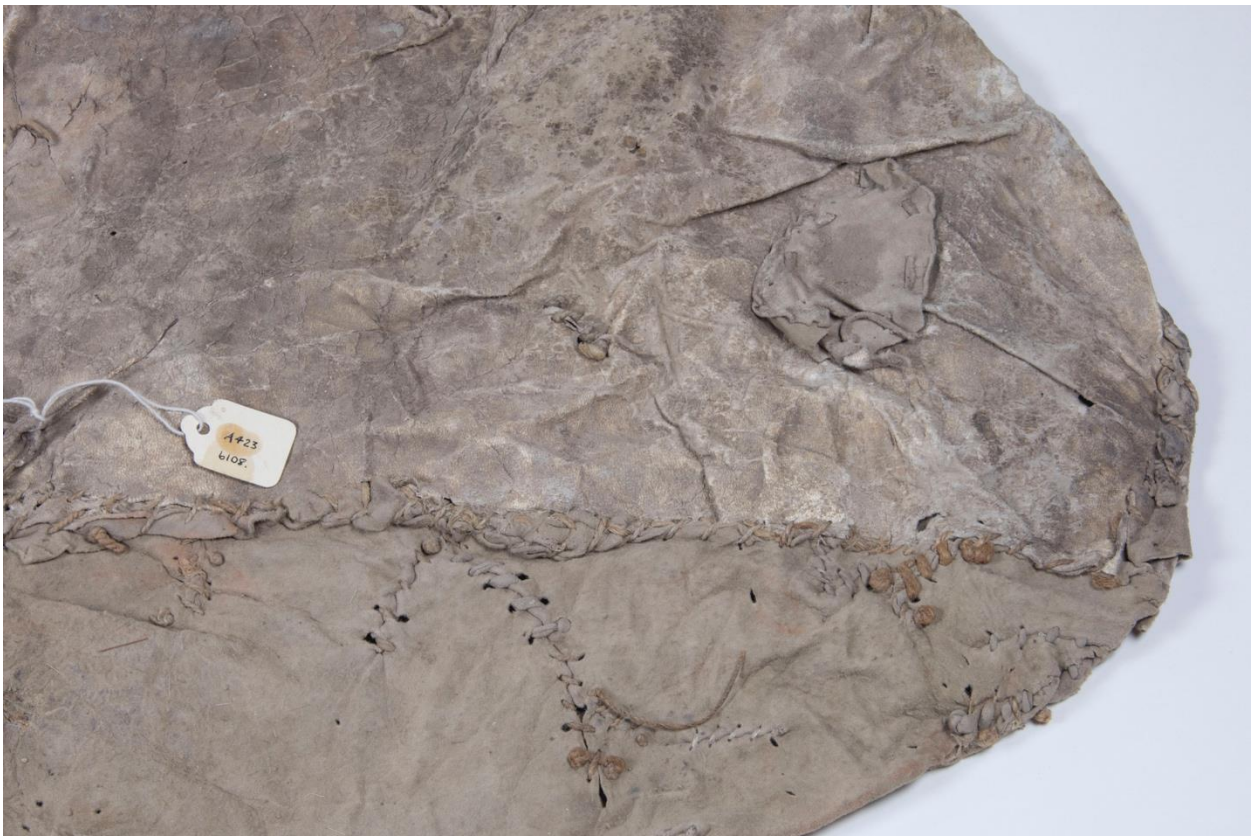


Figure 100. The bag (UCM 06108) is the only item in Cache 1A. A close-up of the bag shows different pieces of hide and a variety of stitching techniques. Copyright University of Colorado Museum of Natural History.

Figure 101. Ochre stains on the bag (UCM 06108) from Cache 1A are visible. Different stitching techniques are also showcased on this portion of the bag. Copyright University of Colorado Museum of Natural History.

Figure 102. The globular basket (UCM 05957) was found by Lee and Jones. The bag and its contents were later labeled Cache 2. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Figure 103. The fishhooks (UCM 05960) from Cache 2. The fishhooks are small, finely crafted items. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Figure 104. Another perspective of the fishhooks (UCM 05960) from Cache 2. The fishhooks are small, finely crafted items. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Figure 105. Four peg snares (UCM 05947) from Cache 2. The second photo provides a close up of one snare. Copyright University of Colorado Museum of Natural History.

Figure 106. One of the game snare bundles (UCM 05959) from Cache 2. Copyright University of Colorado Museum of Natural History.

Figure 107. Another game snare bundle (UCM 05961) from Cache 2. Copyright University of Colorado Museum of Natural History.

Figure 108. A third game snare bundle (UCM 05962) from Cache 2. Copyright University of Colorado Museum of Natural History.

Figure 109. The net bag (UCM 05948a) from Cache 2 is shown here. The net was stretched out to show the cordage pattern. Copyright University of Colorado Museum of Natural History.

Figure 110. The net bag (UCM 05948a) from Cache 2 is curled up in this photograph. Copyright University of Colorado Museum of Natural History.

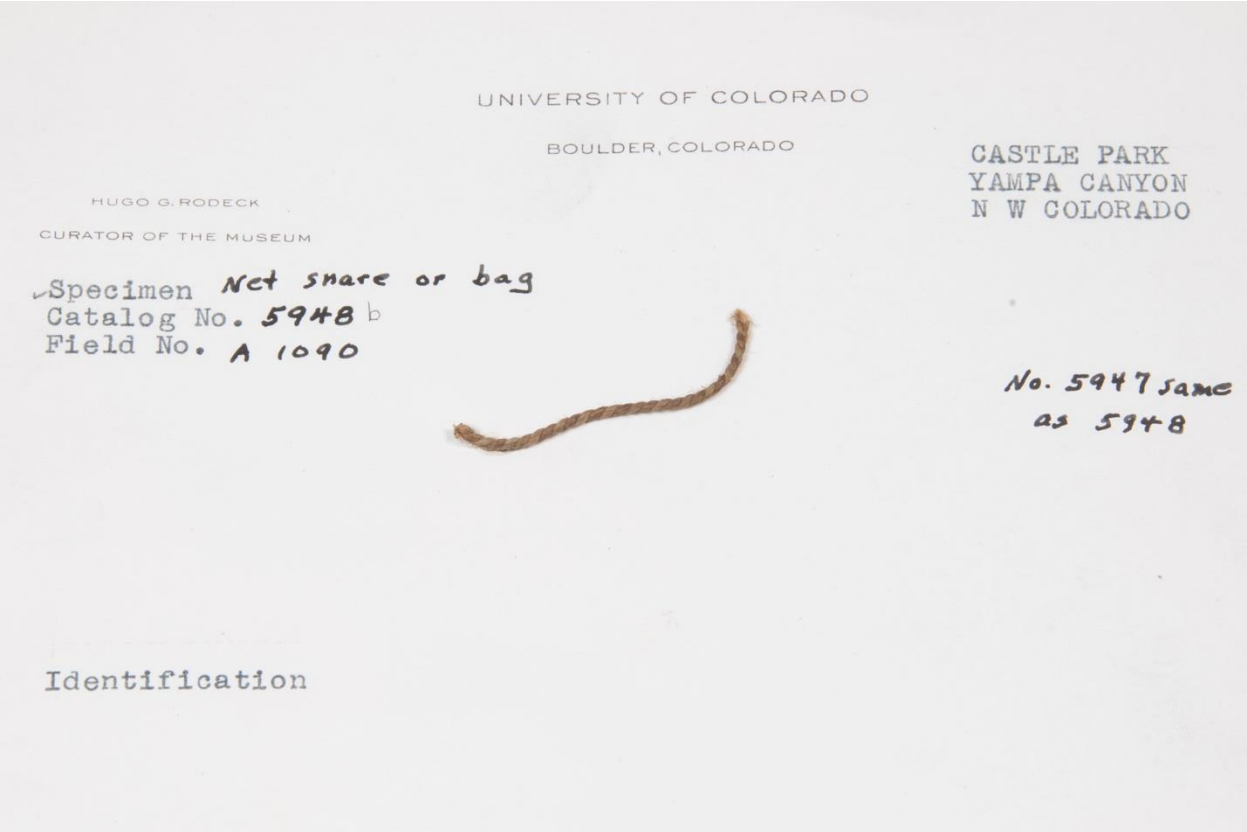


Figure 111. A fragment (UCM 05948b) from the net bag (UCM 05948a) from Cache 2 is featured here. This sample was taken as a reference specimen. Copyright University of Colorado Museum of Natural History.

Figure 112. The grass was held together by a cordage net. The net bag with grass lining (UCM 06170) held the items in Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 113. The two notched deer ribs from Cache 6 are shown here. Photograph A shows UCM 06166. Photograph B features UCM 06167. Copyright University of Colorado Museum of Natural History.

Figure 114. The modified scapula (UCM 06168) is one of the tools from Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 115. The sheep horn wrench (UCM 06169) is one of the tools from Cache 6. The hole would have been used to help straighten arrow shafts. Rodent predation is visible on the tip of the horn. Copyright University of Colorado Museum of Natural History.

Figure 116. The sheep horn wrench (UCM 06169) is one of the tools from Cache 6. The hole would have been used to help straighten arrow shafts. Rodent predation is visible on the tip of the horn. Copyright University of Colorado Museum of Natural History.

Figure 117. A piece of hide (UCM 06164) from Cache 6 is shown here. The item could have been used as a 'flaker's apron' helping the user to knapp tools. Copyright University of Colorado Museum of Natural History.

Figure 118. A piece of hide (UCM 06165) from Cache 6 is shown here. The item could have been used as a 'flaker's apron' helping the user to knapp tools. Copyright University of Colorado Museum of Natural History.

Figure 119. Three quill fragments (UCM 06154) from Cache 6. Evidence of predation is visible. Copyright University of Colorado Museum of Natural History.

Figure 120. Squash fragments (UCM 05901) from the site. Copyright University of Colorado Museum of Natural History.

Figure 121. One of the smaller maize cob fragments (UCM 06236) from the site. The rich golden kernels are still attached to the cob. Copyright University of Colorado Museum of Natural History.

Figure 122. The pair of sandals (UCM 06186 and 06187). UCM 06186 is shown on the right and UCM 06187 was placed on the left. Copyright University of Colorado Museum of Natural History.

Figure 123. The two images show one of the sandals, UCM 06186, from Mantle's Cave. Copyright University of Colorado Museum of Natural History.

Figure 124. The two images show one of the sandals, UCM 06187, from Mantle's Cave. Copyright University of Colorado Museum of Natural History.

Figure 125. A lone shoe (UCM 06136) recovered near the other sandals (UCM 06186 and 06187). Copyright University of Colorado Museum of Natural History.

Figure 126. One sandal, UCM 06136, from Mantle's Cave. Details on the hide are visible as well as the cordage holding the back of the sandal together. Copyright University of Colorado Museum of Natural History.

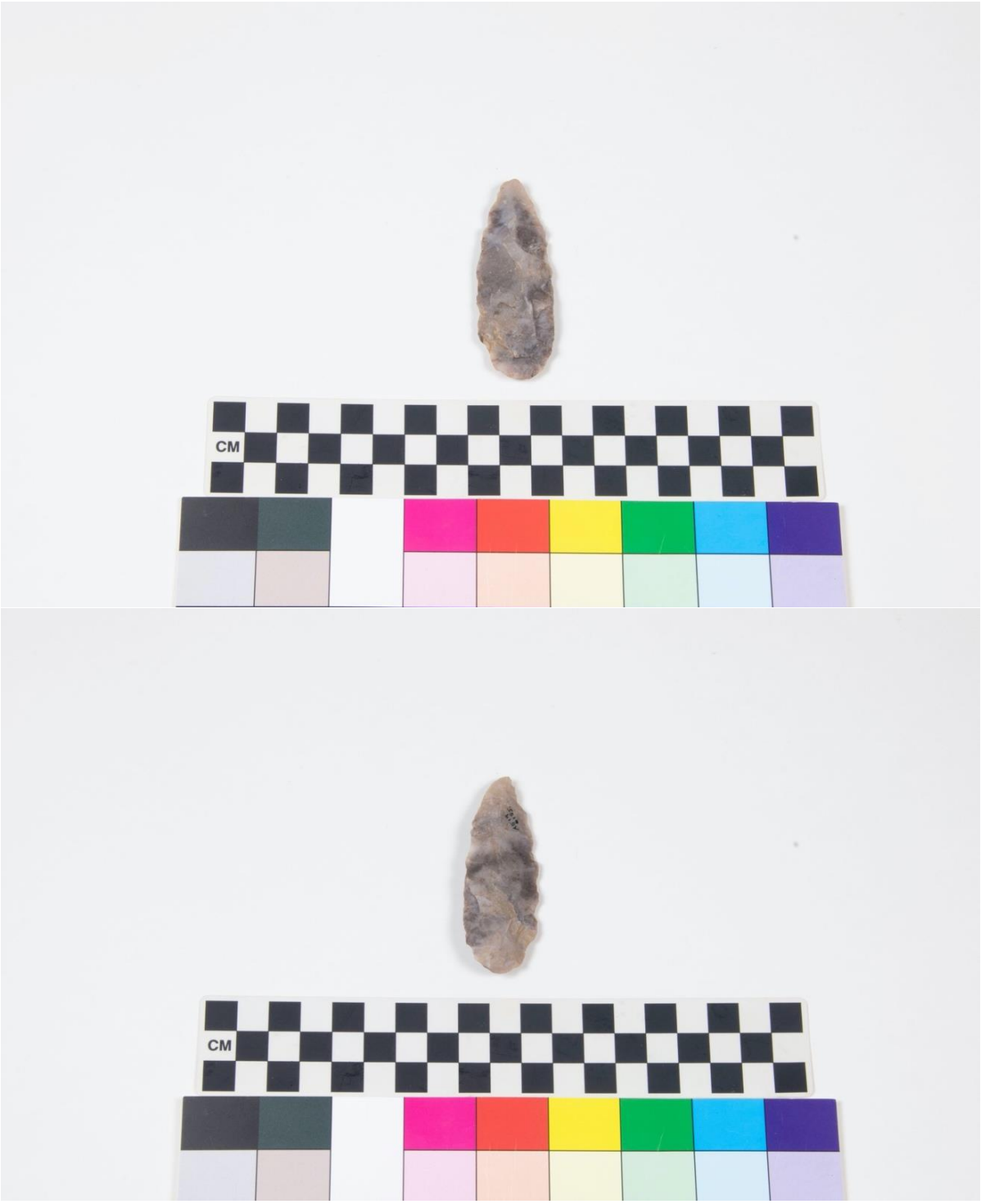


Figure 127. Biface (UCM 06155) from Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 128. Biface (UCM 06156) from Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 129. Biface (UCM 06157) from Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 130. Biface (UCM 06158) from Cache 6. Copyright University of Colorado Museum of Natural History.

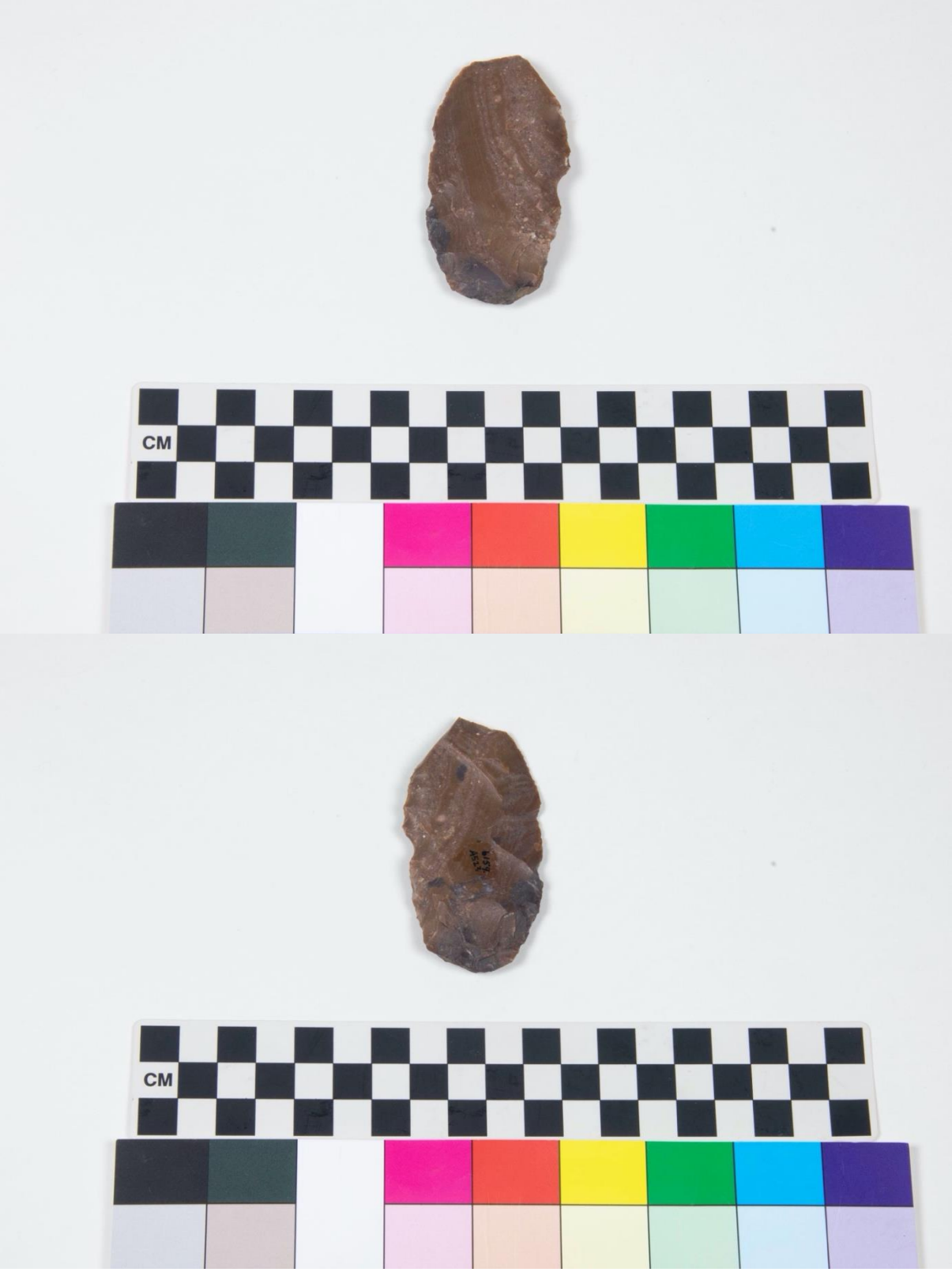


Figure 131. Biface (UCM 06159) from Cache 6. Copyright University of Colorado Museum of Natural History.

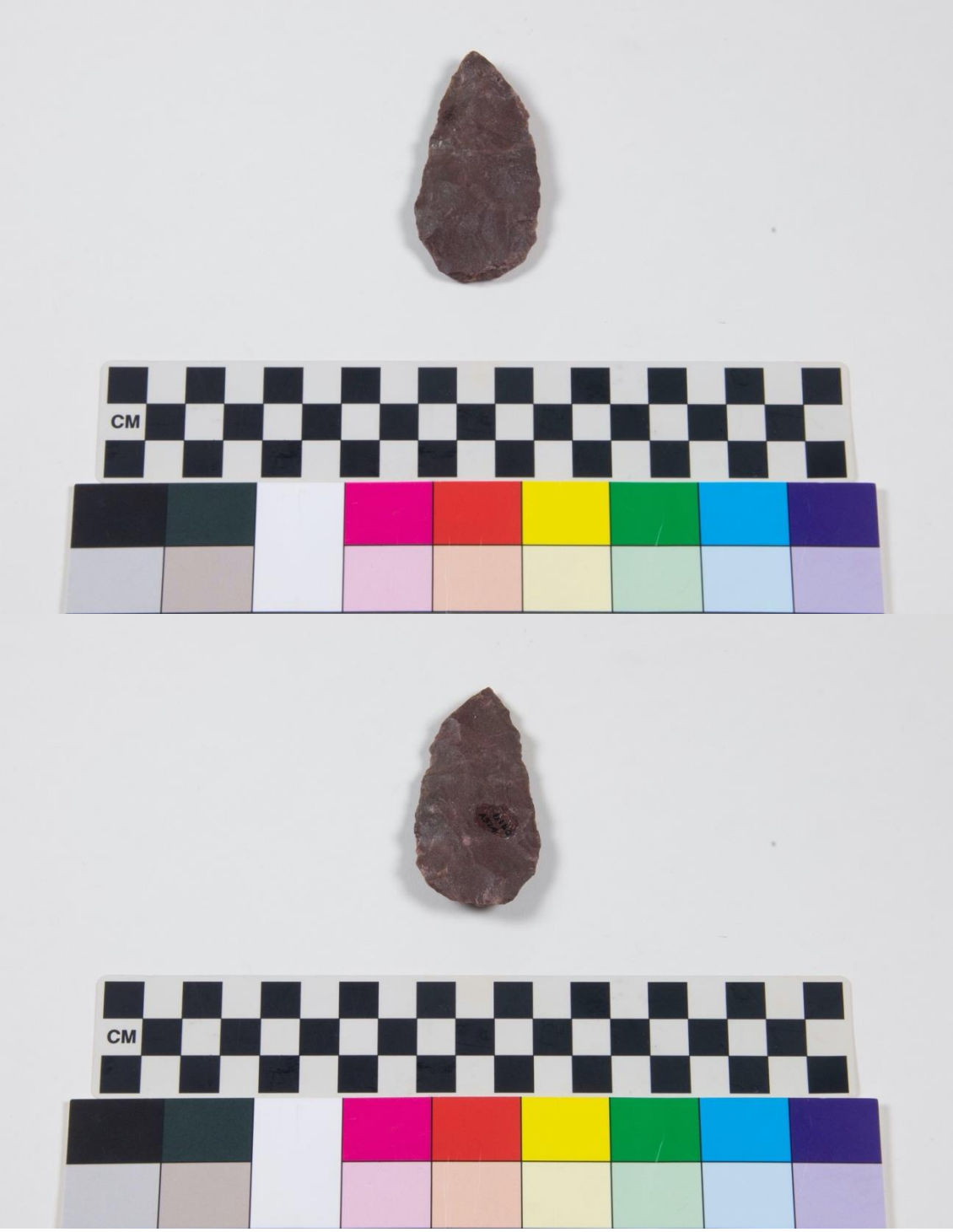


Figure 132. Biface (UCM 06160) from Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 133. Biface (UCM 06161) from Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 134. Worked flake (UCM 06162) from Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 135. Bone awl (UCM 06163) form Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 136. Additional perspectives of the notched deer rib, UCM 06166, from Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 137. Additional perspectives of the notched deer rib, UCM 06167, from Cache 6. Copyright University of Colorado Museum of Natural History.

Figure 138. The three feather bundles from Cache 1. Photograph A highlights the iridescent magpie feathers of UCM 06182. The second feather bundle is UCM 06183, a collection of hawk feathers. The third feather bundle is UCM 06184, a collection of eagle feathers. Copyright University of Colorado Museum of Natural History.

Figure 139. The maize kernel (UCM 06232-1) was found in Cache 1. Copyright University of Colorado Museum of Natural History.

Figure 140. Cache 1 contained a singular bean (UCM 06232-2). Copyright University of Colorado Museum of Natural History.

Figure 141. The hafted knife (UCM 05990) from Mantle's Cave. The knife was inserted into a wooden handle and willow was wrapped around the wood to secure the knife along with some pine gum as an adhesive. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Figure 142. A large quartzite knife (UCM 6189). Copyright University of Colorado Museum of Natural History.

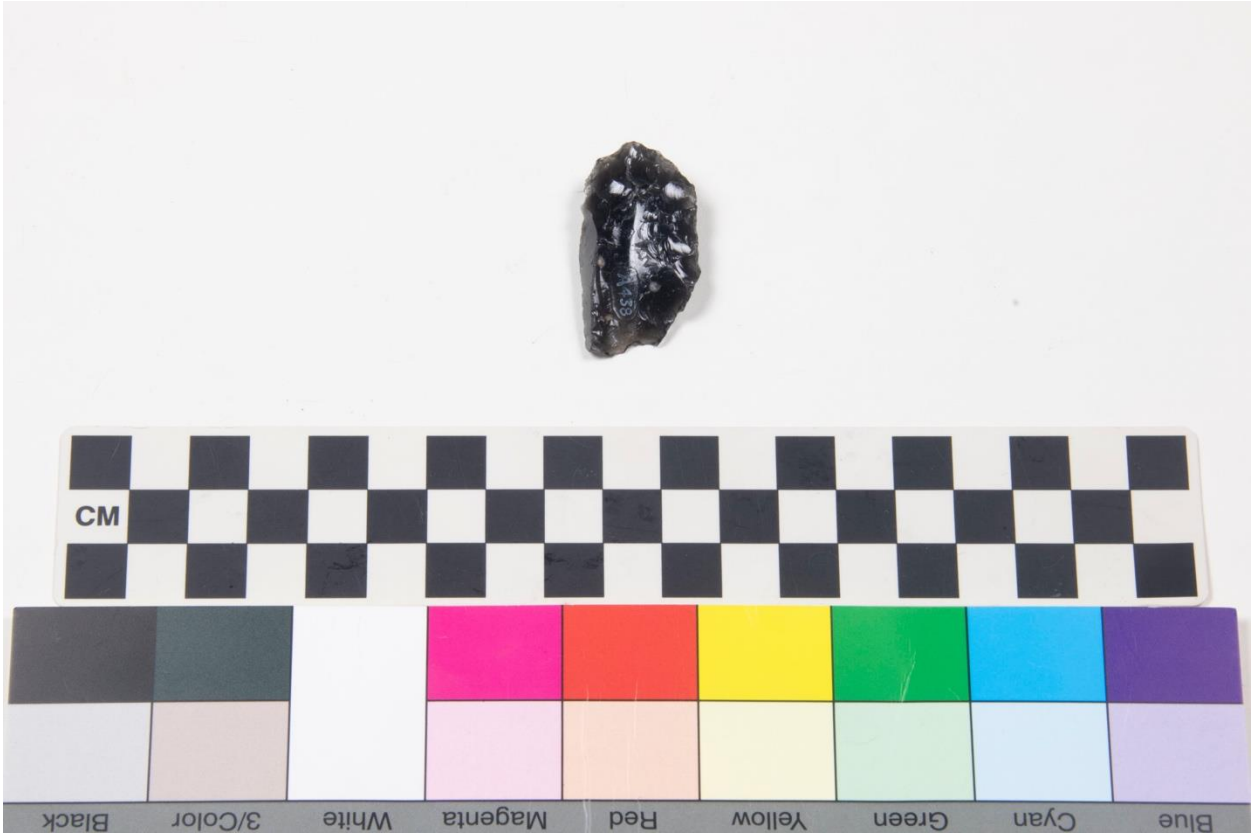


Figure 143. The obsidian flake (UCM TIN-0594) from Cache 1. Copyright University of Colorado Museum of Natural History.

Figure 144. One of the weights (UCM 1939.01.001) from the site. This weight still had the cordage attached. The second angle shows the side of the object where the cordage was threaded through. Copyright University of Colorado Museum of Natural History.

Figure 145. One of the weights (UCM 1939.01.002) from the site. The additional angles show the side of the object where cordage could be threaded through. Copyright University of Colorado Museum of Natural History.

Figure 146. Two modified horns from Cache 1. Photograph A shows UCM 06180 and Photograph B depicts UCM 06185. Copyright University of Colorado Museum of Natural History.

Figure 147. A leather strap (UCM 06181) from Cache 1. The material is still pliable. Copyright University of Colorado Museum of Natural History.

Figure 148. A tied strand of sinew (UCM 06179) from Cache 1. A piece of sinew was tied around the other strands to keep them together. Copyright University of Colorado Museum of Natural History.

Figure 149. A section of twisted bark (UCM 06014) from Cache 1 is shown above. Copyright University of Colorado Museum of Natural History.

Figure 150. Additional views of the knife, UCM 05666, from Cache 1. Copyright University of Colorado Museum of Natural History.

Figure 151. Details of the bag, UCM 06177, from Cache 1. Stiches, a reed, and hide modification are visible. Copyright University of Colorado Museum of Natural History.

Figure 152. An antler baton, UCM 06180, from Cache 1. Copyright University of Colorado Museum of Natural History.

Figure 153. A bundle of iridescent feathers, UCM 06182, from Cache 1. The rich hues of the feathers are shown here. Copyright University of Colorado Museum of Natural History.

Figure 154. A bundle of feathers, UCM 06183, from Cache 1. A strand was used to group the feathers. Copyright University of Colorado Museum of Natural History.

Figure 155. A bundle of feathers, UCM 06184, from Cache 1. The feathers were tied together. Copyright University of Colorado Museum of Natural History.

Figure 156. Perspectives of the antler baton, UCM 06185, from Cache 1 shows the wear of the antler. Copyright University of Colorado Museum of Natural History.

Figure 157. The deerskin head pelt (UCM 06102) from Cache 3. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Figure 158. An additional perspective on the deerskin head pelt (UCM 06102) from Cache 3. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Figure 159. A close up of the right ear of the deerskin head pelt (UCM 06102) provides a looked at the detailed structure of the item. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Figure 160. A close up of the left ear of the deerskin head pelt (UCM 06102) provides a looked at the detailed structure of the item. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Figure 161. The pair of moccasins (UCM 06193) found in Cache 3. The shoes are filled with grass, helping the moccasins keeping their shape. Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Figure 162. Another view of one moccasin (UCM 06193) from Cache 3. The grass stuffing is clearly visible from this angle. Copyright University of Colorado Museum of Natural History.

Figure 163. The fur and tassel (UCM 06103) from cache 5. The item has experienced some decay due to insect predation. Copyright University of Colorado Museum of Natural History.

Figure 164. The weasel with twine (UCM 06144) is the second piece of Cache 5. The weasel is still pliable. Copyright University of Colorado Museum of Natural History.

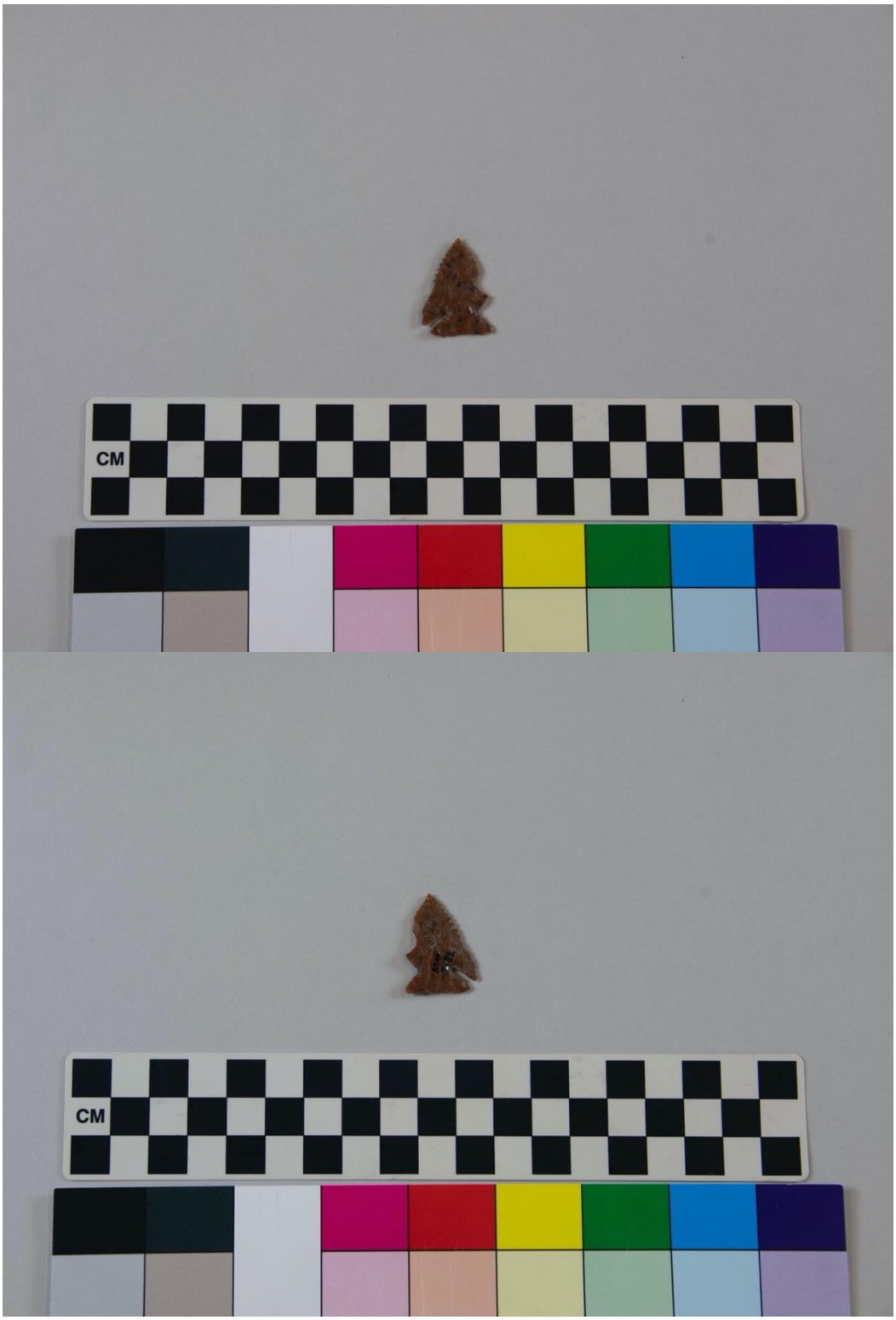


Figure 165. A projectile point (UCM 05183) that is similar to Elko Corner Notched points is shown above. Copyright University of Colorado Museum of Natural History.

Figure 166. Another projectile point (UCM 05549) from Mantle's Cave. The point is comparable to Elko Corner Notched points. Copyright University of Colorado Museum of Natural History.

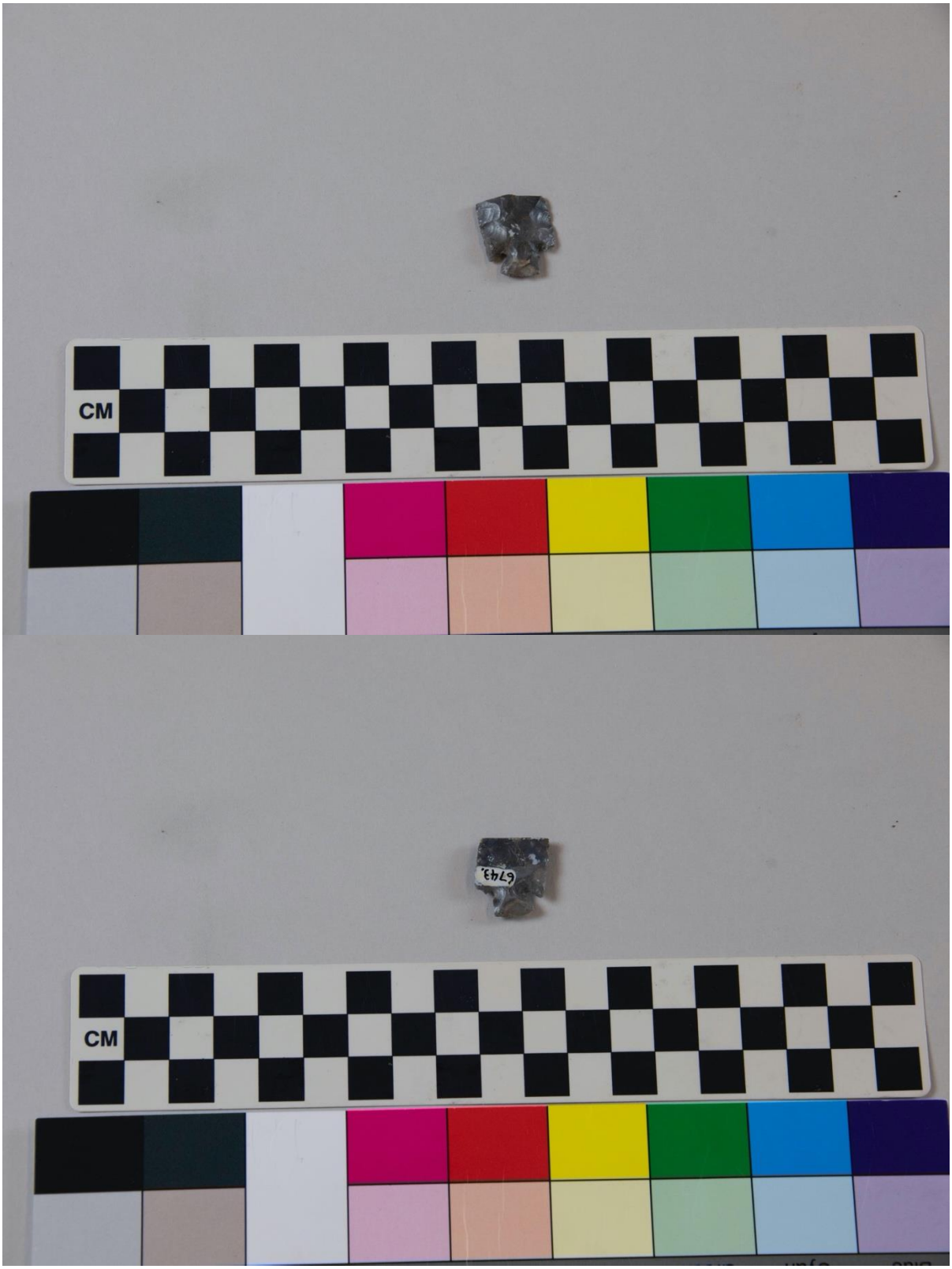


Figure 167. The snapped projectile point (UCM 06743) shown here is comparable to points from the Elko series. Copyright University of Colorado Museum of Natural History.

Figure 168. The stemmed projectile (UCM 06131q). Copyright University of Colorado Museum of Natural History.

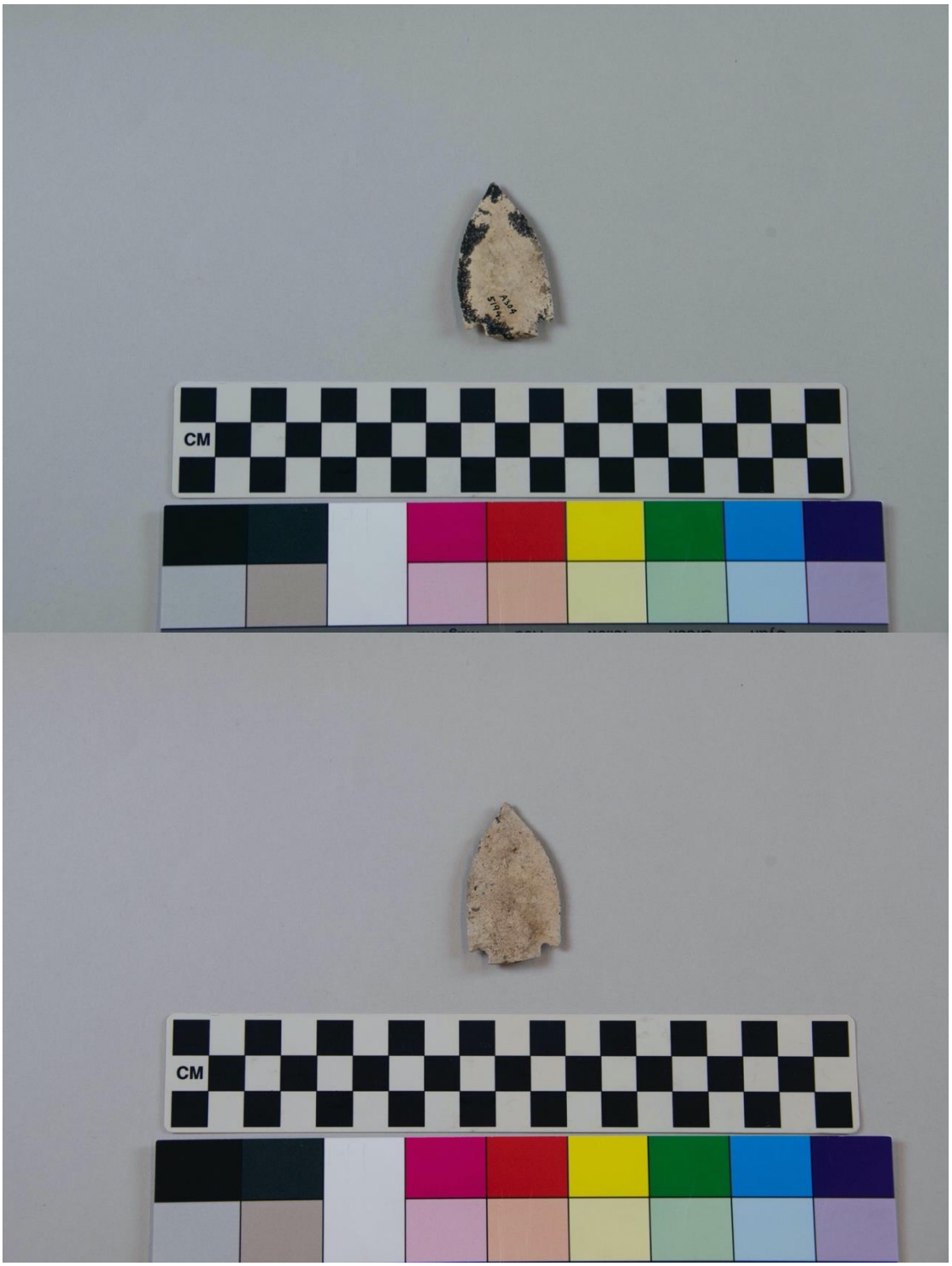


Figure 169. Another projectile point (UCM 05194) from the site. Copyright University of Colorado Museum of Natural History.

Figure 170. Maize fragments (UCM 06058a) recovered from units S-2 and T-2. Copyright University of Colorado Museum of Natural History.

Figure 171. Another angle of the basketry ladle (UCM 5943). Photo by Francois Gohier. Copyright University of Colorado Museum of Natural History.

Figure 172. Another view of the slate pieces (UCM 05057). The etchings are visible on both sides. They do not appear to form any distinct pattern. Copyright University of Colorado Museum of Natural History.

APPENDIX D: MAPS

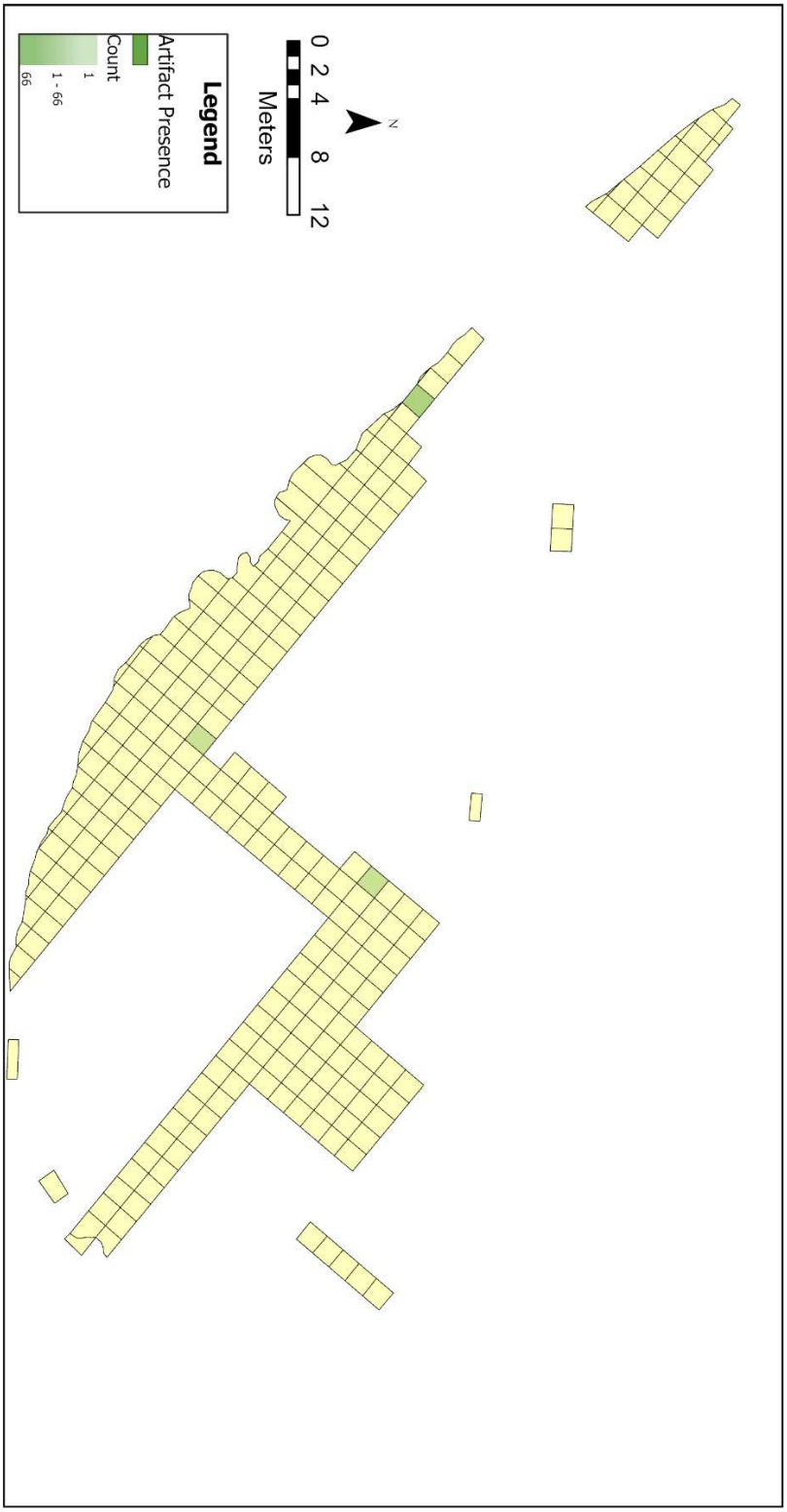


Figure 173. The map includes the locations of the coprolite samples recovered from Mantle's Cave.

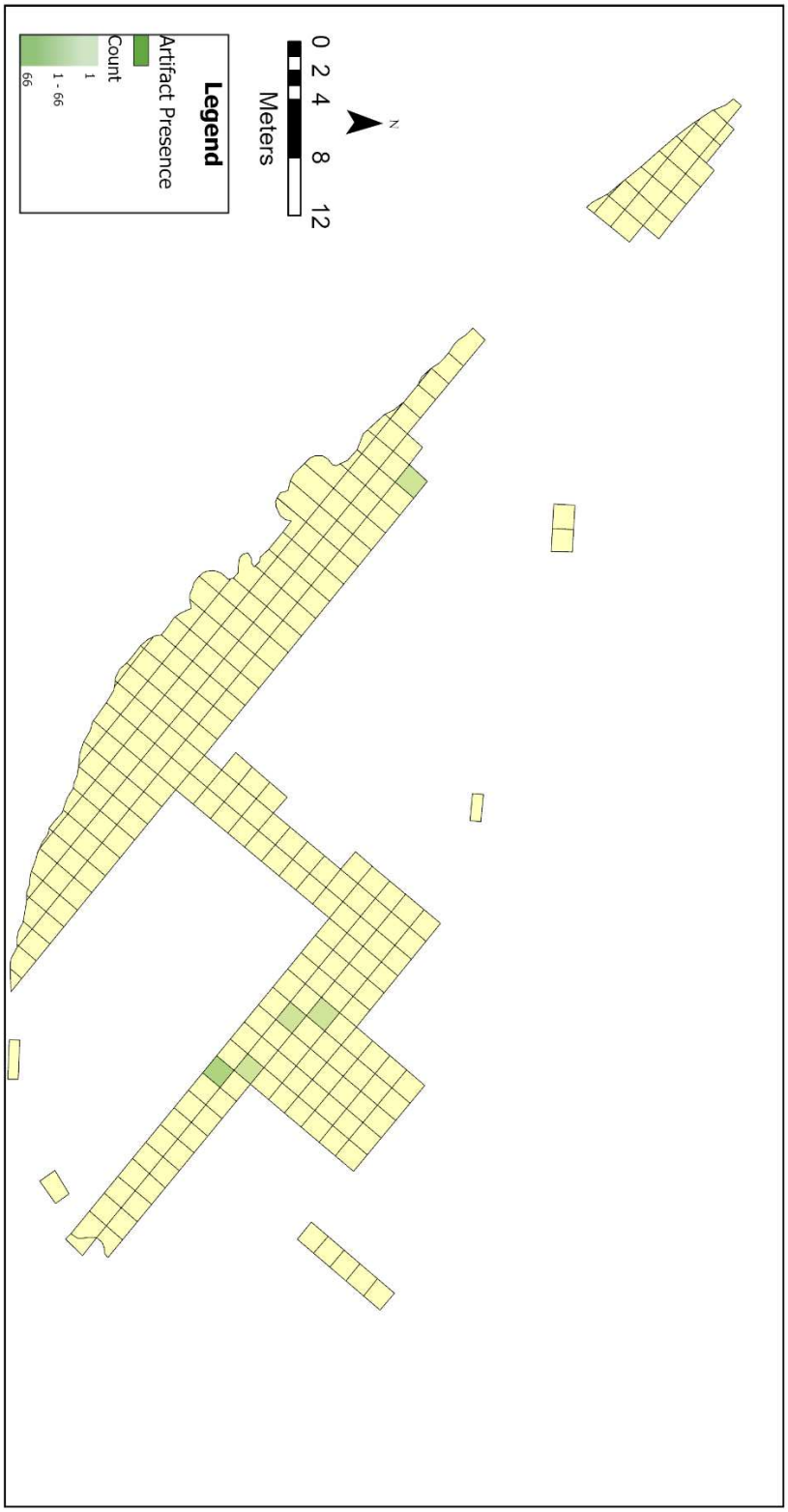


Figure 174. Gaming items made of stone and bone materials are reflected on the map above.

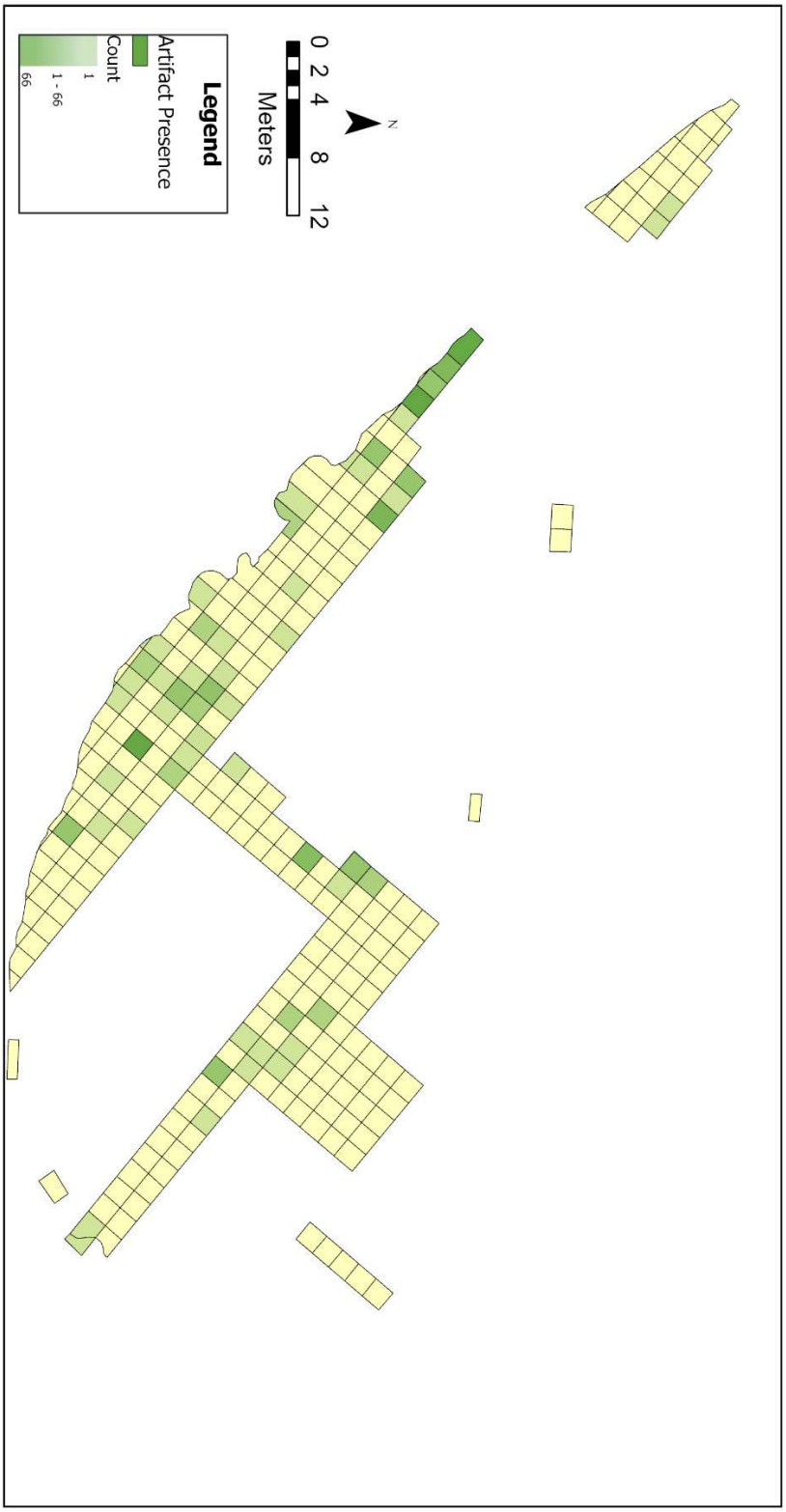


Figure 175. The units in green reflect the location of items affiliated with habitation.

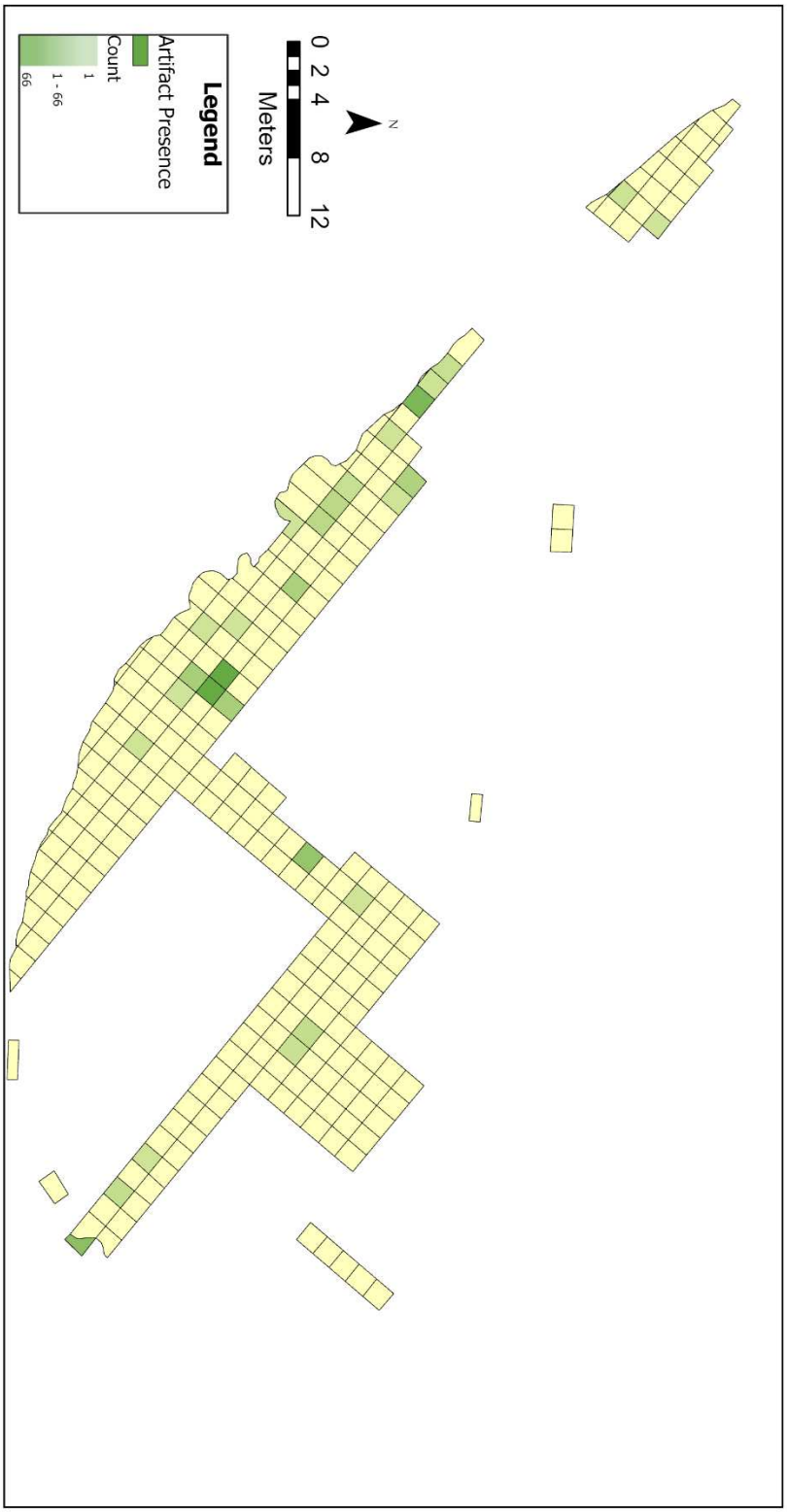


Figure 176. The location of foodstuffs, including maize and squash. The material recovered was found in storage features but also scattered on the cave floor.

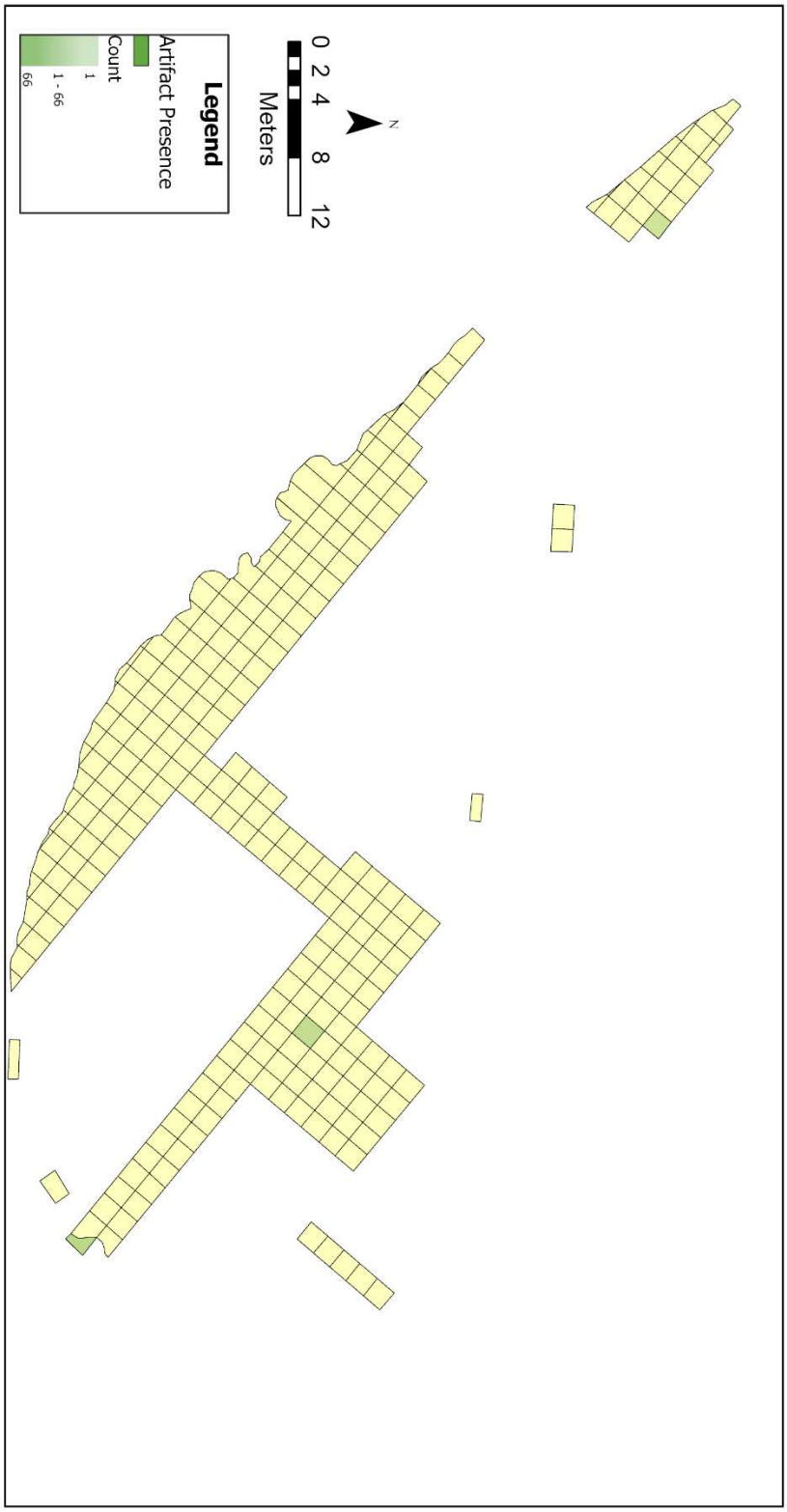


Figure 177. Only three units contained maize in storage features that could be mapped. Other features were occupied but their unit location was unclear.

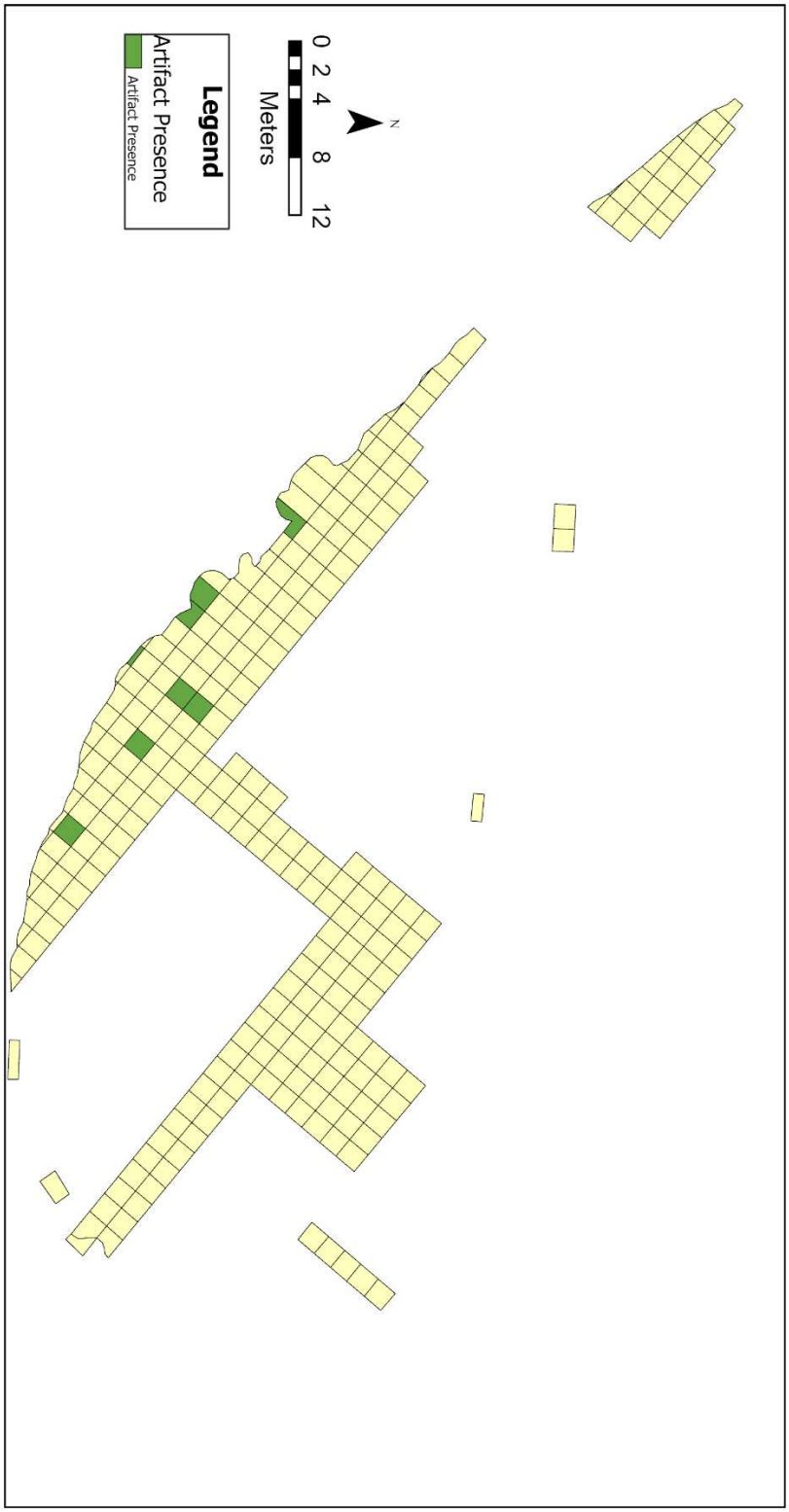


Figure 178. The locations of the caches are featured above. The only cache recovered prior to the establishment of the grid was Cache 2 which was likely found at the back of the cave. Caches were primarily found at the back of the cave, centered at the base of the excavation grid.

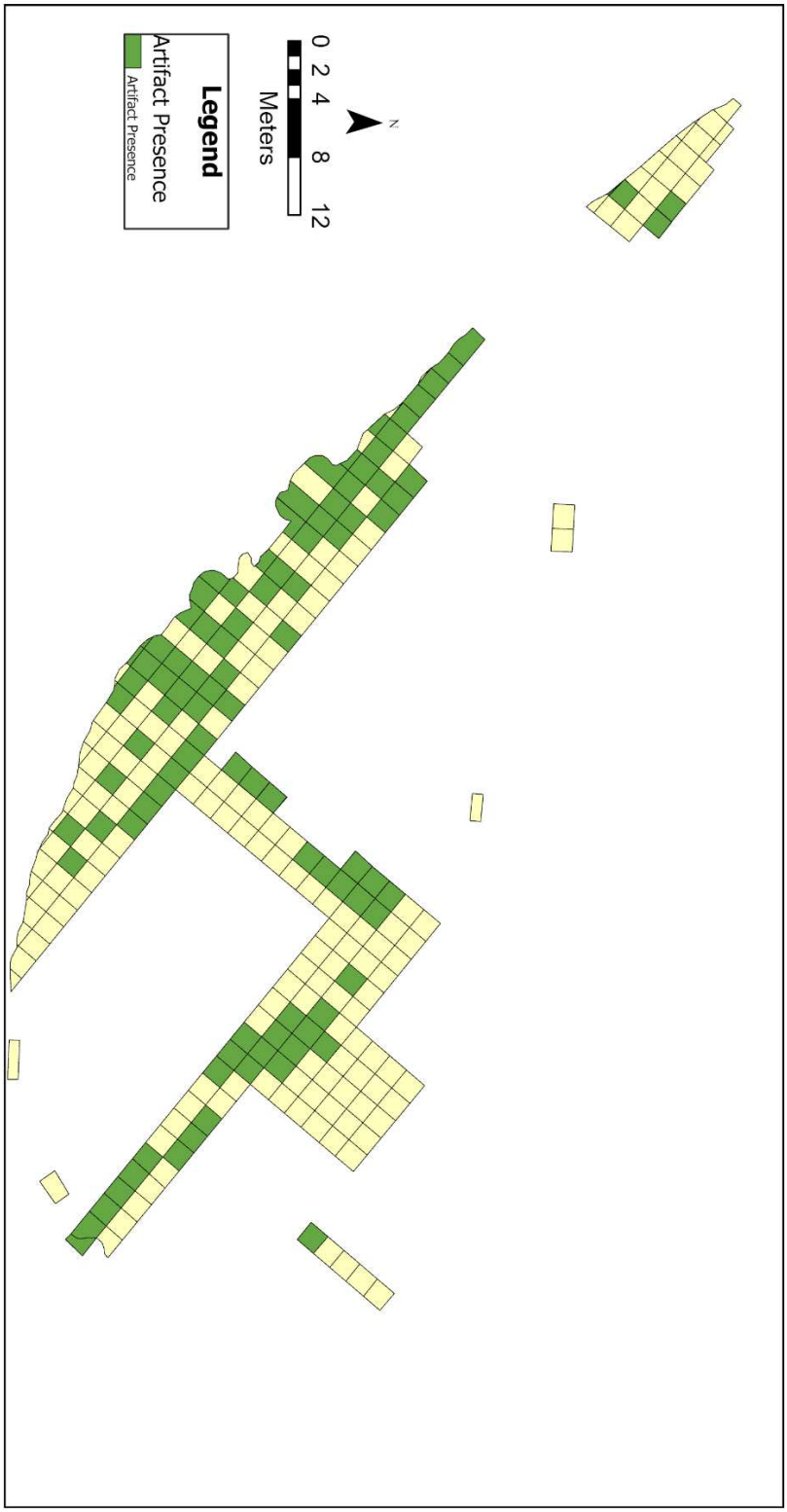


Figure 179. The map above highlights all known units that yielded artifacts.

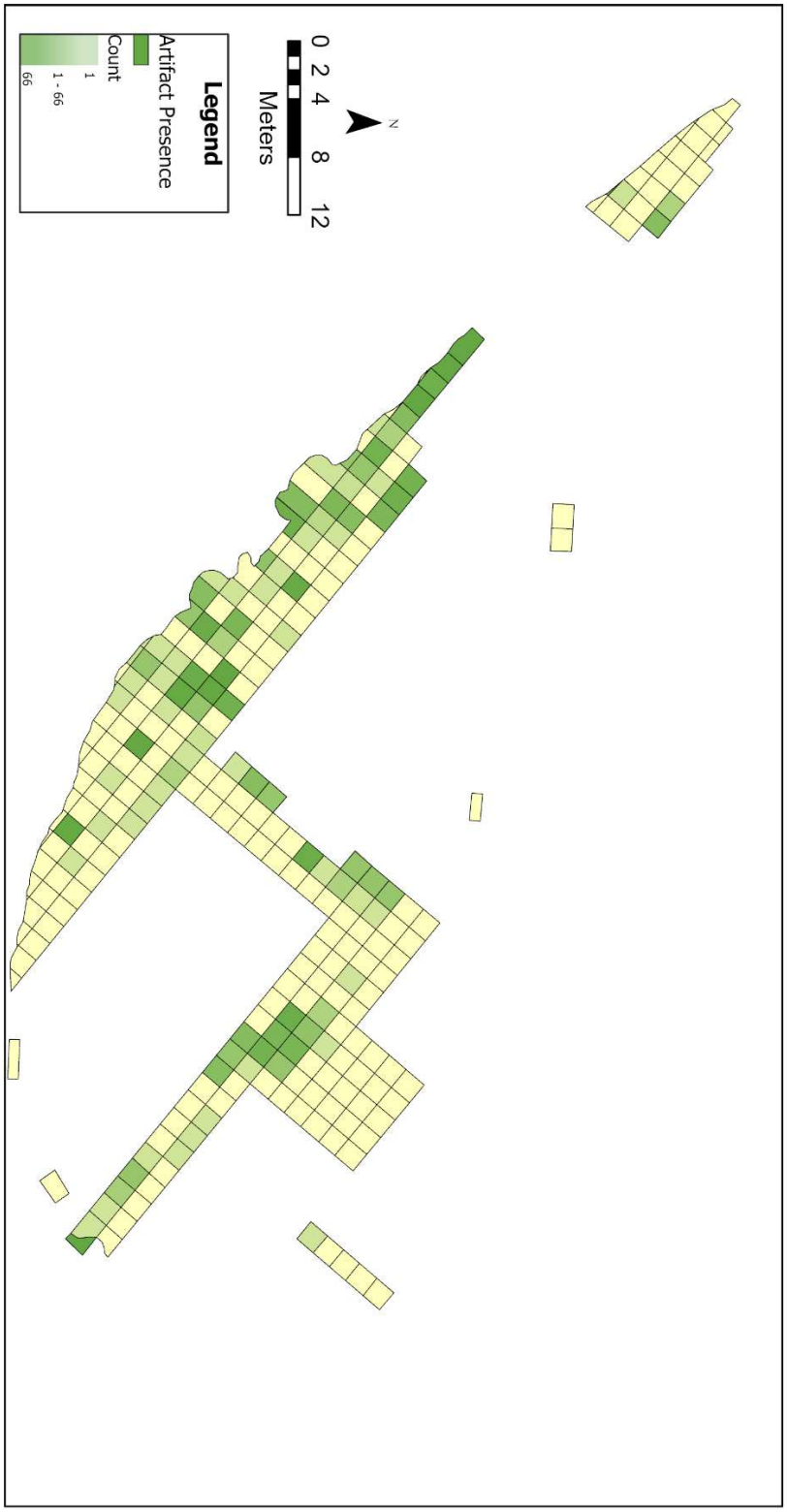


Figure 180. The map above highlights all known units that yielded artifacts. The color gradient reflects the dentary of artifacts per unit. The darker units reflect the areas with the densest concentration of material.

APPENDIX E: HISTORIC PHOTOGRAPHS

Figure 181. Image (D-4) from the 1939-1940 excavation of Mantle's Cave. "Second stage of excavation of section Q-02, Trench A, Mantle's Cave, Yampa canyon, showing large stone removed and decorated deer-head pelt cap, cat. no. A282, exposed, plus twigs of the couch. 2/20/40" (ARC.DNM04_004_005).

Figure 182. Image (C-5) from the 1939-1940 excavation of Mantle's Cave. "Showing sub-cave at rear of Mantle's Cave interior before excavation as seen from ruins of large masonry cist before excavation. February 19, 1940" (ARC.DNM04_004_004).

Figure 183. Image (G-7) from the 1939-1940 excavation of Mantle's Cave. "Pit in 'cave a', Mantle's Cave, as seen from above and slightly to north. March 15, 1940" (ARC.DNM04_004_008).

Figure 184. Image (L-12) from the 1939-1940 excavation of Mantle's Cave. "Showing masonry cist in section E-1, with Ed Lohr indicating imprint of the large carrying basket formerly on top. Mantle's Cave, Castle Park. May 27, 1940" (ARC.DNM04_004_013).

Figure 185. Image (B-1) from the 1939-1940 excavation of Mantle's Cave. "Mantles Cave. Showing strand of bone and seed beads, Field Catalog # A232 in Section D-1, west part, and C-1 east part, as reconstructed from notes of excavation" (ARC.DNM04_004_003).

Figure 186. Image (E-8) from the 1939-1940 excavation of Mantle's Cave. "Fur adornment, cat. no. A311, in situ as uncovered, sec. 02-Q, from north-east. March 1, 1940" (ARC.DNM04_004_006). The item featured in the photo is UCM 06103.

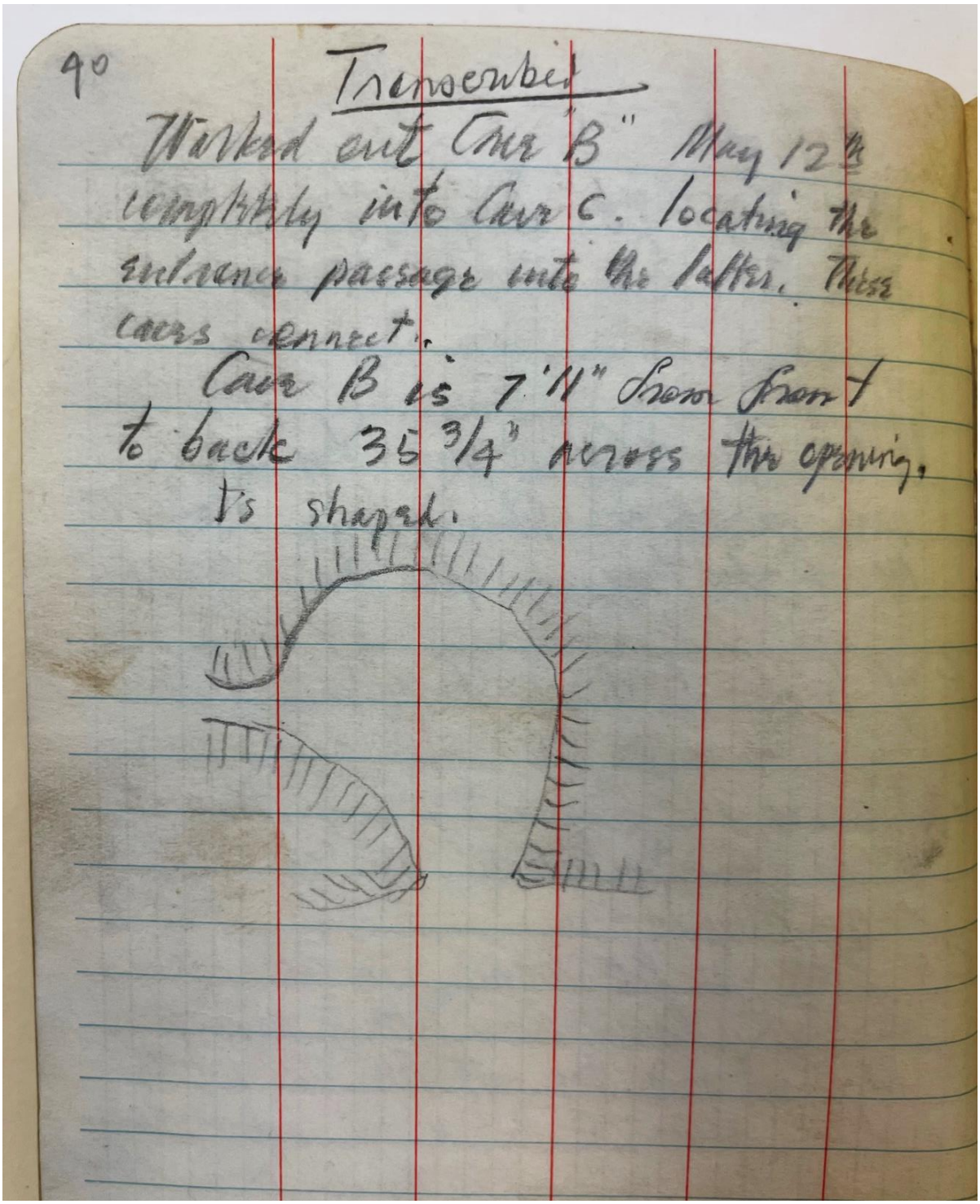
Figure 187. Image (E-3) from the 1939-1940 excavation of Mantle's Cave. "Showing blade cache before disturbance. Cat. nos. A332a-g. February 26, 1940. (As reconstructed)" (ARC.DNM04_004_006).

APPENDIX F: ARCHIVAL DOCUMENTS

Cedar bark couches, etc.:

The explanation of the cedar bark couches in Mantle's Cave issdiffficult.enWhat practical purposes these 'nests' of cedar bark might have had is not apparent from excavation. The first is the most obvious; that they were places were individuals slept regulargly or occassionally. This ezplanation has been put forward in the caves of the San Juan (Kidder and Guernsey) and has been generally accepted elsewhere. Usually the accumulations of cedar bark have been found in the interior of large cists--thiswas not the case in Mantle's Cave. In that place they appeared to lie in a shallow depression scooped out of loose sand, moreover, they were elongated areas, shorter than a human body, but not round, so as to make a comforatble spot for an adult to curl up. The absence of a distinct occupational area suggested to us that the use of these cedar bark "couches" was for the prupose of placing babies and children at a time when the seasonal work was going on at the granaries in the cave. This explanation satisfies us completely qt present. In one or two instances caches had been made in these cedar bark masses (willow pole mat) but there is no practical reason why such pr parations for the simple caches found in every instance should have been made, and we believe the caches to have been secondary to the real purpose of the masses of cedar bark; indeed, the caches of richer material, if we judge the respective value of the caches correctly, were made under far more simpler methods.

Figure 188. A transcription of field notes from the 1939-1940 excavation of Mantle's Cave (ARC.DNM01_001_017). The passage reflects the interpretation of the 'couch' section by Scoggin and Lohr.



40

Transcribed

Worked out Cave "B" May 12th completely into Cave C. locating the entrance passage into the latter. These caves connect.

Cave B is 7'11" from front to back 35 3/4" across the opening. Is shaped.

Figure 189. A page from Scoggin's journal describes the shape of sub-cave B and C and depicts the connection between the openings (ARC.DNM01_001_003: 40). These sub-cave were found along the back wall of Mantle's Cave.

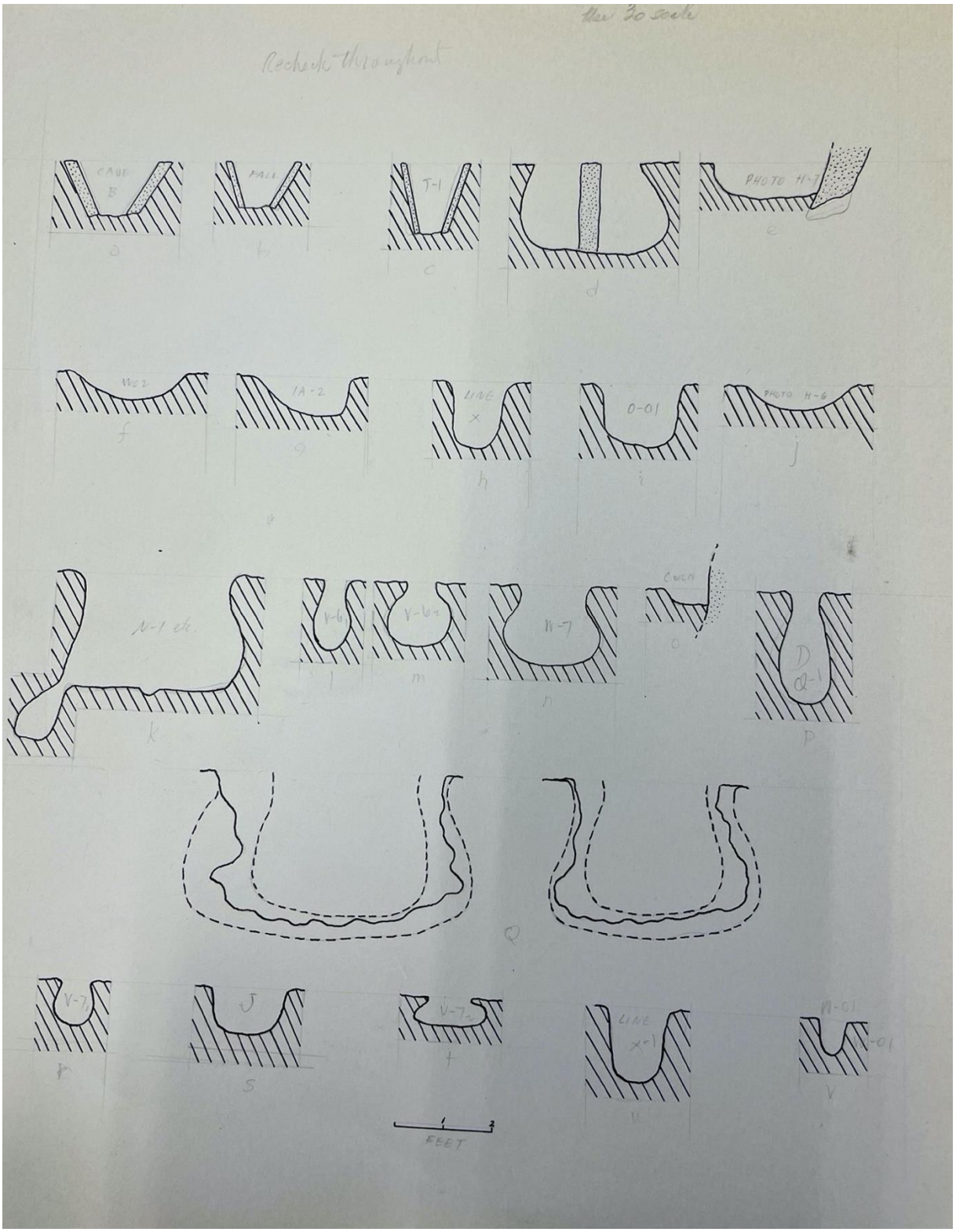


Figure 190. The drawings above feature the profiles of some of the cists from Mantle's Cave (ARC.DNM01_001_038). Several of the cists were bell-shaped but there were also irregular pits.

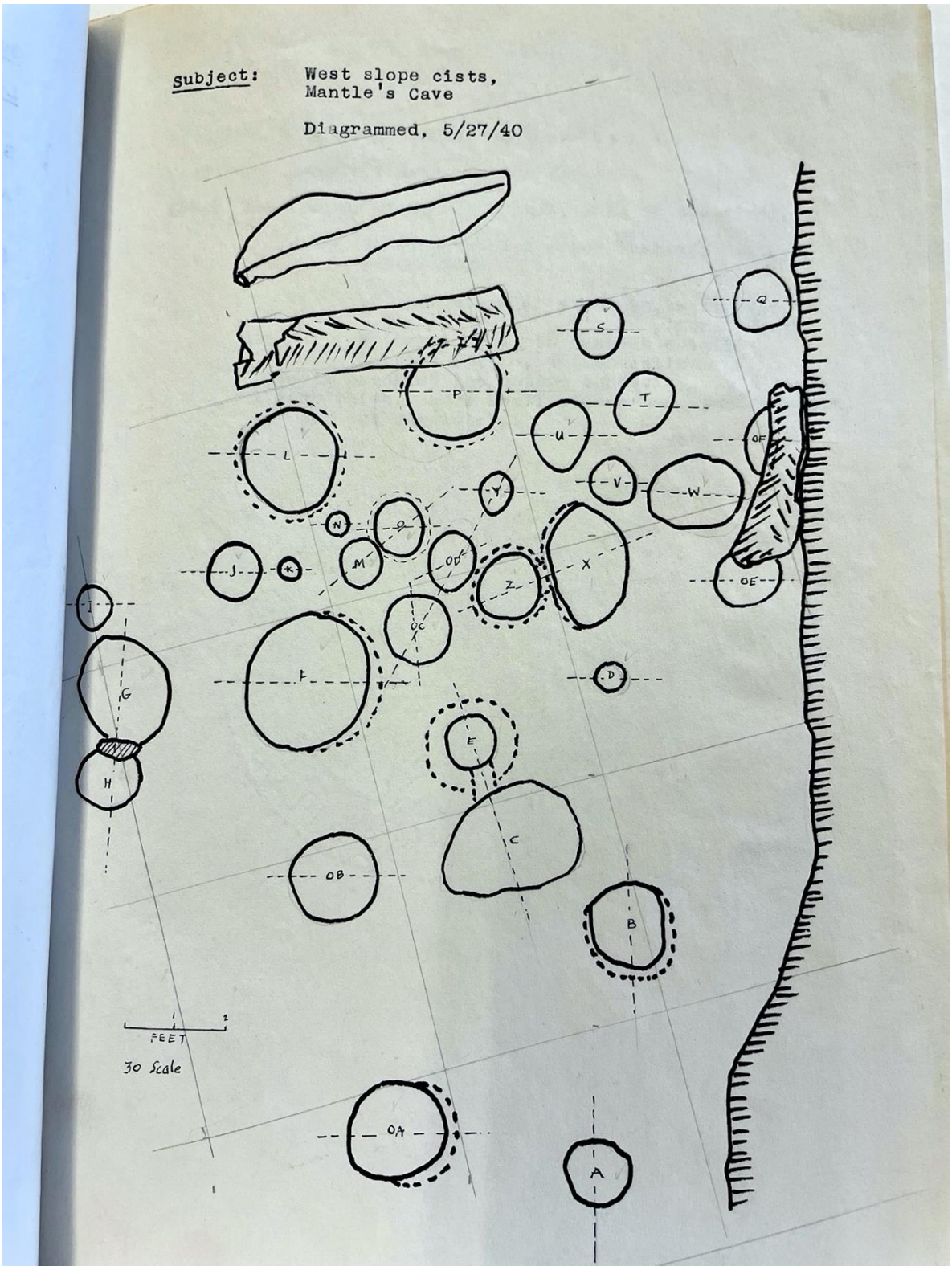


Figure 191. The configuration of the western slope cists from Mantle's Cave are drawn here with their labels (ARC.DNM01_001_038). Unit lines are included in the map, but specific units are not labeled. The areas that are shaded or sections of squares are likely used to represent the rocks in the area.

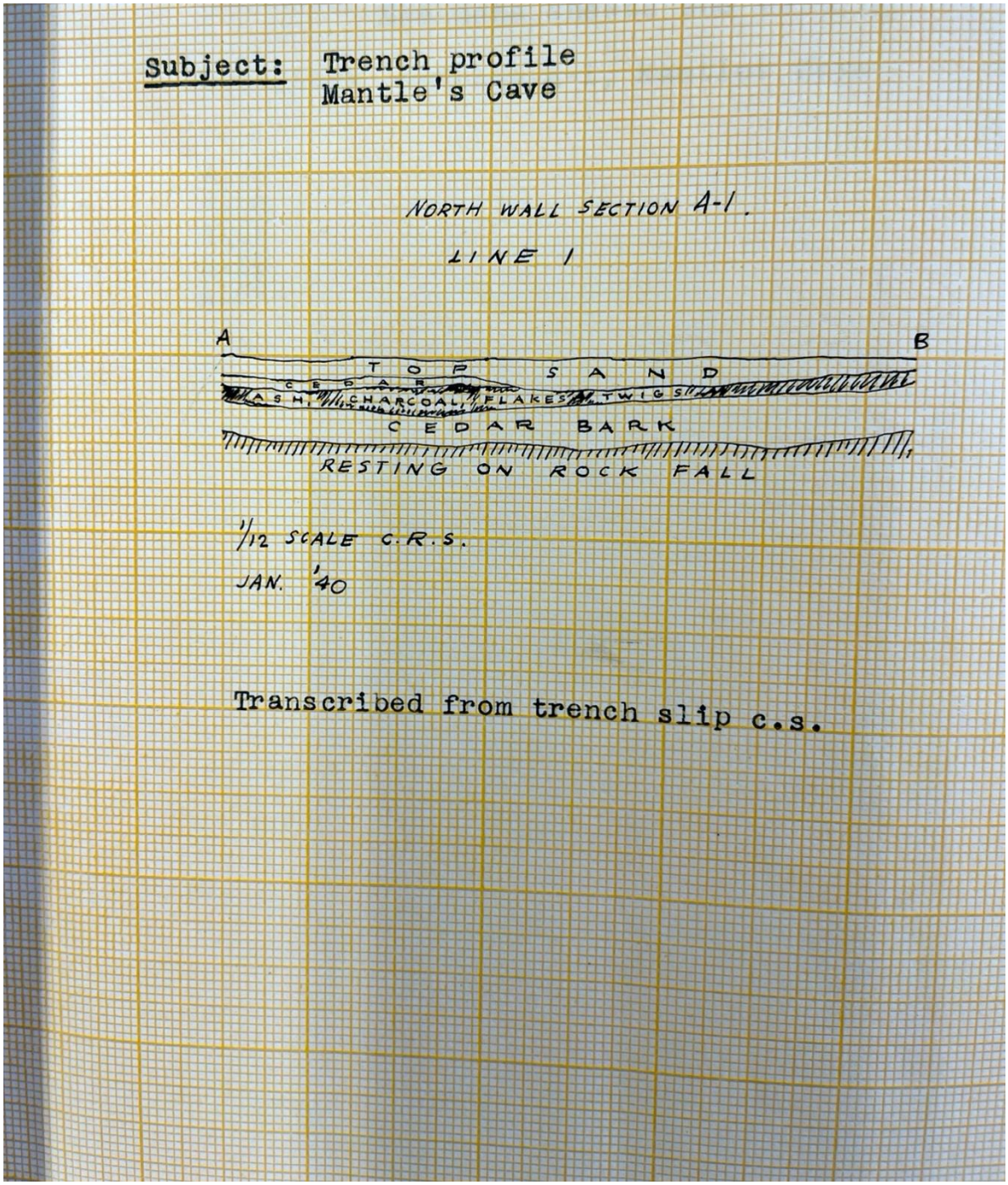


Figure 192. The north wall profile of unit A-1 is shown above (ARC.DNM01_001_017). Cultural material was present above and below the charcoal layer. The drawing above was transcribed from a larger soil profile.

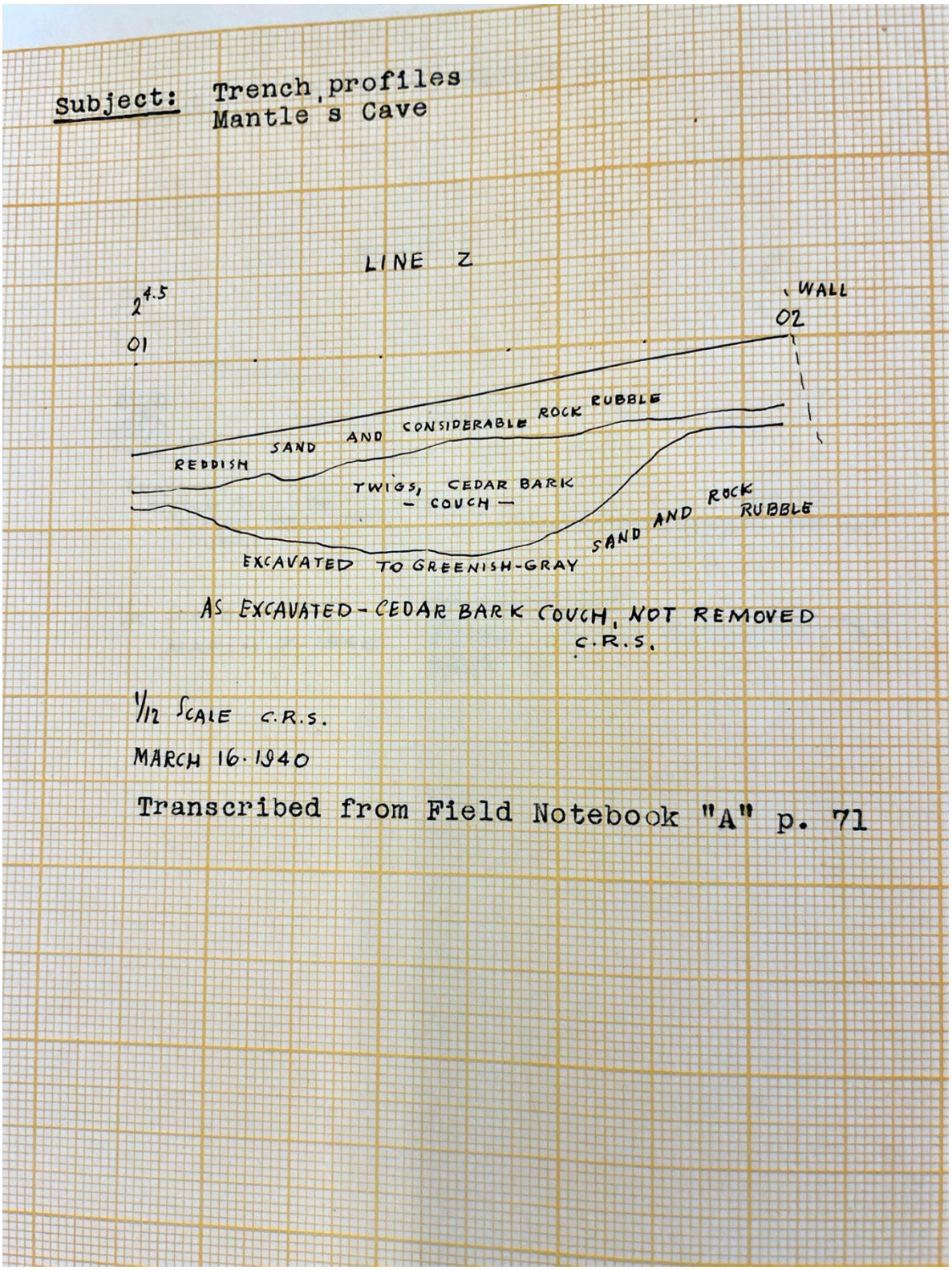


Figure 193. The section of the cave described as a 'couch' is featured on the profile for Line Z between lines 02 and 01 (ARC.DNM01_001_017). This unit lies at the back of the cave. The drawing above was transcribed from a larger soil profile.

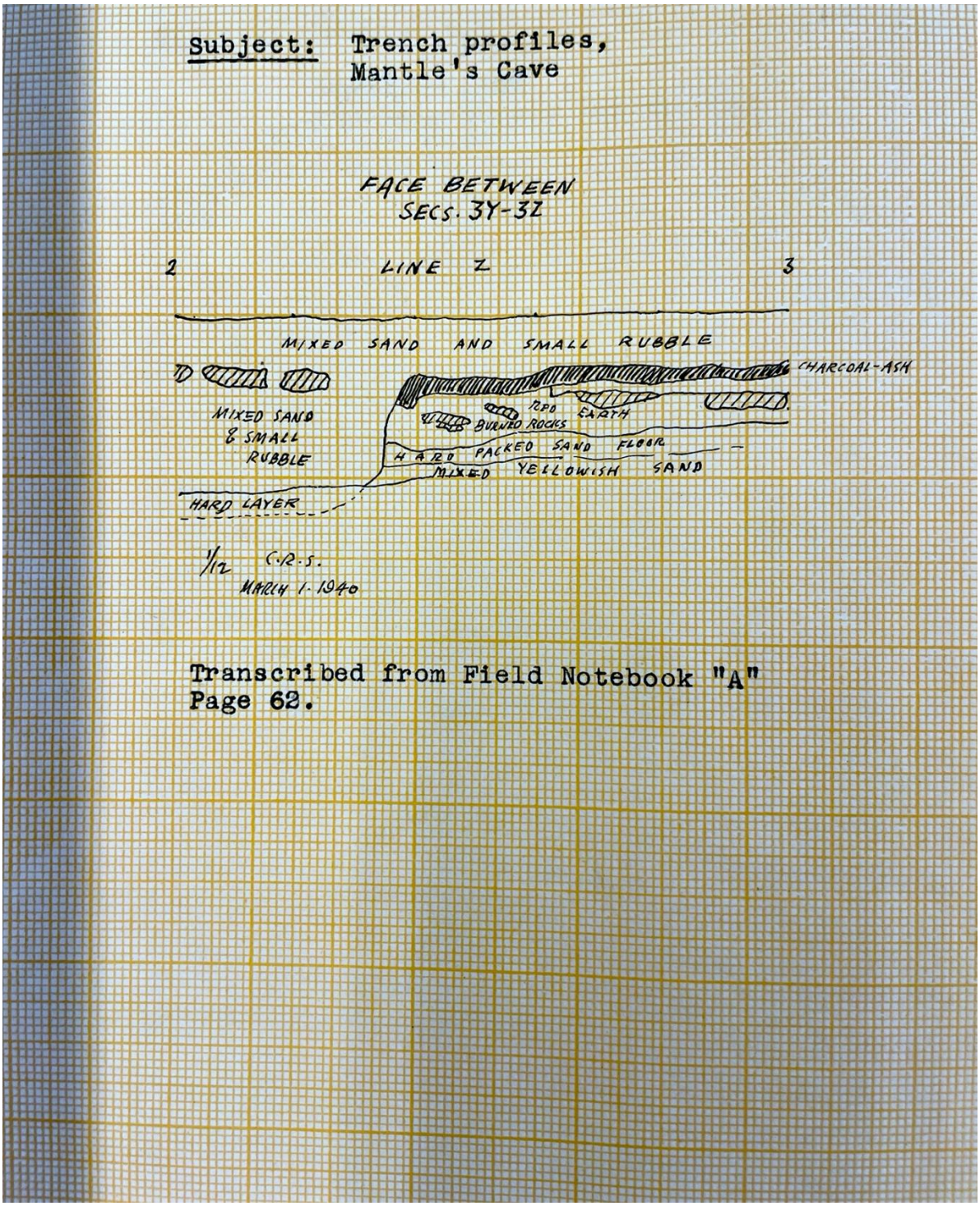


Figure 194. A soil profile of Line Z facing units Y-3 and Z-3 is seen above (ARC.DNM01_001_017). This particular profile features a burned rock feature that is not a widespread phenomenon in the cave. The drawing above was transcribed from a larger soil profile.

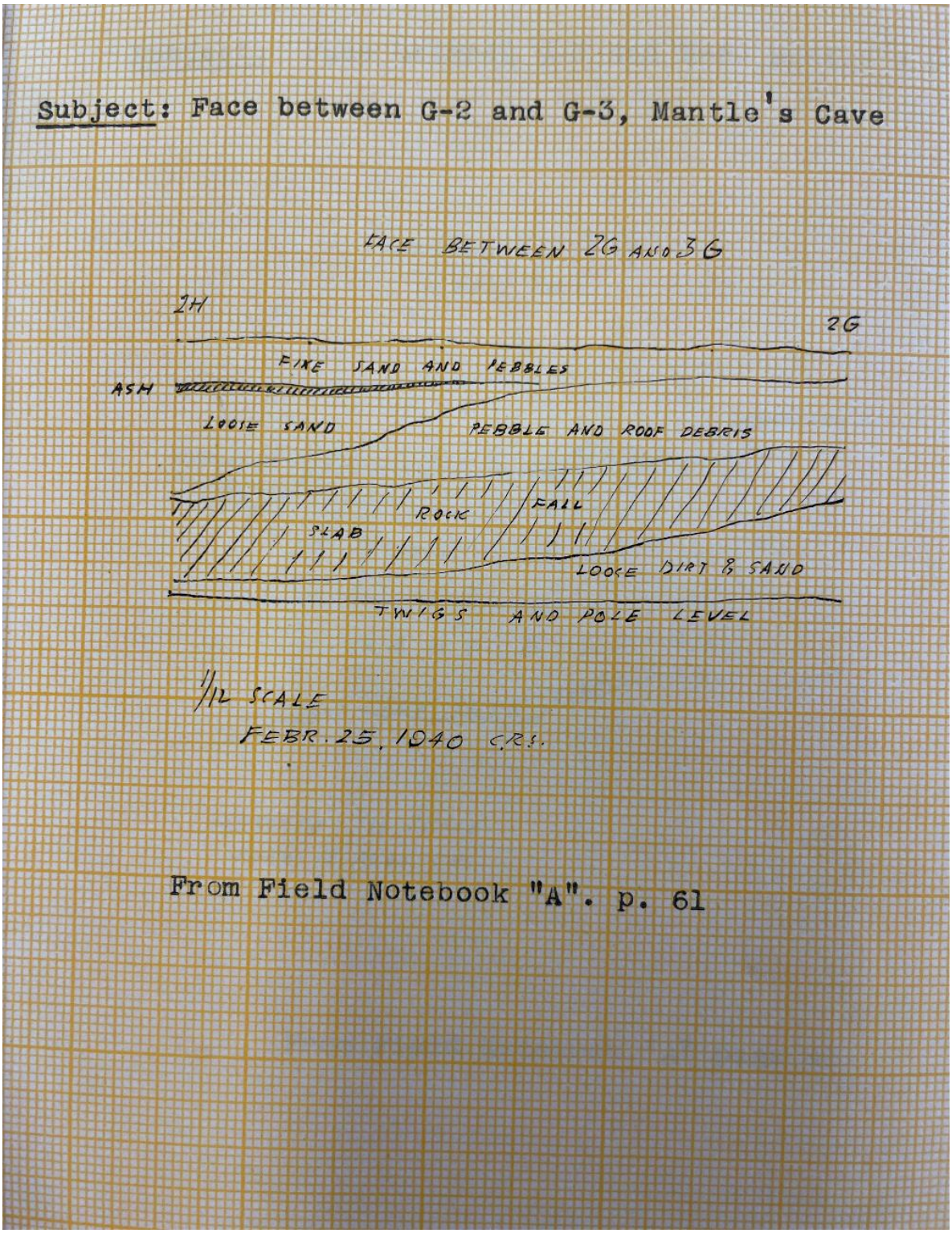


Figure 195. The wall between unit G-2 and G-3 is shown above (ARC.DNM01_001_017). This profile documents the presence of cultural material above and below ceiling rock fall. The dispersal of material supports the idea that the cave was used before and after the episodes of ceiling collapse. The drawing above was transcribed from a larger soil profile.

APPENDIX G: ADDITIONAL PHOTOGRAPHS

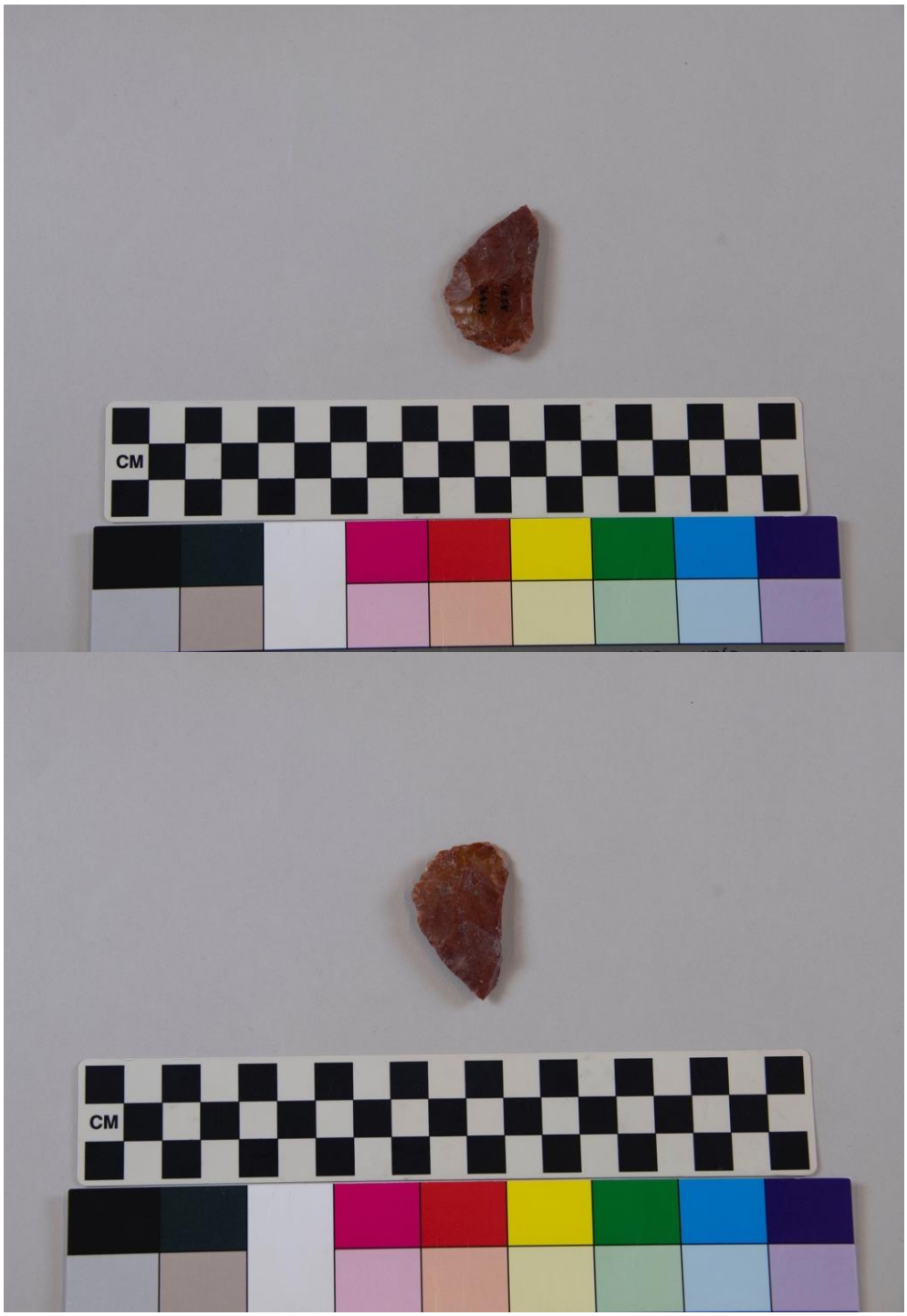


Figure 196. Another chipped stone implement, UCM 05444, from the site. Copyright University of Colorado Museum of Natural History.

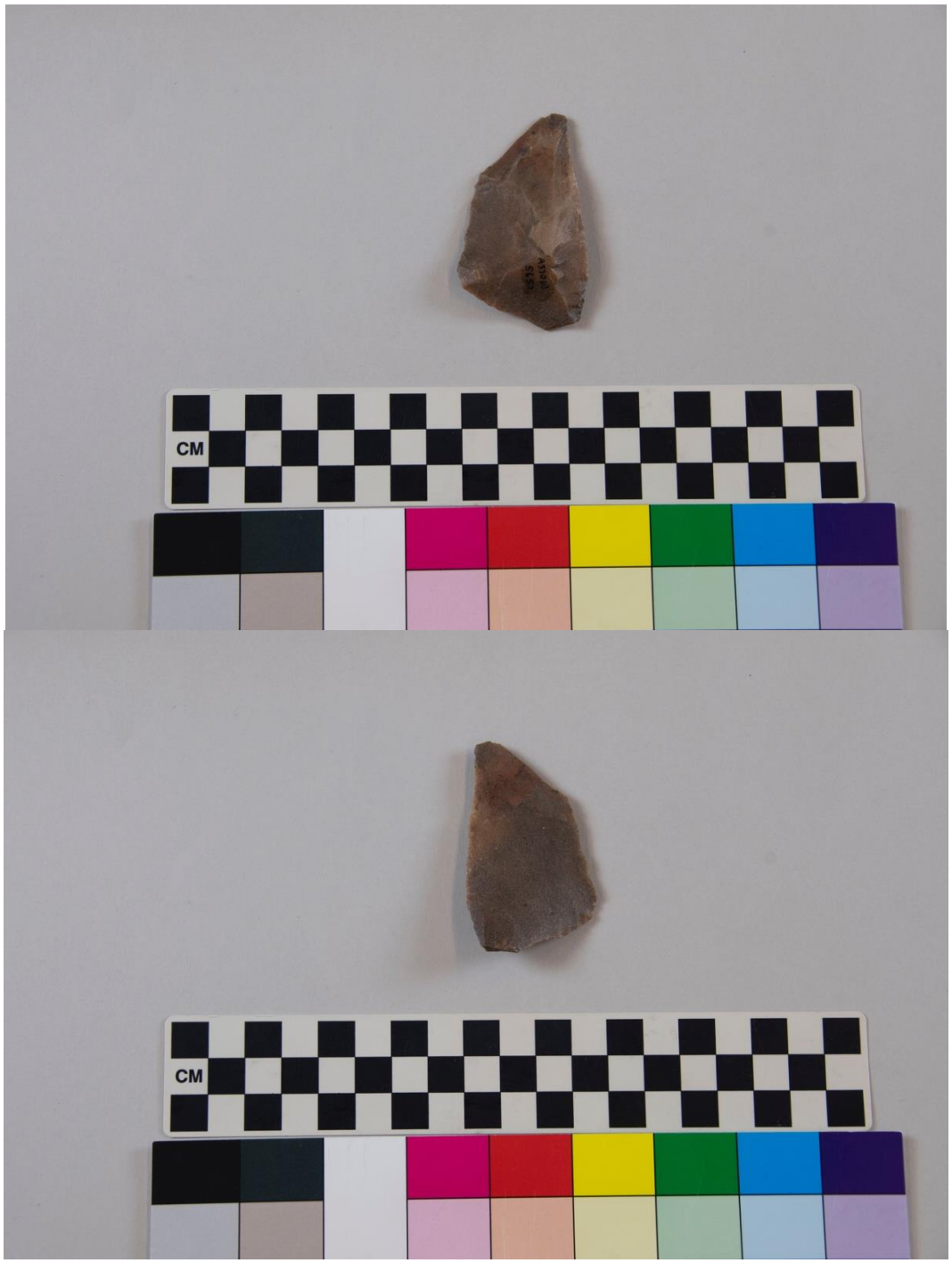


Figure 197. Another chipped stone implement, UCM 05652, from the site. Copyright University of Colorado Museum of Natural History.

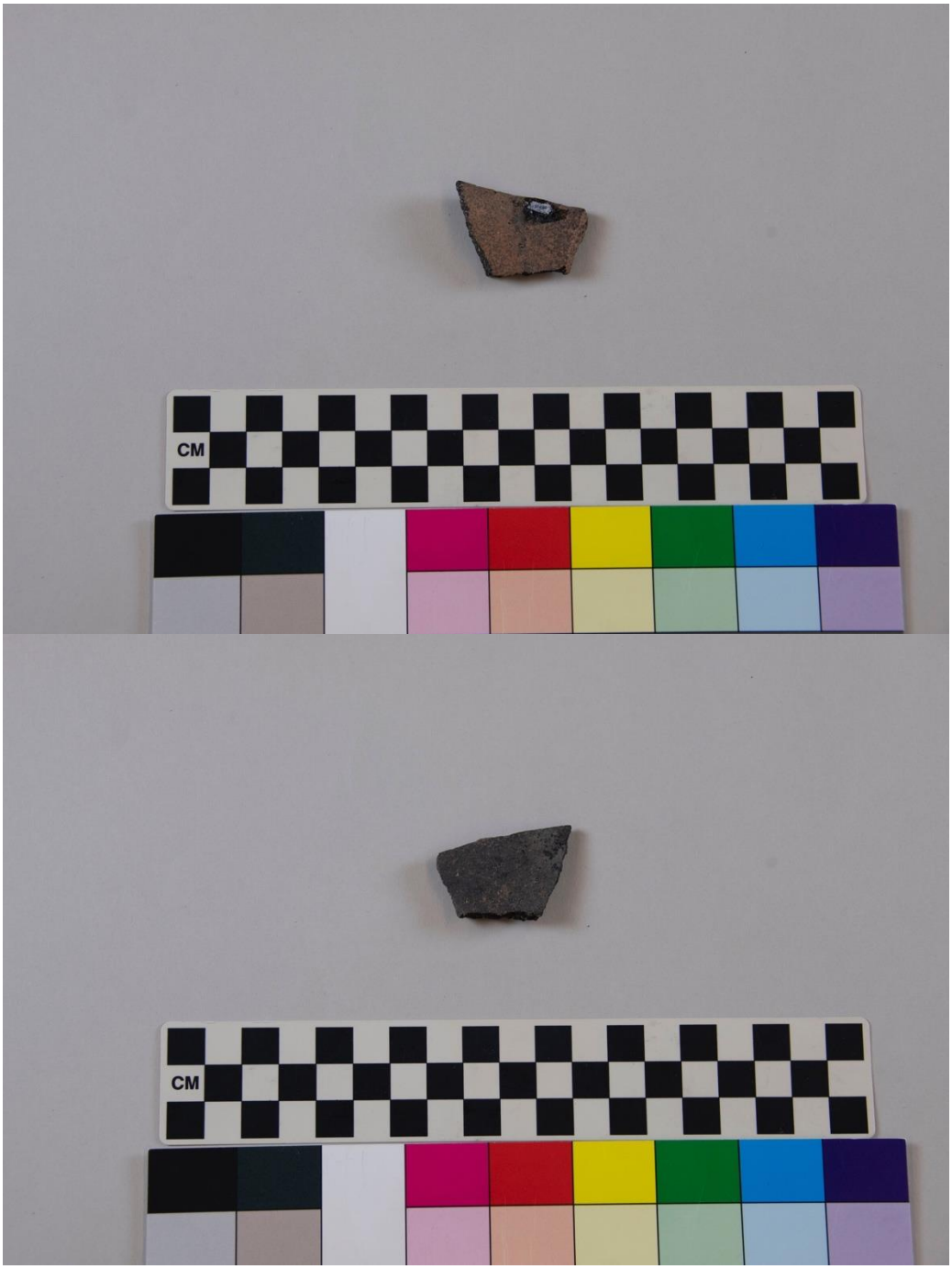


Figure 198. One of the rim sherds (UCM 05745) from the site. The pottery reflects the Uinta Grey Pottery Type. Copyright University of Colorado Museum of Natural History.

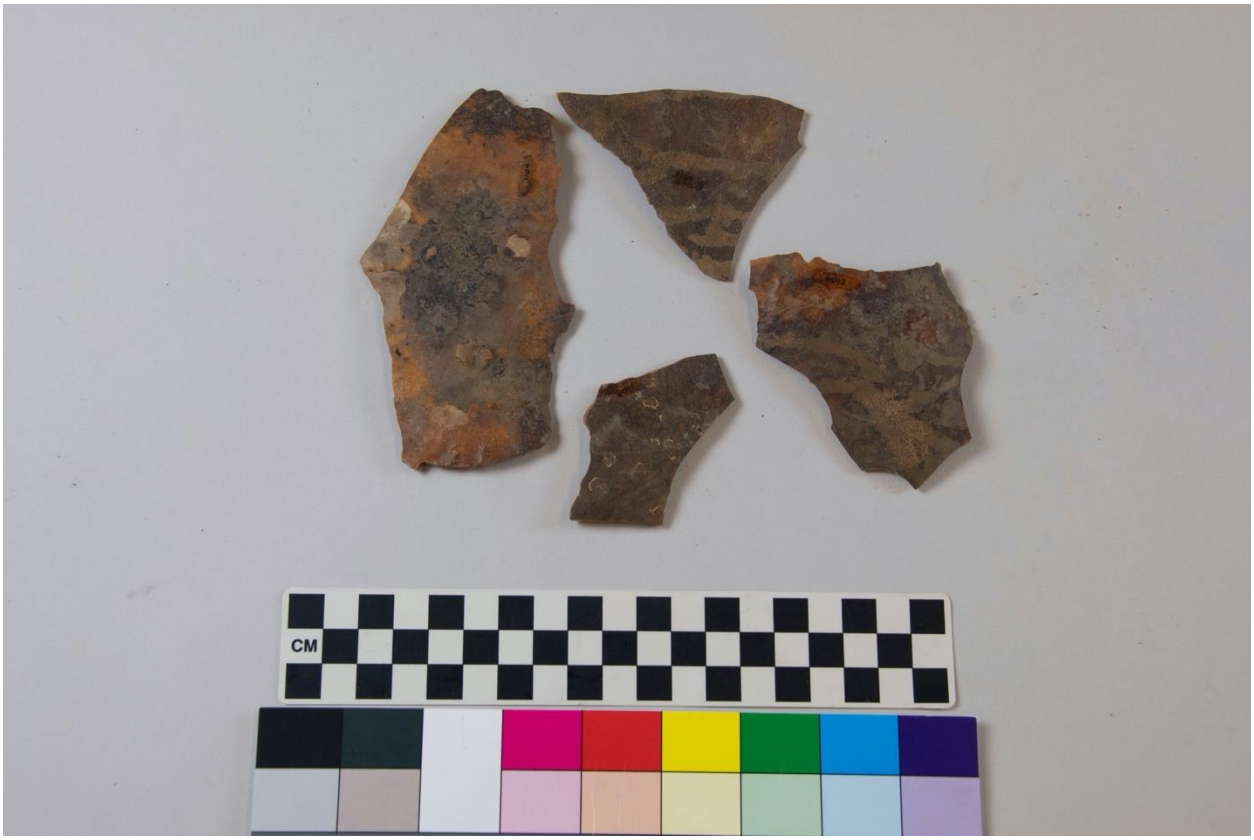


Figure 199. Squash fragments (UCM 06012a). The fragments were from unit 1Q-13. Copyright University of Colorado Museum of Natural History.

Figure 200. A chalcedony knife, UCM 06194. Copyright University of Colorado Museum of Natural History.

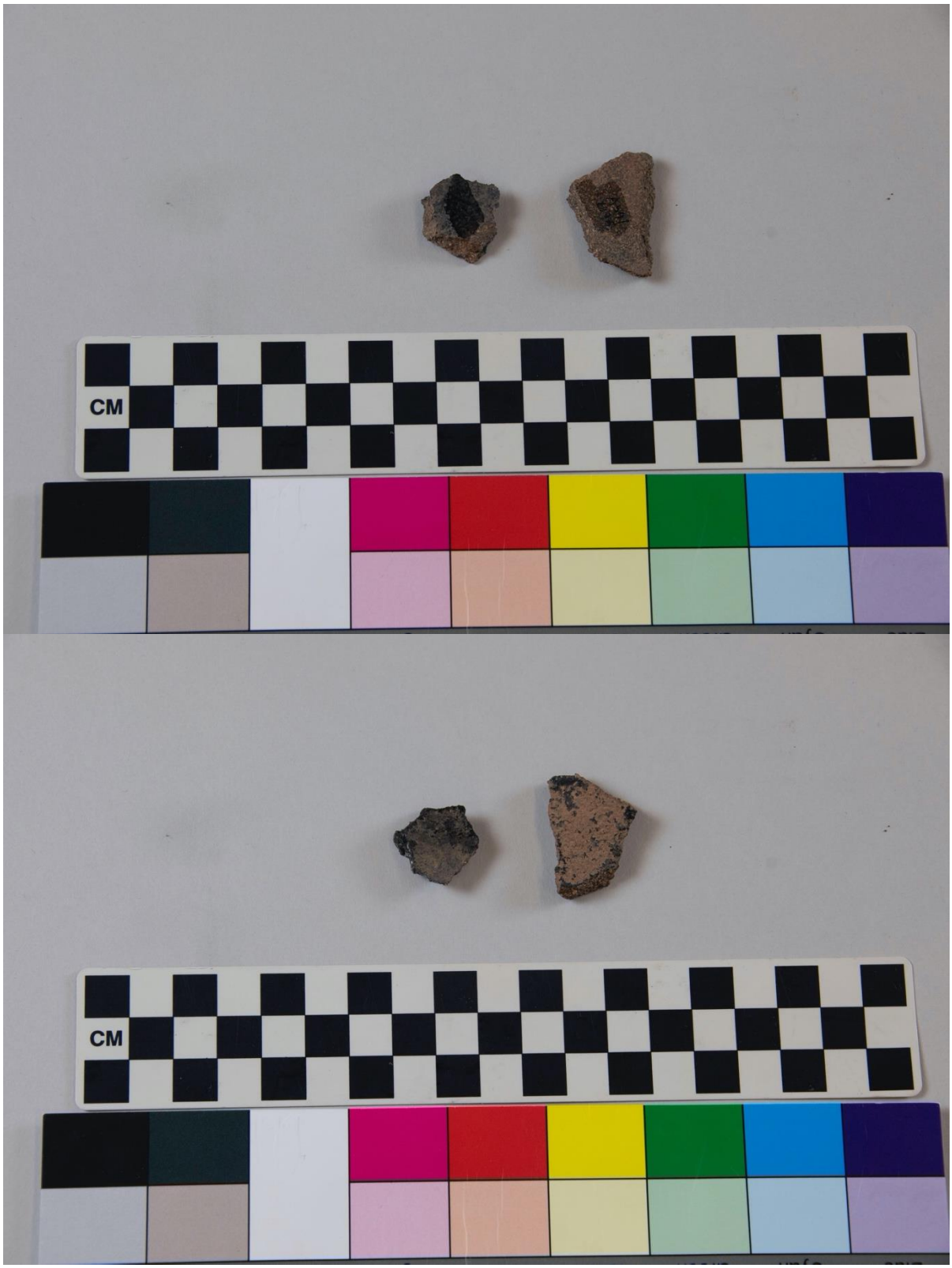


Figure 201. Pottery sherds, UCM 06195, are similar to the Uinta Grey Pottery Type. Copyright University of Colorado Museum of Natural History.

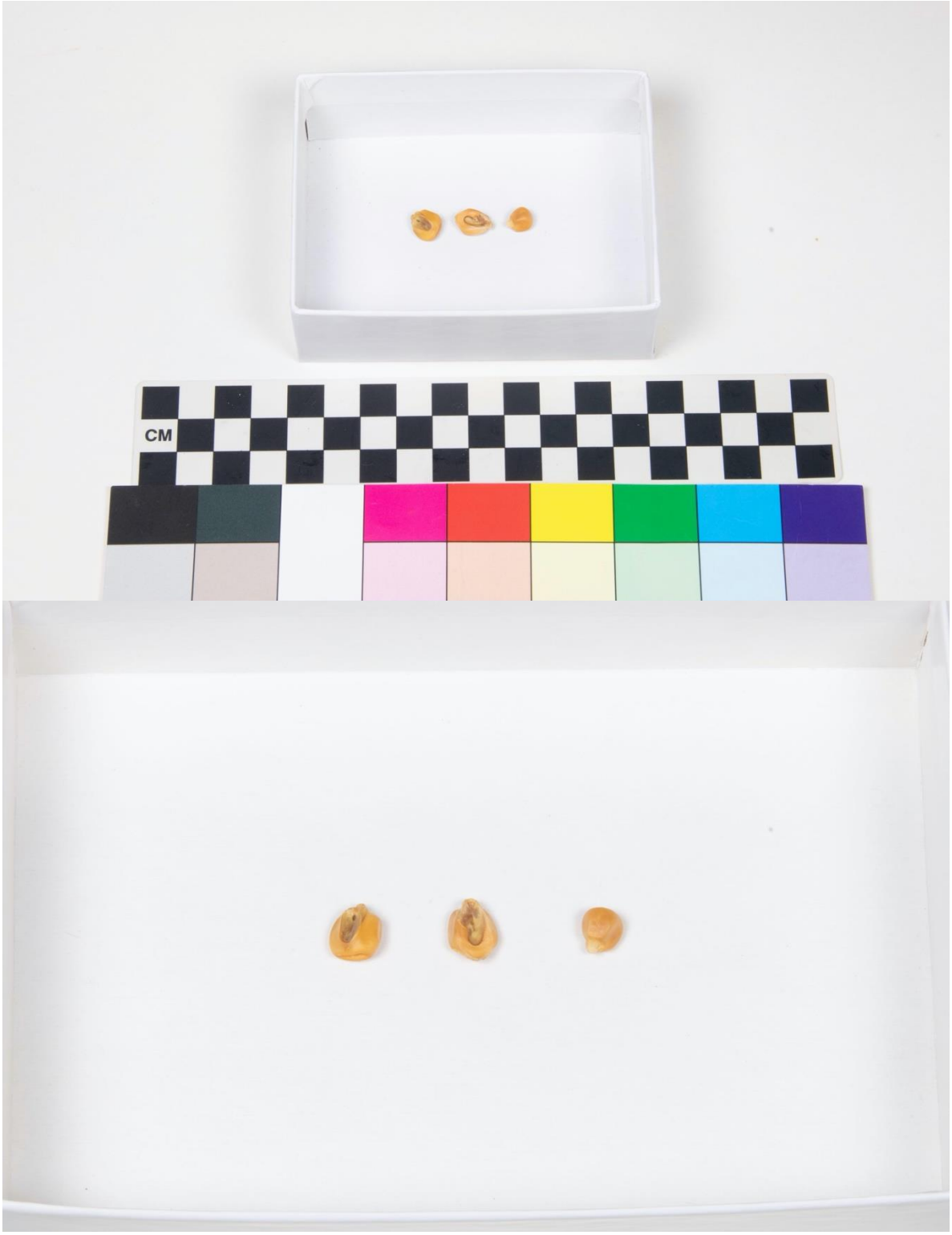


Figure 202. Three kernels of maize, UCM 06251, from unit W-10. Copyright University of Colorado Museum of Natural History.

Figure 203. Three cobs, UCM 06252, from unit W-10. Copyright University of Colorado Museum of Natural History.

Figure 204. The cob, UCM 06257, was found in unit 2H-4 in one of the cists on the western slope. Copyright University of Colorado Museum of Natural History.

APPENDIX H: ADDITIONAL MAPS

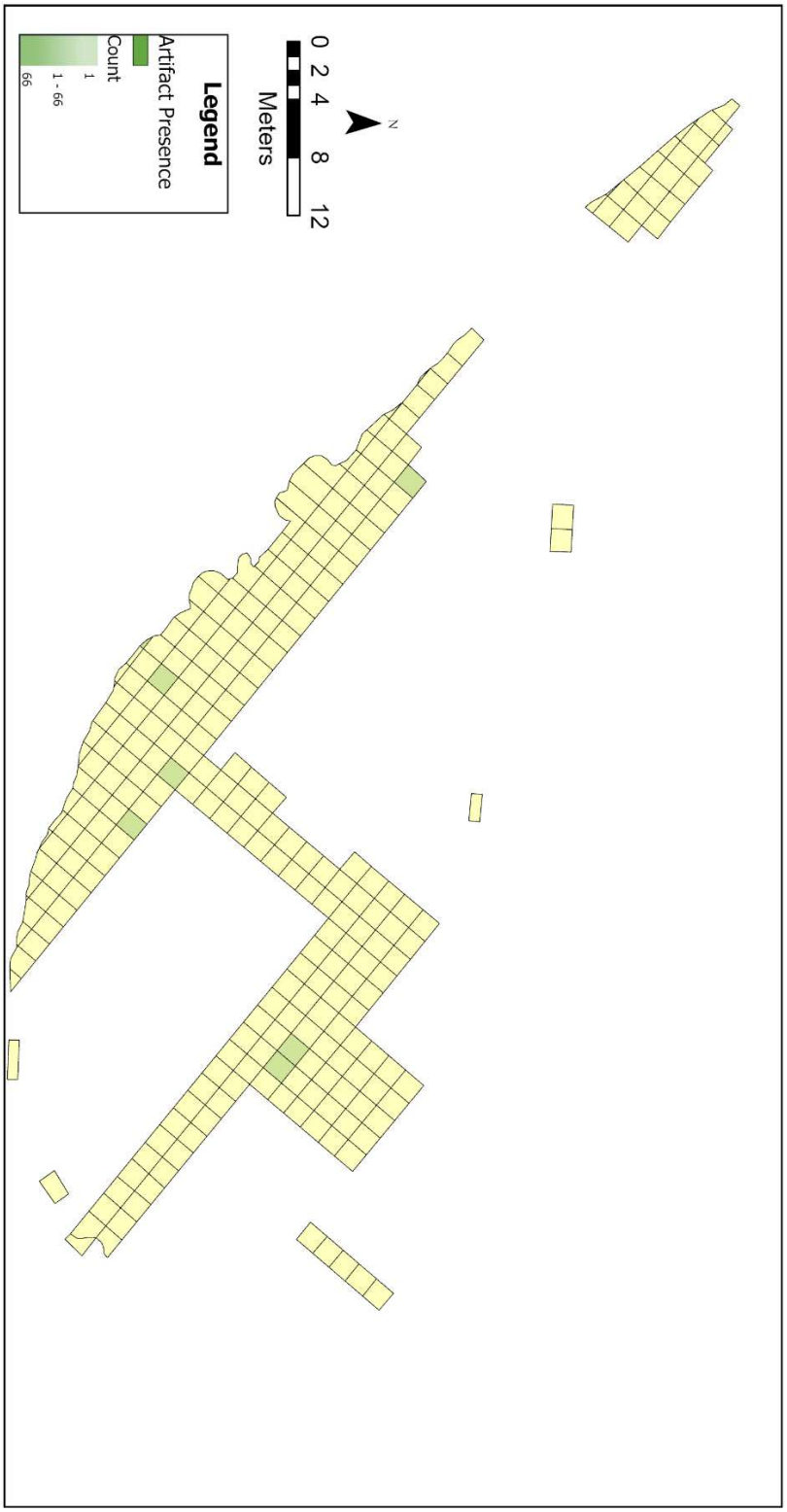


Figure 205. The map reveals the locations of the ground stone recovered from the site. This map was featured previously in the text with additional imagery overlayed.

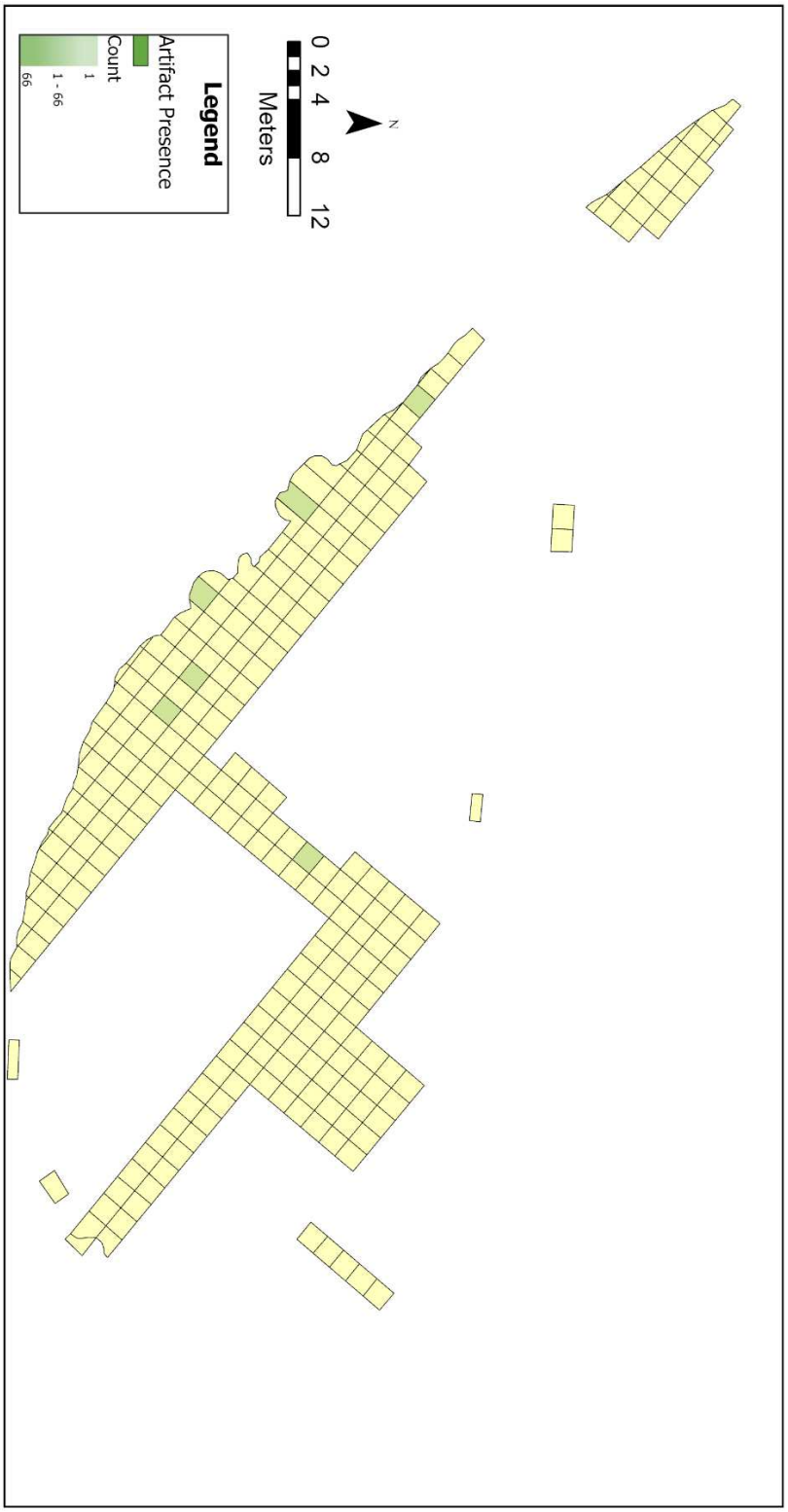


Figure 206. Digging sticks that would be used to support crop cultivation are featured on the map here. This map was featured previously in the text with additional imagery overlayed.

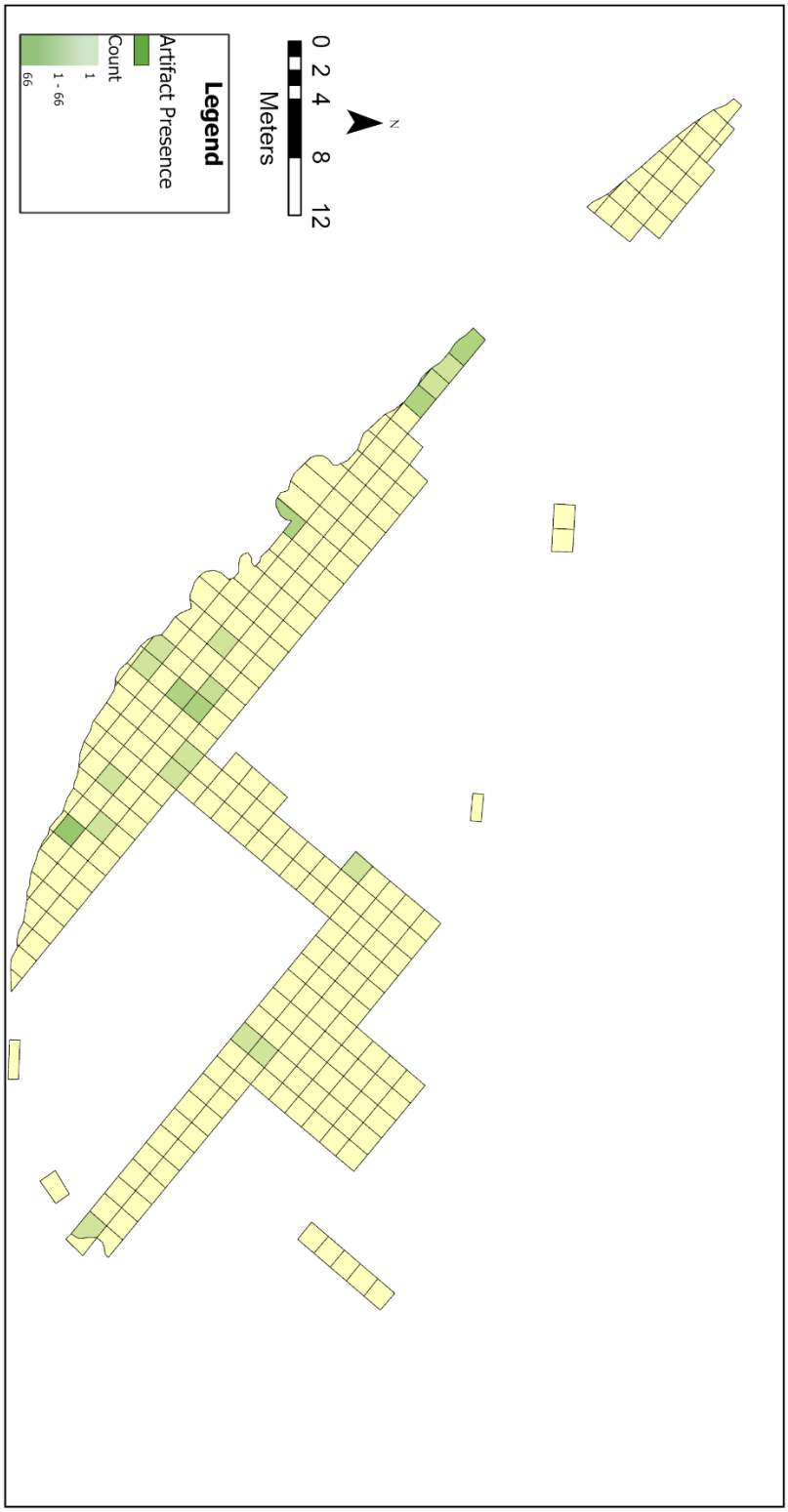


Figure 207. The location of objects made of animal skin, hair, and fur are featured above. This map was featured previously in the text with additional imagery overlayed.

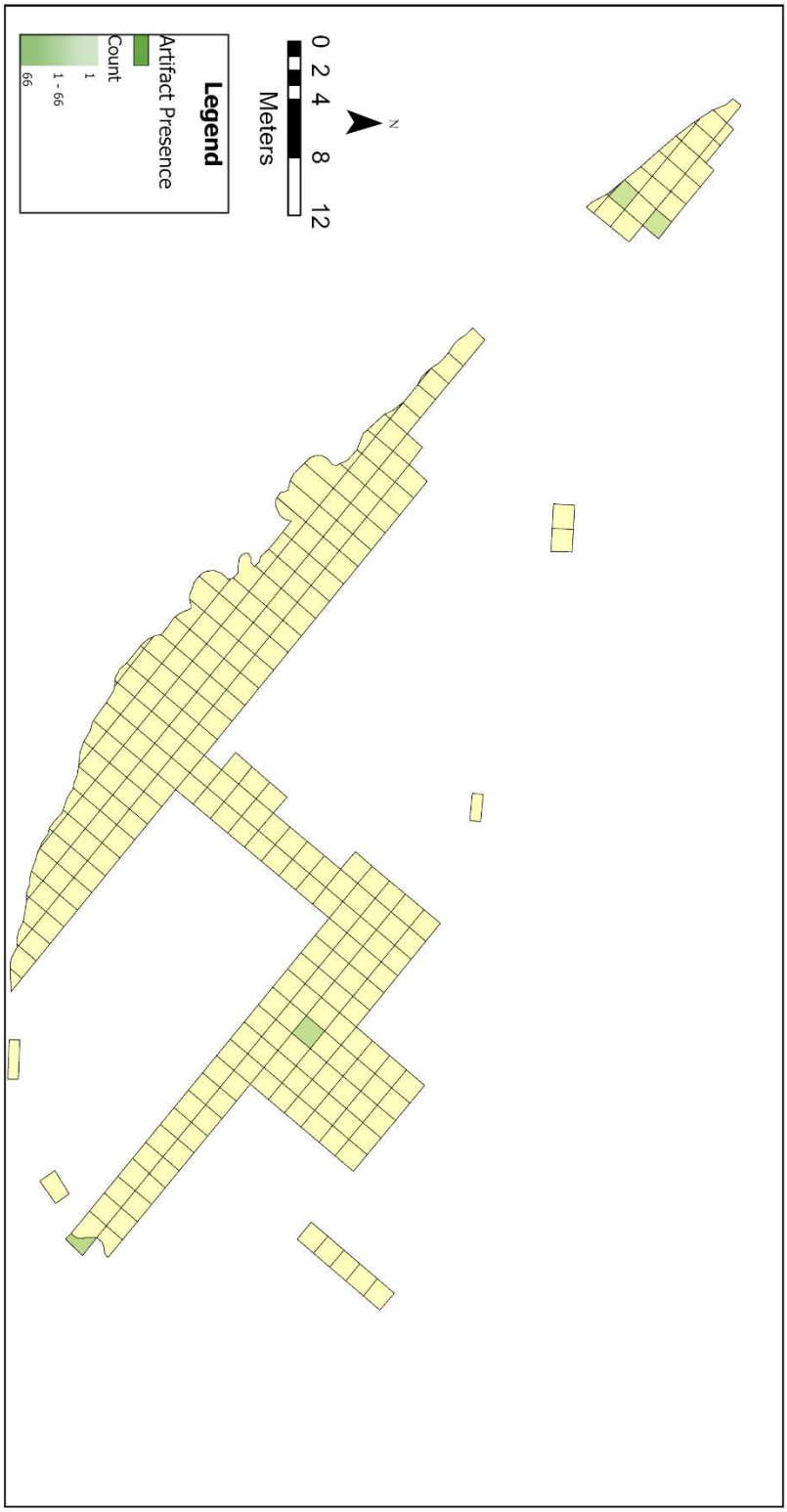


Figure 208. Maize and squash recovered from storage features are showcased on this map. This map was featured previously in the text with additional imagery overlayed.

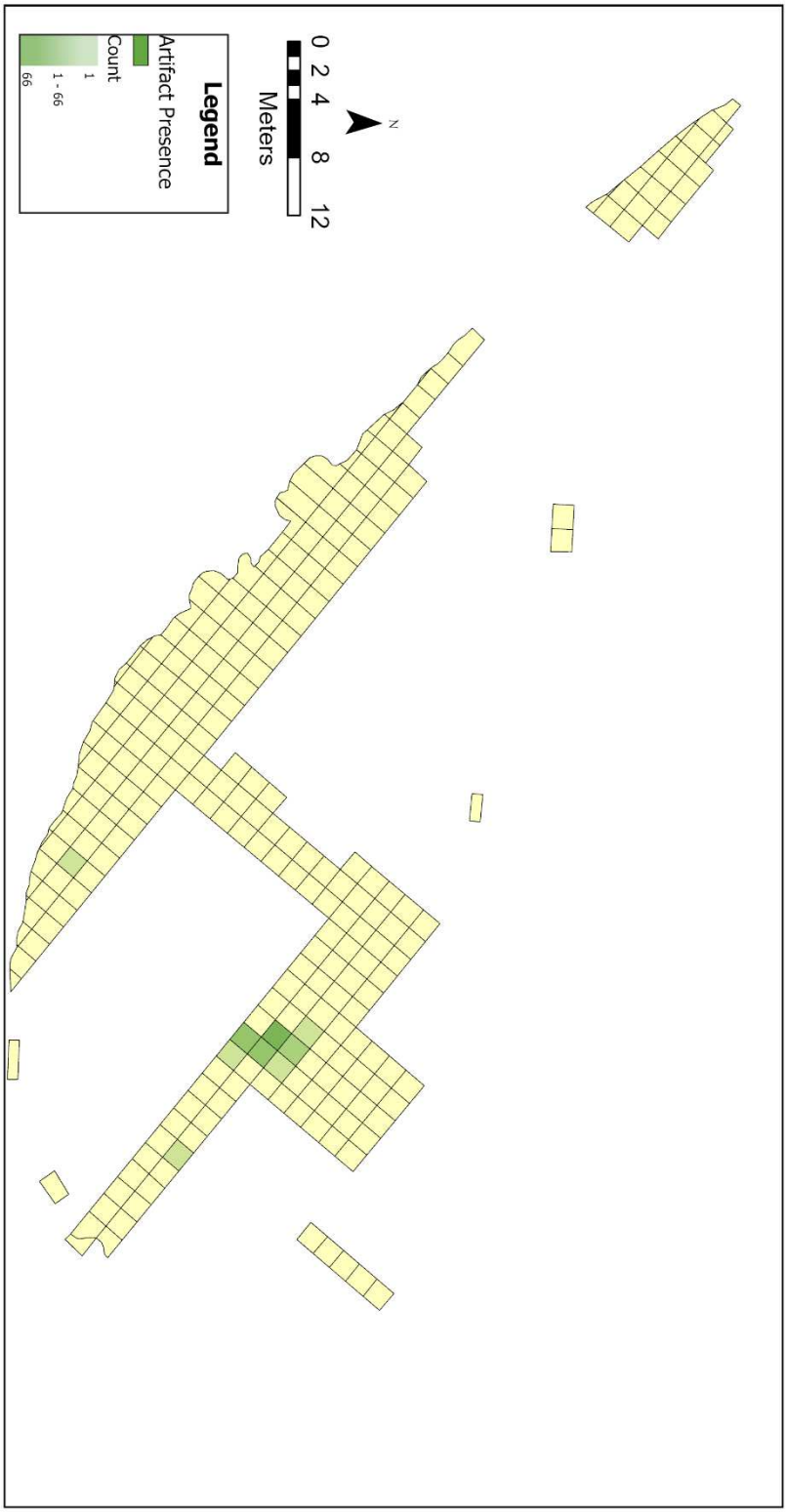


Figure 209. The location of pottery sherds from Mantle's Cave. The sherds are primarily clustered in the upper portion of the excavation grid. This map was featured previously in the text with additional imagery overlayed.

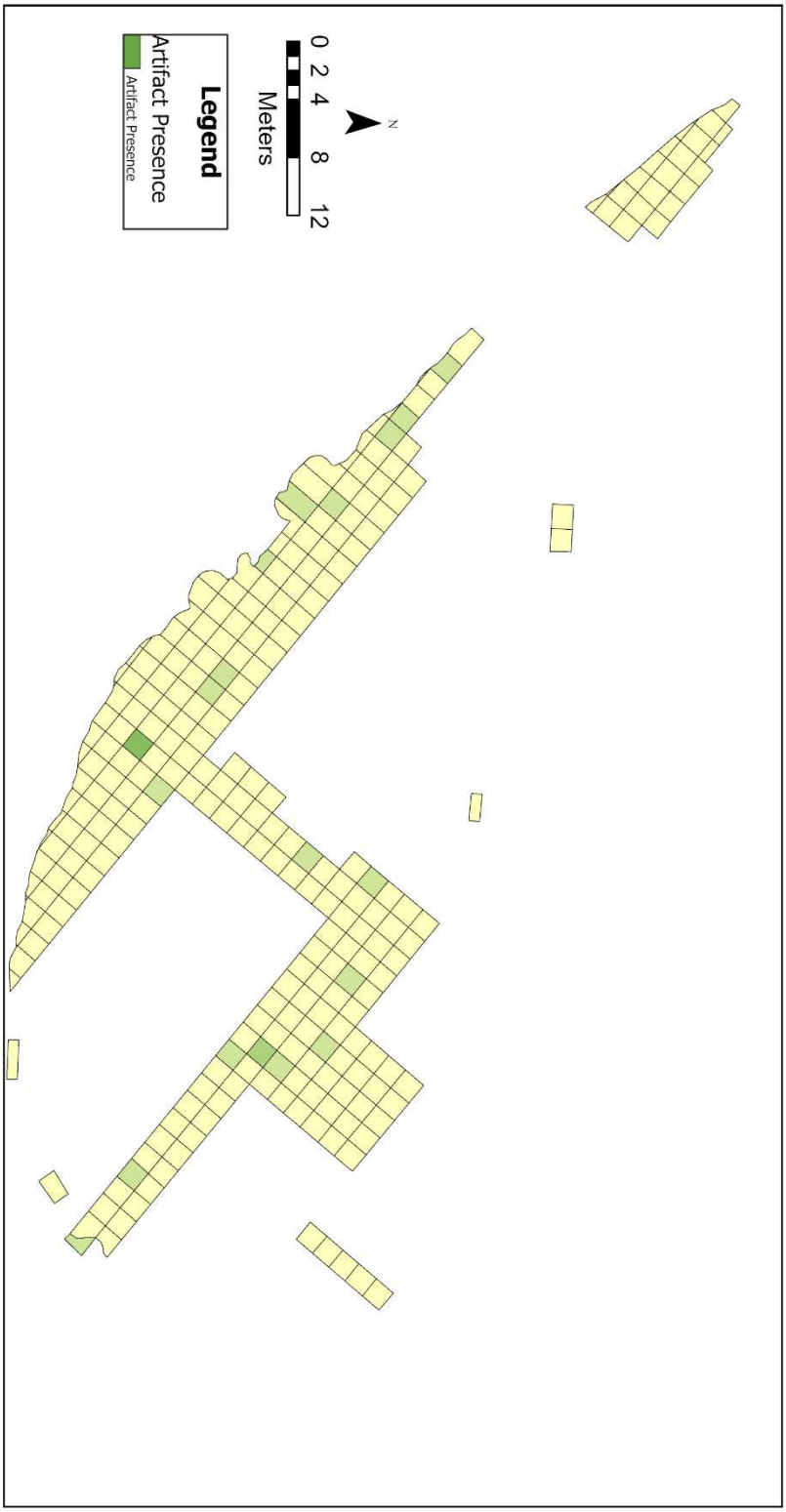


Figure 210. The variety of basketry items recovered from the site are shown here. There does not appear to be any clear zones where the items were recovered.

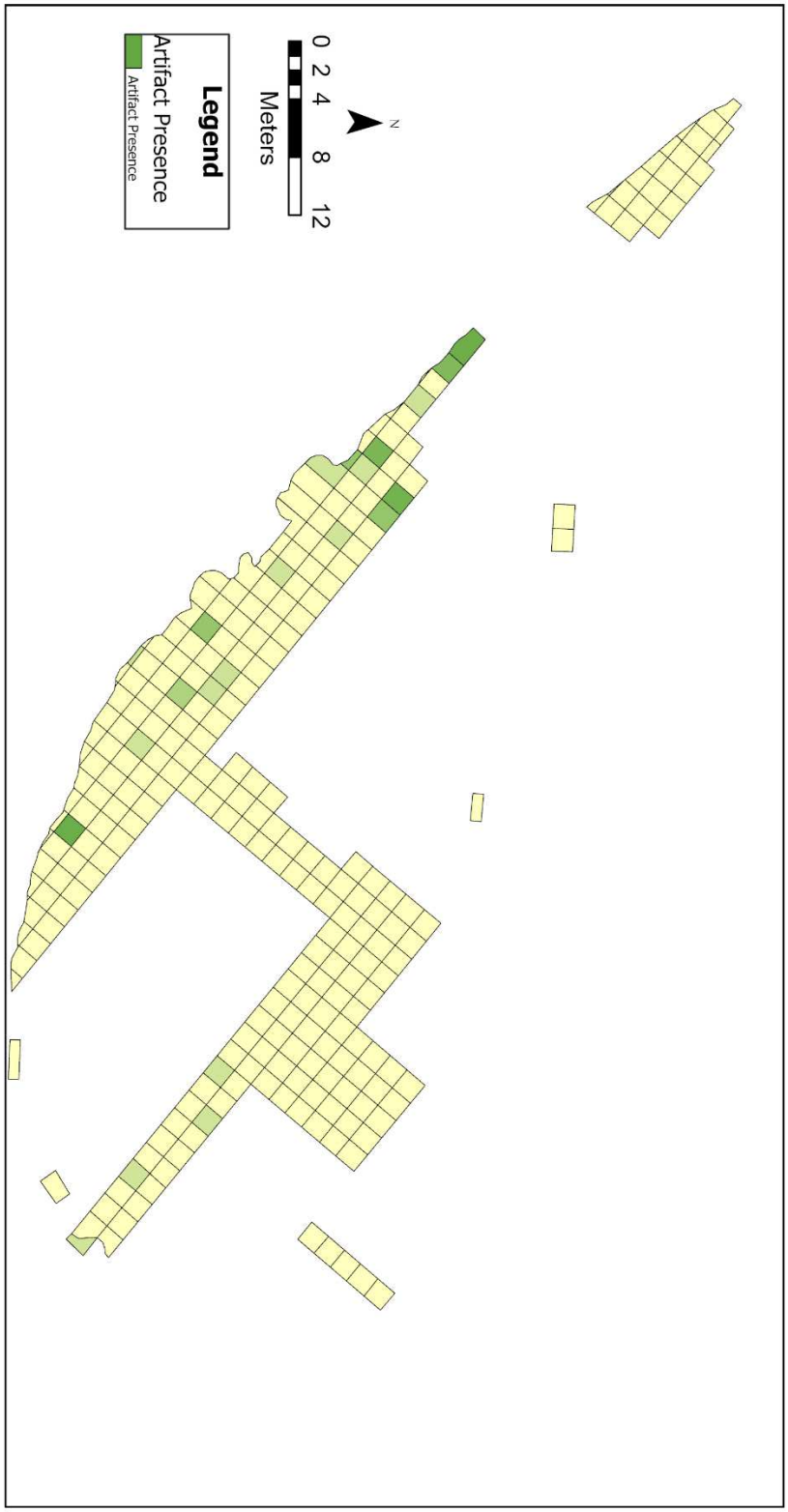


Figure 211. From the catalog codes, the element "chipped stone" was selected to display here. The material appears to be congregated at the western end of the base of the excavation grid.

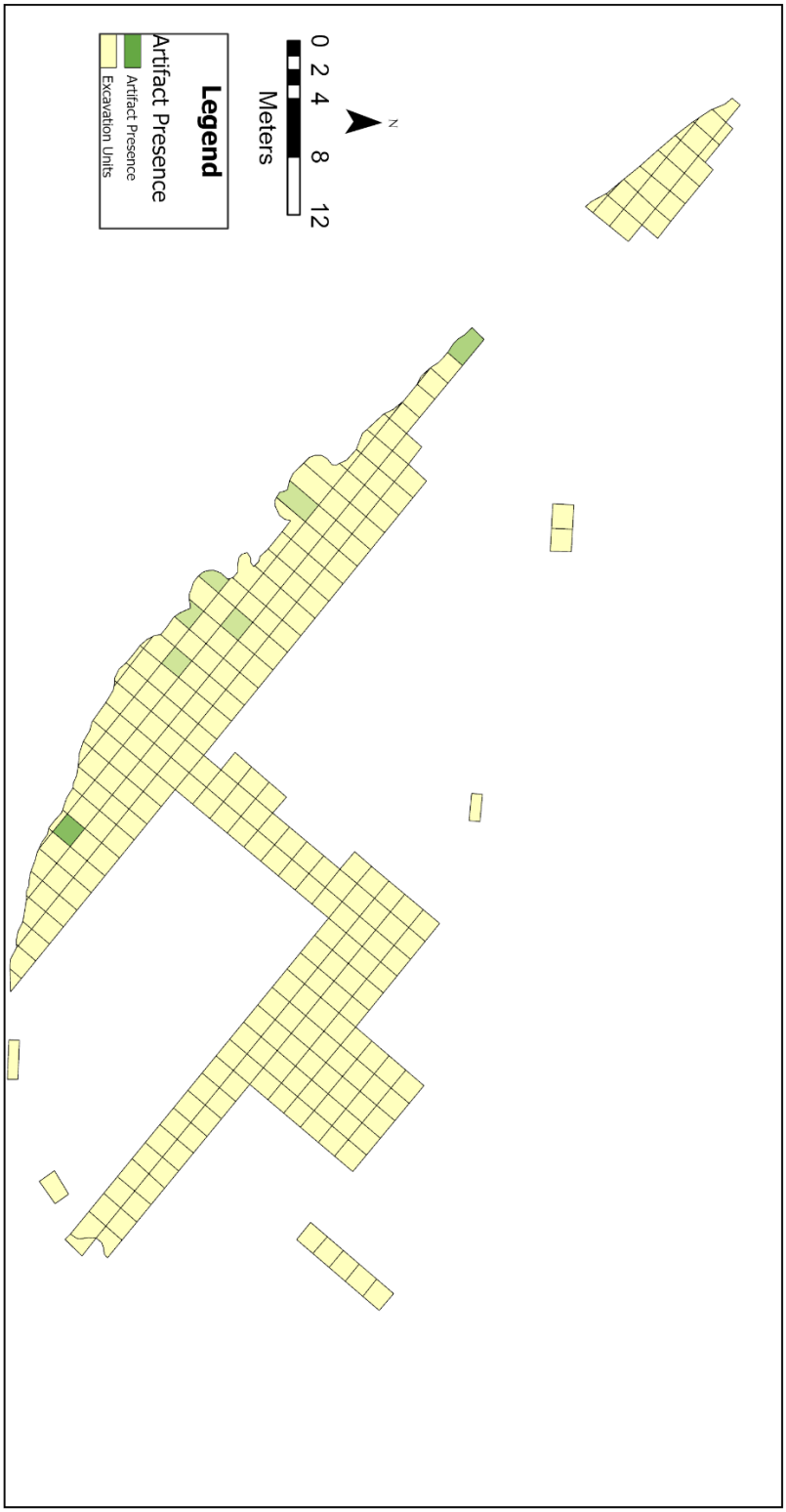


Figure 212. Bones tools from Mantle's Cave are featured on the map above. The appear appears to be found primarily along the back wall of the cave.

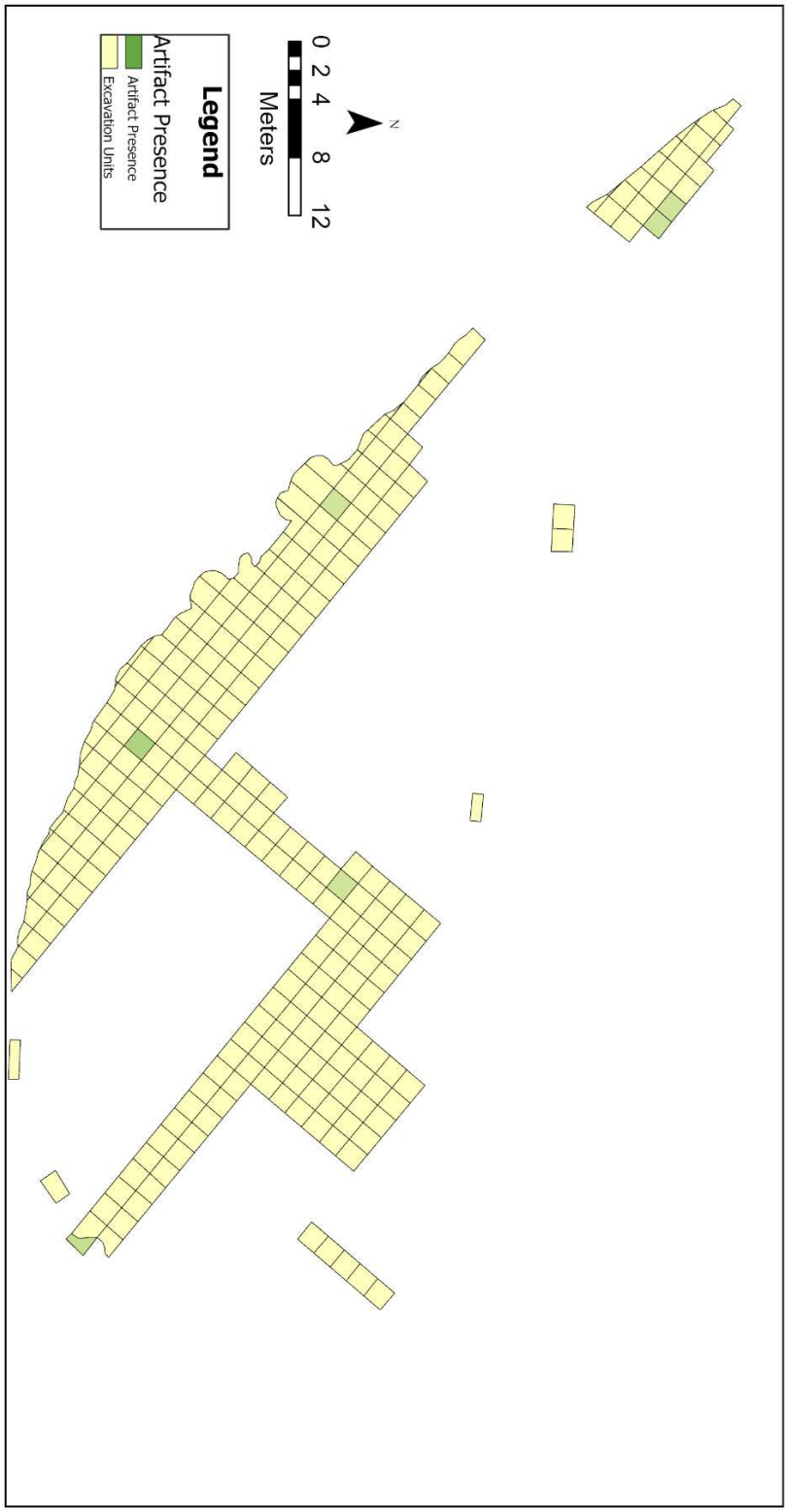


Figure 213. Cist covers recovered from the site are shown here. The covers were found frequently alongside cists at the cave.

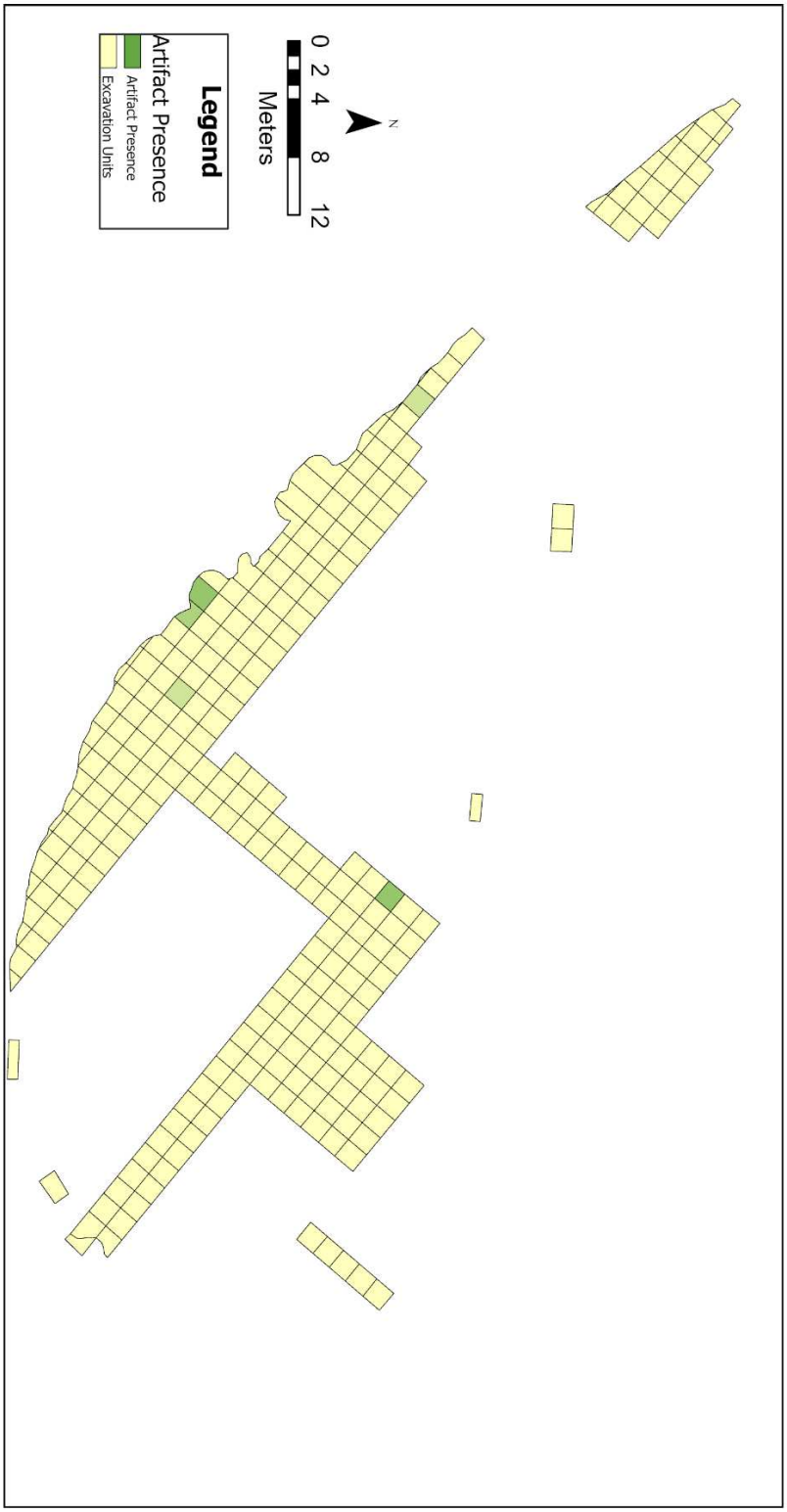


Figure 214. Items of adornment or clothing pieces are featured on the map above. The items are primarily found in caches along the back wall of the cave.