

THESIS

AN INVESTIGATION OF CLASSIC MAYA CAVE MORTUARY PRACTICES AT  
BARTON CREEK CAVE, BELIZE

Submitted by

Vanessa A. Owen

Department of Anthropology

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## ABSTRACT OF THESIS

### AN INVESTIGATION OF CLASSIC MAYA CAVE MORTUARY PRACTICES AT BARTON CREEK CAVE, BELIZE

Archaeological research at Barton Creek Cave, Belize, has revealed an abundance of artifacts and human remains in caves that confirm the significance of these places to the Maya. The question that forms the basis of this study is who are the individuals that were afforded interment within the cave? This question will be explored through the investigation of skeletal materials and their contextual information, and a reconstruction of the mortuary patterns at Barton Creek Cave. Specifically, my goal is to determine whether these individuals are victims of sacrifice or whether they represent revered ancestors as a form of ancestor worship.

Multiple lines of evidence support the theory of sacrifice for the interments in Barton Creek Cave, which include lack of grave goods, atypical burial positions, burial context, and age-at-death distribution. Results of this study also suggest that the mortuary rituals that took place in caves such as Barton Creek Cave are a direct reflection of the struggles and concerns of the Maya during the Late to Terminal Classic period.

Vanessa Alison Owen

Anthropology Department  
Colorado State University  
Fort Collins, CO 80523  
Spring 2002

## **CHAPTER 1**

### **Introduction**

Caves were of great ritual significance to the ancient Maya and were considered to be sacred places in their cosmological framework. Cave entrances were perceived as portals to Xibalba, the Maya underworld, and were also viewed as places in which Chac, the Maya god of rain, thunder and lightning resided (Brady and Stone 1986; MacLeod and Puleston 1978; Thomson 1975). Archaeological research has revealed an abundance of artifacts and human remains in caves that confirm the significance of these places to the ancient Maya, though little is known regarding the ritual activities and mortuary practices that took place at these sacred sites.

In this study I will examine Classic lowland Maya (Figure 1) mortuary remains found in Barton Creek Cave, of west central Belize (Figure 2). The Barton Creek Cave site is of particular interest because of its extensive use by the ancient Maya. Artifacts, hearths, modified cave formations, and human remains were found on numerous ledges above a subterranean river, indicating that this cave was of great importance in past times.

The main purpose of this thesis is to determine the identity of the individuals that were afforded interment within the cave. This question will be explored through the investigation of skeletal materials and their context, and a reconstruction of the mortuary patterns at Barton Creek Cave. Specifically, my goal is to determine whether these individuals are victims of sacrifice or whether they represent revered remains of



Figure 1: Map of the Maya Lowlands showing cultural and geographical features (Sharer1994)



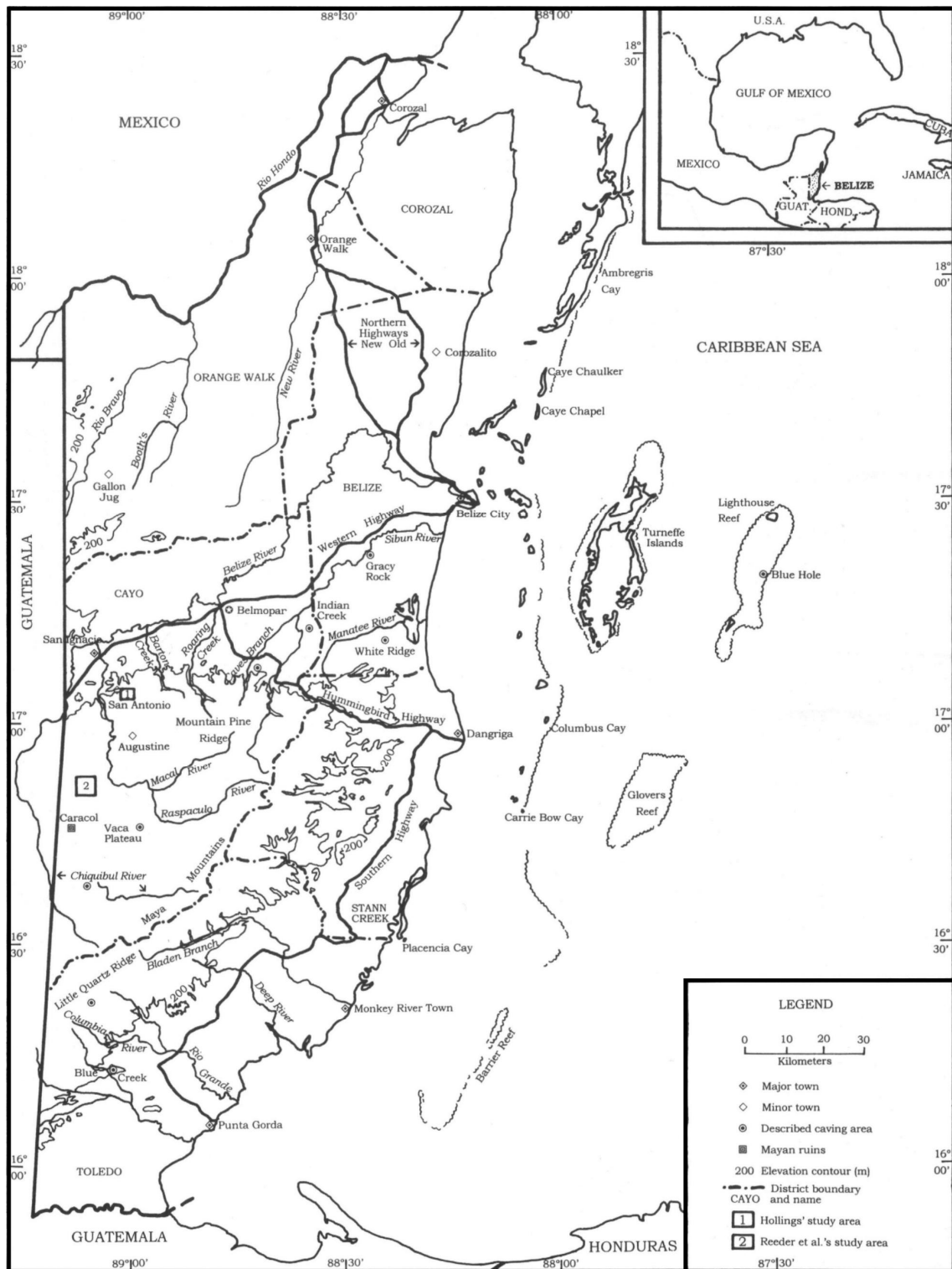


Figure 2: Map of Belize showing speleological, cultural and geographical features (from Veni 1996)

ancestors. These explanations form the basis of my two main hypotheses and shape the methodological approaches used to test the skeletal, archaeological, and general contextual data from Barton Creek Cave. The primary objective of this investigation is to increase our understanding of the ritual use of caves by the ancient Maya.

Interest in this particular topic was prompted by debates regarding the presence of human skeletal remains in caves throughout the Maya region. Thompson stated: “The rather frequent occurrence of human bones in caves used for religious ceremonies, even down to recent times, is puzzling. One wonders whether these may indicate some form of ancestral cult” (Thompson 1959:129). More recently, Brady has argued that sacrifice is also a plausible explanation for the presence of human remains in caves, and criticizes cave archaeologists for being *too slow* in detecting possible cases of human sacrifice in caves (Brady 2000, emphasis mine). Investigations of caves in recent years support the ancestral and/or lineage cult theory as well as the theory of sacrifice (e.g. Brady 1989; Gibbs 2000; Prufer and Dunham 1997; Reents-Budet and MacLeod 1986). Little has been done, however, to distinguish between these two types of mortuary practices within the context of cave ritual.

In west central Belize, archaeological investigations indicate that a multitude of caves have been utilized by the ancient Maya as evidenced by high quantities of ceramics, stone tools, hearths and human remains in caves. Under the direction of Dr. Jaime Awe of the Western Belize Regional Cave Project, and the Department of Archeology in Belmopan, Belize, I was able to conduct archaeological research in an effort to study the mortuary practices of the ancient Maya from one particular cave site, Barton Creek Cave. The Barton Creek Cave site in Cayo District, Belize, includes the

skeletal remains of at least 31 individuals. The cave is also rich in archaeological materials and cultural features, thus providing a preserved record of the past to explore questions about the ritual use of the cave.

This thesis incorporates the results of the mortuary investigations conducted at the Barton Creek Cave site between 1998 and 2000. The format of this thesis is designed to provide the reader with the necessary background information to understand the nature and purpose of this research. A discussion of the development of cave archaeology as a discipline sets the stage for understanding how theories regarding the use of caves by the ancient Maya have evolved. Background information on ancient Maya mortuary practices is included to illustrate current knowledge of the various ways in which the Maya treated their dead, and subsequently, the theoretical approaches that are used to study such practices. This information will allow for a greater understanding of the mortuary practices that took place in caves in the Maya area. Then, a synopsis of mortuary theory in archaeology is presented. Mortuary archaeology and theory has undergone significant paradigm shifts in recent years, which have directed the methodological approaches to this investigation. The methodology adopted for this study follows the discussion on mortuary theory. In addition, a description of the site setting provides an environmental and cultural backdrop for the Barton Creek Cave site. A description of the skeletal material and mortuary data precede the final interpretation and summary of the mortuary practices that took place in Barton Creek Cave in ancient times. Concluding remarks provide suggestions for future research.

## **CHAPTER 2: The Study of Caves and the Ancient Maya**

Our understanding of the use of caves by the ancient Maya stems from three types of sources: archaeological studies, ethnographic reports, and ethnohistoric accounts (McNatt 1996). Archaeological investigations of caves have provided the majority of our knowledge on Maya cave use; however ethnographic and ethnohistorical sources have yielded significant insight into the ritual and ideological aspects of caves. In this chapter, I will focus on archaeological cave studies (particularly in Belize) and their emergence as a discipline within Maya archaeology, followed by a discussion of the current theories regarding ancient Maya cave use.

### ***Maya Cave Archaeology***

Archaeological investigations of the use of caves is a relatively new endeavor in Maya archaeology, and has particularly intensified in both scope and practice in the past three decades (Awe 1998; Bonor 1988, 1989; Brady 1989; Brady and Stone 1986; Graham et al. 1980; MacLeod and Puleston 1978; McNatt 1996; Pendergast 1974; Prufer and Dunham 1997; Reents-Budet and MacLeod 1986). There are currently a number of large-scale projects dedicated to expanding our understanding of ancient Maya cave use and incorporating this information within the larger framework of Maya prehistory. However, intensive investigations of caves are a relatively recent phenomenon and have

largely been ignored by archaeologists when one considers the history of Maya archaeological research (Brady et al. 1997: 353; Brady and Prufer 1999:133).

There are several explanations for this lag in cave research. First, and most important has been the prevailing attitude that caves did not warrant “the expenditure of any real money or effort” (Anderson 1962:326). In large part, this attitude was due to the preferential excavation and research at the largest and most elaborate sites by prestigious academic institutions. This concentration on the larger sites occurred during a period Hammond (1982:20) refers to as the “institutional domination,” which characterizes the field of Maya archaeology from 1924 to 1970 (Brady 1989; Brady et al. 1997:353). This top-heavy model dominated much of the research and resulting literature until the 1950s and 1960s. At this time, settlement pattern studies and other avenues of research were initiated or accelerated, in part, as a response to the preferential investigations of Classic-period elaborate architecture and elite residential units (Ashmore 1981; Ashmore and Willey 1981; Bullard 1960; Pollock 1980; Willey et al. 1965).

Archaeological investigations of caves also gained recognition at this time as archaeologists became increasingly aware of the limitations of the research conducted during the “institutional domination” period. Prior to this, investigations of caves were uncommon. Perhaps some of the earliest efforts can be credited to the work of Henry C. Mercer (1896, 1897) and E.H. Thompson (1897), whose reports “were not matched in quality for over fifty years” (Brady 1989:12). Mercer conducted one of the most extensive surveys of caves in the Yucatan, produced numerous maps, and published *The Hill Caves of Yucatan* (1896), which was important for the information it contained (Brady 1989:11). In a similar manner, Thompson published his work at Loltun Cave

(1897) in the Yucatan and included artifact illustrations, and photographs of significant features (Brady 1989:12). These detailed reports are recognized as a significant contribution to the emergence of cave archaeology.

In Belize, formally British Honduras, the earliest reports of cave research stem from a number of British Museum Expeditions (from 1894 to 1930) at the Pushila ruins and cave site (Gann 1928; Gruning 1930; Joyce 1929; Joyce, et al. 1928). These early investigations made important contributions to cave archaeology because they represent some of the first formal institutional work to be conducted at cave sites (McNatt 1996:82). However, they are also criticized because the reports are brief and cursory, make little attempt to synthesize the data, and lack sufficient explanation for the use of caves by the Maya (Brady 1989:19).

Between 1931 and 1954 there was a “hiatus” in cave research, with few formal expeditions or publications (Brady 1989; McNatt 1996:83). The few incidental explorations that occurred during this time resulted in superficial reports lacking detailed description of the caves and their contents, and with little to no regard for systematic methodological approaches. However, in the 1950s and 1960s an improvement in the quality of cave reports occurred, such as E. Wyllys Andrews’ reports on Balankanche in Mexico. Andrews was influential because he emphasized the ceremonial aspects of caves and provided detailed descriptions of modern Maya cave ceremonies (Andrews 1965, 1970; Brady 1989:21, 23). Also important to the advancement of cave archaeology was the establishment of the Belizean Department of Archaeology (DOA) in 1955, with A.H. Anderson as Archaeological Commissioner (Graham et al. 1980:153; McNatt 1996:82).

Anderson's interest in caves led to the excavation and documentation of a number of cave sites in Belize, results of which were later published (McNatt 1996:82).

Pendergast continued the work started by Anderson, and also carried out a number of investigations of cave sites in Belize. He published a number of monographs based on his investigations (Pendergast 1969, 1970, 1971, 1974), and thus gained the reputation as one of the primary figures in Maya cave archaeology (Brady 1989:25; McNatt 1996:82). These particular studies, in addition to the increasing number of reports published and investigations that were being conducted at the time, proved significant to the advancement of cave archaeology. For instance, Pendergast's reports are important because of the attention to detail including maps, descriptions and analyses of artifacts, illustrations, and a systematic method of artifact collection (Brady 1989:25). However, one of the most important contributions to our understanding of the use of caves is Thompson's (1959) publication titled "The Role of Caves in Maya Culture" for it represents one of the first attempts to synthesize the data on the use of caves by the Maya. Thompson also draws attention to and stresses the ceremonial/religious nature of caves (Brady 1989; Brady and Rodas 1995:22-23; Thompson 1959:122).

Even after the publication of Thompson's (1959) report, research on caves continued to be somewhat limited in scope and infrequent relative to the advancing discipline of Maya archaeological research (Awe 1998; Brady 1989). Possible reasons for this lag include the dangerous terrain of the caves, insufficient lighting, and various logistical problems that arise from working in this type of environment. However, in the 1970s, the Commissioner of Archaeology in Belize, Joe Palacio (1977a,b) initiated a program for cave exploration (Awe 1998). The DOA hired two Peace Corps volunteers,

MacLeod and Rushin, and together with DOA they mapped and documented numerous cave sites (McNatt 1996:82; Rushin-Bell 1982).

What followed was an explosion of Maya cave research, and this pace continues today. MacLeod and Reents-Budet launched a large-scale project at Petroglyph cave in 1978. In addition, speleological and geomorphological interest in caves was on the rise and resulted in the discovery of many large cave sites evidencing pre-Columbian Maya activity (Marochov and Williams 1992; Miller 1990; Reeder 1993). Mutual cooperation between archaeologists and geomorphologists has increased our understanding of differences between natural formation processes in caves versus cultural modifications (Awe 1998; McNatt 1996). Thus, the increase in both the quality and quantity of cave research, along with a more interdisciplinary approach, was influential in the advancement and recognition of cave archaeology within the larger context of Maya archaeology over the past three decades.

The next advancement of cave archaeology as a discipline occurred with the shift in focus to the *interpretation* of Maya cave use within the larger framework of Maya archaeology. Archaeological cave research broadened in scope to include iconographic, ethnographic and epigraphic studies in order to interpret cave art, rituals and symbolism (Awe 1998.; Bassie-Sweet 1991, 1996; Bonor 1988; Brady 1989; MacLeod and Puleston 1978; Pohl and Pohl 1983; Stone 1987, 1989). The investigation of caves in Honduras and Guatemala by James Brady embodies the advancements that had been made in cave archaeology. Brady's work, particularly his research at Naj Tunich in Guatemala, reflect the broader, more interdisciplinary approaches that were occurring at this time, and focus on social context and spatial relationships between caves and surface sites (Brady 1988,



1989, 1991; 1995, 1997; Brady and Ashmore 1999, Brady et al. 1997). Brady's numerous publications and his active participation in cave archaeology have helped to advance it as a recognized field in Maya studies.

Maya cave archaeology, in its present state, is considered to still be in its infancy because large-scale systematic research dedicated to the study of Maya cave use has occurred only recently. Thus, new ceremonial patterns and other aspects of cave use continue to be discovered or recognized (Brady and Prufer 1999:133). It is these theories that will be discussed below.

### ***Current Theories Regarding the Use of Caves by the Maya***

Few researchers would deny that caves were a significant component of the ancient Maya world; however, people have interpreted cave significance in a variety of ways through ethnographic, ethnohistoric, and archaeological investigations. The predominant theories regarding the use of caves by the Maya will be reviewed. These include cosmological beliefs, associations with deities, religious ritual, and the association between caves and the dead.

#### **Cosmological beliefs**

Caves are a vital component of Maya cosmology. For instance, the Maya universe consists of three levels: the sky, the earth, and the underworld. Thompson interprets these realms as: "the sky, its powers, and its personifications stand for goodness and light which inspire confidence and right doing; the underworld, with its associations with death, upholds the powers of evil to whom belongs darkness, a cloak for fearful beings which then issue forth to harm man" (Thompson 1970:195). Caves are considered to be an important natural feature in the Maya sacred landscape as they

provide a point of access to other realms in the cosmological order (Brady and Prufer 1999:129; Thompson 1970: 367; Vogt 1969, 1981).

Many believe that the Maya viewed caves as entrances or portals to this underworld, and like Thompson, attribute negative connotations to this realm in the cosmological order. For instance, ethnohistoric accounts characterize the underworld as a place where evildoers were tormented in the afterlife (Aguilar 2000; Tozzer 1941:131-132). This “Dante-like” (Reents-Budet 2000) interpretation of the underworld is probably a reflection of Christian beliefs, as many sources depict the underworld as “a suspiciously hellish place frequently opposed by an equally suspicious celestial paradise” (MacLeod and Puleston 1978:71).

In the Classic Maya lowlands this underworld was known as Xibalba and, according to the *Popul Vuh*, a sixteenth century book on Maya creation, was thought to be inhabited by unpleasant, tyrannical and cruel underworld deities (MacLeod and Puleston 1978:71; McNatt 1996:81; Tedlock 1996). It was believed that souls of the dead were required to journey through Xibalba, suffering various tests of wisdom and courage. In addition, the Maya believed that the sun had to successfully complete a trying journey through Xibalba each night, taking the form of the Jaguar God of the Underworld (McNatt 1996:81).

This negative association with the Maya underworld ignores the positive aspects of caves, such as the association of caves with rain, fertility and life. A shift in focus away from negative underworld associations has led archaeologists such as Brady to suggest that caves are more likely to be associated with the earthly, more positive realm in the cosmological order (Brady 2000). This contradicts the Dante-like concept of caves

as they are increasingly being viewed as reflecting positive associations. The connection between caves and earth deities is an avenue of research that is currently under investigation. Nevertheless, negative, underworld themes (such as caves and their association with death and sacrifice) seem to predominate in the literature on the role of caves in Maya cosmology, as caves continue to be viewed as portals to Xibalba.

### Association with Deities

Another predominant theme in theories regarding Maya cave usage is their association with deities. Caves were viewed by the Maya as sacred sites that functioned as abodes for deities associated with the earth, the underworld, and rain. This belief is common throughout Mesoamerica, both in ancient and modern times (Brady and Stone 1986). Among the modern Tzotzil Maya, one form of illness may result when one's soul is sold to the cave-dwelling Earth Lord (Brady and Prufer 1999:130; Vogt 1969). These Maya along with other contemporary Maya people still believe that rain gods live in caves and they cause it to rain by driving the lightning and rain clouds out of the caves and into the sky (Brady and Stone 1986:18; Thompson 1970).

Ethnographic studies have demonstrated that the modern Kekchí Maya perform various ceremonies in caves to pray for rain in order to encourage crop fertility during the dry season (Gould 1968:167). Moreover, Christenson's research in the highlands of Guatemala demonstrates that contemporary Maya traditionalists consider caves to be the "mouths of the world, giving access to spiritual realms inhabited by sacred beings who have influence over natural phenomena of importance to the outside world. It is the place where rain clouds are formed, as well as the winds that bear them across the sky to bring fertility and new life" (Christenson 2001:1).

The belief that caves are strongly associated with various deities is a theme that predates the Spanish conquest and carries through to today as demonstrated by ethnographic research. In addition to ethnographic references, ethnohistoric sources (such as the Popul Vuh), and archaeological data (i.e., fragmented remains of censers, which are vessels for burning incense, and agricultural implements possibly geared towards the worship of certain deities) suggest an important link between various deities and caves (Christenson 2001:1; Tedlock 1996:91–102).

### Religious Ritual

One of the more general themes is the belief that caves were used for conducting various religious rites. The association of caves with basic Maya concepts regarding life (rain, fertility) and death (negative underworld themes, sacrifice) suggest that multiple purposes existed for conducting religious ritual in caves (McNatt 1996; Thompson 1959). According to McNatt, reasons for conducting ritual in caves often involve pleas for rain, crop fertility, success in hunting, prevention of illness or disease, and rituals involving jaguar and underworld deities, calendrical period endings, and death (McNatt 1996:85).

Ethnohistoric documents suggest that religious rituals in caves were primarily associated with rain, good crops and good hunting (Thompson 1959:123). Observances of such rituals have been reported throughout Mesoamerica (in historic and present times) and reportedly involved the worship of idols, the sacrifice of children and the burning of *copal* incense (McNatt 1996; Thompson 1959:22). Ethnographic sources also report the practice of religious ritual in caves. For instance, the Kekchí Indian *pom*-burning ceremony inside a cave in Alta Verapaz occurs during the latter part of the dry season in order to encourage rain for the crops (Gould 1968:167).

Another example of the association of caves with religious ritual is the collection of *zuy'ha*, or “virgin” water. *Zuy'ha* was used in religious ritual and had to be pure and uncontaminated. It was collected by placing vessels beneath dripping cave formations (such as stalactites) in areas of the cave where contamination, particularly from contact with women, was least likely (Thompson 1970:184). Thompson has suggested that the copious fragments of broken pottery that often are found strewn throughout caves support the theory that the Maya collected this sacred water from caves for religious purposes (1970:184).

#### Places for the Dead

The belief that caves served as depositories for the dead has been accepted in much of the literature on Maya cave use. For instance, early archaeological discoveries of human remains in caves led archaeologists like Adrian Digby (1958), who investigated Las Cuevas in Belize, to suggest that the cave was used as a mortuary chapel, or “a vast mausoleum where the cremated remains of countless dead Maya were deposited” (Digby 1958:275).

The presence of human remains in caves is believed, by some, to be affiliated with the underworld. Brady et al. (1997) suggest that since caves are viewed as entrances to the underworld – a place where the souls of the dead reside – interring individuals in caves would aid in the journey to the underworld and ensure that their souls would not wander amongst the living (Brady and Stone 1986:18). This view is shared by the Modern Tzotzil Maya who believe that caves provide the pathways used by the souls of the dead when they make their journey into the underworld (Brady and Stone 1986:18).

This particular theme, of death and its association with caves, will be explored in more detail in the chapters to follow.

### **CHAPTER 3**

#### **Maya Mortuary Practices and the Mortuary Use of Caves by the Maya**

Reconstructing the mortuary practices of past human cultures is both a challenging and fascinating task for the archaeologist. Perhaps the predominant method used by archaeologists in this type of study is examining patterns of differentiation that exist in the mortuary record. Mortuary variability both within and between cultures is a valuable tool for archaeologists who are interested in uncovering societal differences such as rank, gender, and occupational specialization.

In order to better understand the mortuary practices that occurred within Barton Creek Cave, it is important to compare them with those of the other Late Classic Maya. Focusing on the discrepancies between some of these cave mortuary practices and their better-known, surface-site counterparts may reveal important information regarding the Maya's concept of death and its association with belief systems and possibly cosmology. For example, if cave mortuary practices differ significantly from surface-site mortuary practices for the observed area, one might investigate whether the individuals interred in caves were considered "deviants" by their society, as suicides are in Christian burial practices. This chapter will outline a number of themes in Maya mortuary studies, particularly those of the Late Classic lowland Maya, followed by a formulation of the two hypotheses that were used to explore questions regarding the mortuary use of Barton Creek Cave by the ancient Maya. The purpose here is to compare and contrast Maya mortuary practices with those at Barton Creek Cave to determine whether Barton

Creek Cave mortuary practices “deviate” from what might be considered the norm for the area. Also, a review of themes in Maya mortuary studies will provide necessary background information to introduce the two main hypotheses of this thesis.

### ***Current Perspectives on Maya Mortuary Practices***

Much of what we know about Maya mortuary practices and Maya attitudes towards death is derived from ethnohistoric sources, such as the sixteenth-century writings of Bishop Diego de Landa, and contemporary ethnographic research. Landa’s accounts reflect an incredible fear of death among the Maya. Landa writes:

This people had a great and excessive fear of death... When in time they came to die, it was indeed a thing to see the sorrow and the cries, which they made for their dead, and the great grief it caused them. During the day they wept for them in silence; and at night with loud and very sad cries, so that it was pitiful to hear them. And they passed many days in deep sorrow (Tozzer 1941:129).

Coe reflects on this statement by Landa and believes that death was indeed a major preoccupation of their culture (Coe 1984:87); however, Landa’s statement may also reflect his own Christian bias. To the Maya, the concept of *death* went beyond the passing away of a community member; it was about the journey or passage of the soul to the otherworld. Landa noted that the Yucatec Maya believed in the immortality of the soul and particularly its destination to a kind of heaven if one’s life was virtuous. Evil persons, on the otherhand, were destined to a Maya-like “hell” where they would be “tormented in it by the devils and by great extremities of hunger, cold, fatigue, and grief” (Tozzer 1941:89). As previously stated, this “Dante-like” interpretation of the underworld is probably a reflection of Christian beliefs (MacLeod and Puleston 1978:71).



Both ethnohistoric and ethnographic sources have stressed the Maya's concern with the passage of the soul, particularly as evidenced by certain mourning rites and mortuary rituals. Landa noted that upon the death of a loved one there was a period of mourning in which the spouse would fast, and the family would provide the deceased with his/her personal belongings, which were often associated with one's profession. Jade stones may have also been included, which could be used as money for food in the afterlife (Aguilar 2000; Coe 1984:87; Tozzer 1941:130).

According to ethnographic studies, such as Aguilar's research on the modern Maya in rural Mexico, similar concerns with the dead are evident in modern death rites. For instance, upon the death of an individual, family and friends conduct a farewell ceremony or vigil. The following day the objects required for the deceased's afterlife are presented, which include tortillas and a bowl of *atole* (a hot beverage made with corn), clean clothes, a comb, and for women a needle and thread. The soul then wanders in the house for eight days while they burn *copal* for prayer. Finally, the deceased is buried with the presented belongings (Aguilar 2000).

Although ethnohistoric documents and ethnographic research have provided archaeologists with significant clues with which to approach the study of ancient Maya mortuary practices, understanding Maya perspectives on death requires a further understanding of whether these fears and preoccupations are reflected in the material record. One way to approach this task is to examine various attributes in the mortuary record such as grave types, burial orientation, and the inclusion of grave goods, to name a few.

### Burial Location

The location of the burial in the landscape can provide insight into the beliefs and practices of the ancient Maya, and about various details of the deceased's social persona. Among the Classic lowland Maya, burial locations include the floors of plaza platforms, patios, residential rooms, temples or temple stairways; and within construction refuse, *chultuns* (constructed cisterns), caves, and *cenotes* (Aguilar 2000; Coe 1984; Ruz 1965:443). One of the primary factors driving burial location in ancient Maya society was socioeconomic status. Landa noted that important men were often placed in urns and had temples built over them (Landa cited in Aguilar 2000). Archaeologists have also observed that leaders and others of importance were buried in important places such as ceremonial structures (Ruz 1965; Welsh 1988a). Commoners, on the other hand, were typically buried below the floors of house mounds or house platforms (Welsh 1988a). Factors driving the placement of individuals in *chultuns*, caves and *cenotes* appear to be less driven by socioeconomic status and more likely attributable to other factors such as sacrifice, lineage, or religious ritual.

### Burial Types

Over the course of the development of Maya archaeology, various typologies for burials have emerged (Coe 1959, Ruz 1965; Welsh 1988a). Ruz (1965) produced one of the first publications dealing exclusively with Maya burial practices and created a burial typology that has become the template for many present-day Maya archaeologists. According to Ruz, types of burials may be: (1) *simple*, which are basically holes in the ground or fill of a building without special features; (2) in *caves or chultuns*; (3) in *cists*, which consists of a better-defined grave (when compared to simple graves), often with

constructed walls or stones to outline or mark them; (4) in *graves*, which are typically constructed of masonry or slabs, with a cover, and may or may not have a stucco floor; and (5) in *chambers*, which are rooms of varying size in which one can stand and that exhibit well-constructed masonry walls and vaulted roofs. These may have been built originally as burial chambers or may be civil or ceremonial structures that were later used as tombs (Ruz 1965:442-443).

Differentiation of burial types within a past society may provide important evidence regarding the social status of deceased individuals (Parker Pearson 1999; Tainter 1975). For instance, Ucko's research on mortuary practices has led him to conclude that "in the vast majority of cases known ethnographically, a culture or society is not characterized by one type of burial only, but... on the contrary, one society will undertake several different forms of burial and... these forms will often be correlated with the status of the deceased" (Ucko 1969:270). Among the ancient Maya, differentiation in burial types seems to be strongly correlated with the social status of the deceased. Important rulers and Maya elites were typically afforded burial in tombs and chambers. Commoners, on the other hand, were more likely to be interred in simple pit graves or cists. As is the case for many cultures, there are exceptions to the rule, particularly when it comes to age and gender distinctions. For instance, Maya women of status were typically afforded a less ostentatious burial than men of equivalent status.

### Burial Orientation

Burial orientation here means specifically the direction towards which the head of the deceased pointed in a grave (Welsh 1988a:52). When archeologists investigate burial orientation, often they are seeking prevailing orientations, regional patterns and

differences, links to cosmology and religious belief, and correlation with grave context (1988a:52). Deviations from the norm can often reveal something about the community's perception of the deceased individual. For instance, suicides are often buried opposite to the standard orientation of the community's deceased due to societal beliefs in the afterlife. For example, traditional Christian burials were oriented with their long axes on the east-west line and the deceased's head to the west. This orientation is based on the belief that the deceased would rise on Judgment Day and walk towards sun, or God in the east (Spence 1995). Suicides, however, were buried with their heads to the east and their feet to the west, effectively denying them entry to Paradise (Spence 1995).

Usually, the burial orientation is recorded through the use of cardinal directions but may also be related to structural orientations. The prevalent burial orientation at the western Belize sites of Barton Ramie, Benque Viejo, San Jose and Holmul are heads oriented to the south, a pattern that Welsh believes may be a regional phenomenon (Welsh 1988a:52-55). However, regional variations in burial orientation for the Maya area are common, so there are no burial orientations that are distinctly "Maya" (Coe 1959; Ricketson 1925; Robin 1989; Ruz 1965; Welsh 1988a).

### Burial Position

The burial position of the deceased can vary in a number of ways. For instance, the deceased's body can be placed in a prone or supine position, can be flexed or extended, and can also be placed in a sitting position (Parker Pearson 2001:6). Burial positions that deviate from the norm, such as those lying sprawled in dramatic poses may suggest that death occurred immediately prior to interment of the body. Parker Pearson suggests that "it is through comparison and contrast that archaeologists discover what are

the normal postures in order to recognize the anomalies” (2001:6). Therefore, differences in the placement of deceased individuals may help to reveal patterns both within and between groups (2001:6).

Among Classic lowland Maya burials, no one position predominates, and in fact, all of the above named positions have been observed; however, the most common positions are extended supine and flexed, respectively (Coe 1959:130; Welsh 1988a:37-42). In some cases, the position of the deceased is dependant on grave size or position, such as the sites described by Welsh in which the flexed position predominated because of the smaller dimensions of simple graves (Welsh 1988a:39).

### Grave Goods

Grave goods are the material items that are found in association with burials and may include possessions of the deceased or mourners’ gifts to the dead (Parker Pearson 2001:7). Often the inclusion of grave goods with a burial serves to equip the dead for the world of the afterlife, or to prevent the dead coming back to haunt the living. These material remains can often represent the individuals’ occupation, position in society and socioeconomic status, or the nature of the burial ritual and the individuals responsible for the deceased (Gillespie 2001; Parker Pearson 2001). In contemporary archaeology, it is often argued that grave goods are a direct reflection of rank (Binford 1971; Tainter 1978); however, many archaeologists have challenged this idea and suggest that grave goods can mask social relations and identities rather than accurately reflect them (Gillespie 2001:77).

Among the ancient Maya and other Mesoamerican cultures, grave goods at many sites are a reflection of rank (Chase and Chase 1992, 1994; Haviland 1997; Haviland and

Moholy-Nagy 1992). Elite tombs were often well stocked with fine pottery, jades, *Spondylus* shell and other objects that are generally not found in lower-class graves. Commoner graves, on the other hand, may only include a few ceramic vessels with other “mundane” household belongings that generally do not match the quality or quantity of their higher-class counterparts (Haviland and Moholy-Nagy 1992:53). As is the case with many other cultures, the larger social context must be taken into account when assessing the relationship between rank and grave goods. Factors such as age, gender, and temporal trends hinder the direct correlation between rank and grave goods and must be considered in the general interpretation of material remains in mortuary contexts (Chase and Chase 1994; Haviland 1997).

### ***Other Maya Mortuary Practices***

The previous section of this chapter provided an overview of some of the standard mortuary practices and burial types that were common among the Classic Lowland Maya. However, other forms of mortuary practices also existed and are particularly relevant to the topic of this thesis. Certain beliefs regarding human sacrifice, ancestor worship, and mortuary practices that took place in caves in the Maya region will be reviewed in the following section. Two hypotheses to explain the presence of human remains in Barton Creek Cave will also be formulated.

### **Human Sacrifice in Mesoamerica**

Archaeological, ethnographic, ethnohistoric and iconographic evidence has revealed that human sacrifice was an important component of the ritual history of Mesoamerica (Conrad and Demarest 1984). The modern Mixtec define sacrifice as

“presenting something to a god” as part of the notion that people negotiate with the gods through sacrifice (Monaghan 1995:216). However, sacrifice, in ancient Mesoamerican terms, is much more complex. For instance, the San Francisco dictionary of Yucatec cites several different words for sacrifice, each pertaining to a different sacrificial method (Schele 1984). The ethnohistoric accounts of Landa and Cortés describe several of these sacrificial methods, including death by arrow, heart excision, starvation, ritual combat and decapitation (Conrad and Demarest 1984; Schele 1984). Although human sacrifice was practiced by the Maya (but less frequently than other Mesoamerican cultures such as the Aztec), much of the literature focuses on the “pan-Mesoamerican” practice of human sacrifice and will be reviewed here as such.

Colby (1991) has argued that there are two types of evidence with regard to human sacrifice: *direct* and *indirect* evidence. The actual physical remains of the sacrificial victim are the only direct evidence of human sacrifice recoverable archaeologically. Much of this evidence has been lost because of its perishable nature and through the inaccessibility and destruction of sites, but much remains to be discovered since, in most regions, relatively few sites have been systematically excavated (Colby 1991). Headless torsos and isolated crania may be indicative of sacrifice. Caution must be exercised in such an interpretation, however, because other ritual practices could result in the same pattern of body parts. For example, reverential ancestor-linked ritual can result in the discovery of a single cranium belonging to ancestor. In some cases, partial remains may simply represent post-interment disturbance or incomplete secondary burials.

Indirect evidence of sacrifice includes preserved paraphernalia, contextual data, ethnographic and ethnohistoric accounts, and representational depictions in iconography (Colby 1991). Iconographic evidence for human sacrifice in Mesoamerica consists of such things as pictographic books (such as the codices), statues of deities, carved reliefs, monuments, and carved and painted ceramic vessels (Graulich 1988; Kemapen 1978; Marcus 1992; McAnany 1995). Together, these sources constitute the majority of our knowledge regarding Maya human sacrifice.

Current interpretations regarding the pre-Columbian practice of human sacrifice have relied heavily on ethnohistoric and iconographic sources with little or no reference to archaeological evidence (Welsh 1988a,b). Despite the difficulties in identifying human sacrifice in the archaeological record, some archaeological sources can provide insight into the practice of human sacrifice that may not be available from other sources. The archaeological evidence for sacrifice can be identified through skeletal mutilation, burial position, burial context and artifacts associated with sacrifice.

Skeletal mutilation is often indicative of a violent death, and thus can potentially be linked to sacrifice. Evidence for skeletal mutilation includes decapitation, severed limbs, throat slashing, and heart extraction. In addition, multiple cutmarks on the crania and elsewhere may also be indicative of the flaying of skins, which, according to ethnohistoric and iconographic evidence, was a common occurrence following the death of the sacrificial victim (Mock 1998).

The burial position of an individual may also provide evidence for sacrifice. Fowler, for instance, noted that the majority of the extended burials at Chalchuapa, El Salvador, had right and left carpals and/or right and left tarsals touching, conveying the



distinct impression that these individuals had been bound at the wrists and ankles (Fowler 1984). The practice of binding the victim's hands has been supported by iconographic sources (Marcus 1992). In addition, the layout of the individual may be indicative of sacrifice. One of the most common positions for sacrificial victims in Prehispanic Mesoamerica is the "prone" or face-down position. At Kaminaljuyu in Guatemala, the death of a Preclassic lord prompted the sacrifice of a number of retainers (Figure 3) who were interred in the tomb in the "prone" position, whereas the ruler was placed in the more-standard "supine," or face-up position (Sharer 1994:96). Similarly, 27 of the 33 burials interred within the structure at Chalchuapa were placed in the prone position, thereby supporting the proposition that these individuals were victims of sacrifice (Fowler 1984).

The burial context may also provide clues as to whether or not sacrifice should be suspected as the cause of death. Some believe that the remains of commingled individuals within a single burial context (i.e., pit, grave, tomb) suggest that death may have taken place at a single point in time for the interred individuals (Larsen 1997; Sempowski and Spence 1994; Welsh 1988b). Welsh postulates that in the Maya site he analyzed the commingled remains of adults and children may represent the remains of parents interred with their slave or orphaned children. Welsh uses Landa's ethnohistoric evidence to support his claim by stating: "Landa observed among Yucatecan Maya that after the death of both parents, children of slaves, orphans or the offspring of deceased male relatives and slave women, were sacrificed" (Welsh 1988b:144). According to Welsh, burials containing two adults and children may represent the parents who had died

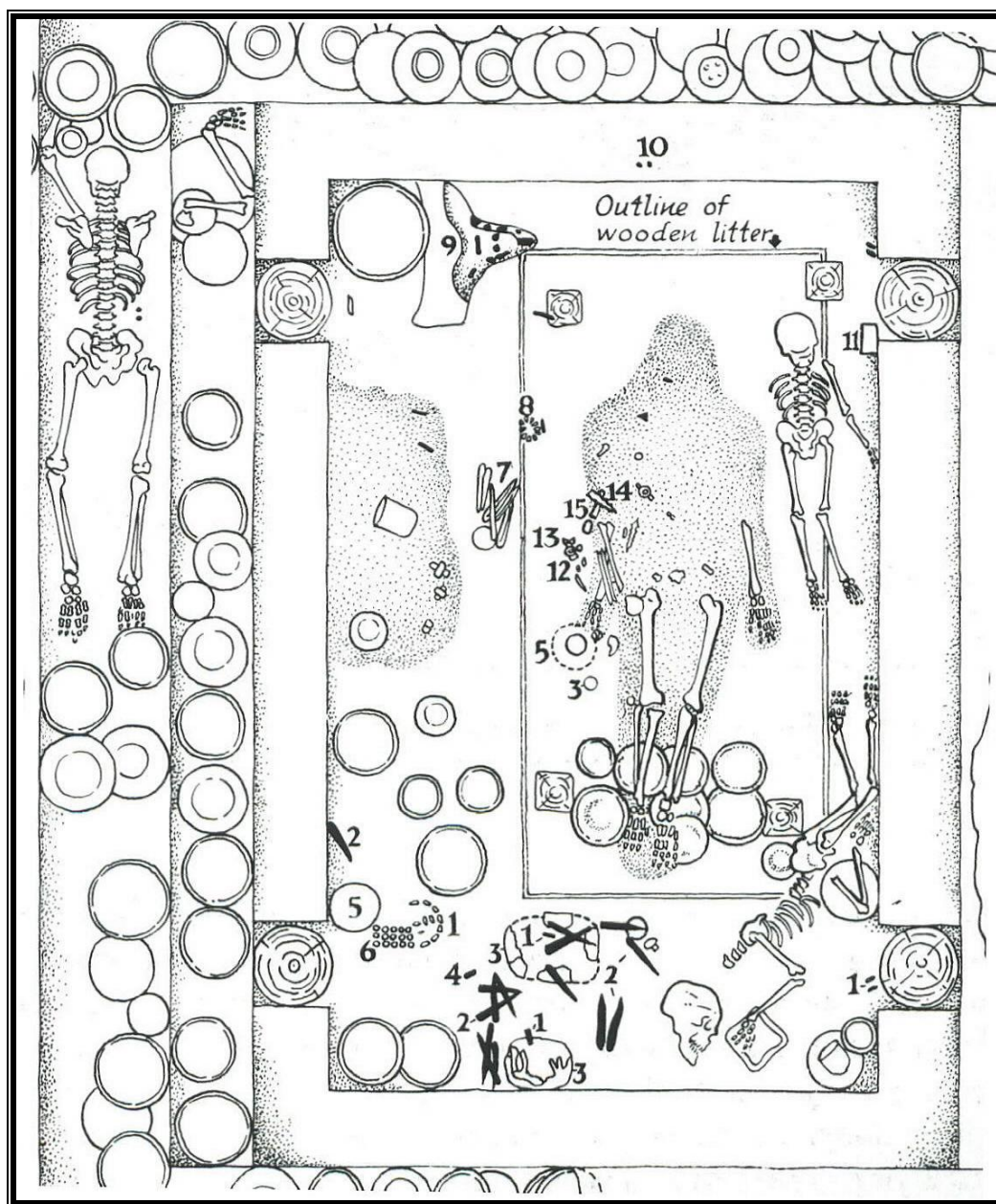


Figure 3: Plan view of Kaminaljuyu Retainers (from Coe 1993)

accompanied by sacrificed slave children, orphans or related offspring (1988b:144).

Similarly, Sempowski and Spence (1994) in a study of mortuary practices at Teotihuacan propose that the nature of the burial context, such as multiple individuals interred at a single point in time is indicative of human sacrifice. However, they also suggest that the apparent lack of emphasis on the individual in these commingled group burials, together with the simplicity of the offerings associated with them suggest that “these were not thought to have been individuals of great social importance – children, war captives, or others chosen by criteria not known to us, but nevertheless persons who were not of high social status in Teotihuacan” (Sempowski and Spence 1994:256).

These interpretations of Mesoamerican sacrifice consider things such as isolated crania or commingled remains as prime evidence of ritual sacrifice. However, McAnany cautions that this automatic attribution of missing parts to the ritual of human sacrifice is due partly to the more sensational attraction of this explanation (McAnany 1995:63). McAnany criticizes Welsh for his categories of evidence of human sacrifice which include: multiple interments of an apparently complete skeleton accompanied by an incomplete skeleton (usually decapitated) or secondary urn burials at locations in which caches usually occur, such as under stelae, altars, or temple stairs; finally interment with missing skeletal elements, such as headless bodies, bodies without femurs or lower legs, legs without bodies (McAnany 1995:63). McAnany cautions, based on ethnographic and ethnohistoric Maya sources describing the ritual behaviour associated with the deposition of dead ancestors, that all of these burials could equally well be the result of reverential rather than sacrificial behavior (McAnany 1995:63). She suggests that evidence for opening and resealing of a tomb containing partial remains would indicate ancestor

reverence rather than sacrifice (1995:63). Thus, it may be necessary to draw on additional evidence to support one's claim.

In addition to methodological approaches to the identification of human sacrifice, various attempts have been to explain the origins and perpetuation of human sacrifice, and can be classified into three main themes. These include reciprocal obligations to the gods, dedicatory functions, and sociopolitical factors including warfare and symbolic expressions of political subordination. Sacrifice, as a means to appease or commune with the gods is a premise that is shared by many authorities. Ortiz de Montellano (1978) suggests that human sacrifice developed as a gesture of thanks and reciprocity to the gods (Ortiz de Montellano 1978:64). The theme of reciprocity had its origins in Prehispanic Mesoamerican mythology. For instance, the Nahuas believe that the gods sacrificed themselves by spilling their own blood for the existence of humanity, so it logically follows that human beings had an obligation to reenact "that primeval action by giving in return, in order to pay and restore" (Leon-Portilla 1993:49).

Dedicatory reasons for sacrifice are most frequently associated with the inclusion of one or more sacrificial victim in association with the construction or termination of an architectural structure. For instance, ballcourts throughout the Maya highlands were dedicated through the interment of sacrificial burials in order to give life to the building (Fox 1996). Dedicatory sacrifices may also exist on a much smaller scale, such as the inclusion of infants within the walls of residential structures (Sempowski and Spence 1994), as well as a larger scale, such as the thirty-three victims interred within the construction fill of a structure at Chalchuapa (Fowler 1984).

In addition to religious and dedicatory reasons for sacrifice, a number of sociopolitical factors have been argued to be primary reasons for sacrifice, including warfare and the symbolic expression of political subordination. For instance Fowler (1994) suggests that the individuals interred within the structure at Chalchuapa were sacrificial victims based on the fact that at least 21 of the 33 individuals are males. He interprets these individuals to be war captives for the purpose of sacrifice. Themes of political subordination through symbolic expression are also evident in Mesoamerica. At the Maya site of Colha, Belize, a shallow pit containing thirty flayed and mutilated skulls has led Mock (1998) to suggest that this sacrificial event was a ritual termination of their elite power and identity by the conquering group (1998:113, 119).

### Ancestor Worship

Another mortuary practice that has been observed for the ancient Maya is ancestor worship, although there is less literature on this topic than that of Mesoamerican human sacrifice. Ancestors play an important role in Maya culture. “Ancestors,” according to contemporary Maya, refer to “either the souls of departed kin group members or the souls of the founding members of the community and all subsequent leaders and ritual specialists” (Bassie-Sweet 1996:16). According to Bassie-Sweet (1996) these latter souls comprise the supernatural government whose primary roles are to protect the community. In return, the community performs various rituals to reciprocate through *ancestor veneration*, which is defined as “rituals and practices surrounding the burial and commemoration, by name, of apical ancestors of kin groups” (McAnany 1995:11).

Ethnographic research on ancestor veneration indicates that only specific individuals within a descent line become ancestors. In other words, ancestor veneration

is not extended equally to all of the community's or lineage's dead, but is employed when individuals of importance and influence pass away, a pattern that is consistent throughout the Americas as well as the Maya region (McAnany 1995:11). McAnany is one of the lead authorities on the role of the ancestor in ancient Maya culture, and suggests that ancestors were venerated because of specific resource rights and obligations inherited from them by their descendents, an idea which she believes explains why deceased relatives are interred under the floors of their houses, or in nearby shrines or structures (1995:160). She states:

Ancestors 'slept' within the construction mass of residential compounds – to insure the chain of continuity in resources are transmitted between the generations. These contexts are, in effect, domestic mausolea [subfloor and shrine burials].... Over time, these places of the ancestors become sacrilized locales at which ritual structures completely replace domestic structures (McAnany 1995:161).

McAnany argues that little attention is paid to ancestors in mortuary studies, and that this disregard ignores how ancestor veneration can directly affect the sex and age composition of skeletal remains (McAnany 1995:60). As previously mentioned, the role of the ancestor is typically reserved for leaders and prominent lineage members, making children, for example, unlikely ancestors (1995:60). With regard to gender, the patrilineal descent system among the Maya suggests that males are more likely to be candidates for ancestor status; however, McAnany noted from a shrine at Tikal that both males and females could attain ancestor status, a point that is further supported by the Tzotzil word for ancestral deities *totilme'iltik*, which means "fathers-mothers" (1995:61).

As McAnany (1995) has stated, ancestor veneration ultimately is not about the dead, but about how the living make use of the dead. Archaeologically, this means that

ancestor veneration involves a series of rituals involving the deceased that do not necessarily terminate in the placement of a full skeleton at the final burial place (McAnany 1995:11). The discovery of incomplete skeletons at Maya sites may be indicative of reverential, ancestor-linked skeletal processing, but has also proved difficult to distinguish from those resulting from human sacrifice (Massey and Steele 1997; McAnany et al. 1999:129; Nelson et al. 1992). Ancestor-related rituals often occurred at the place in which the ancestors' physical remains and/or spirit resided. For instance, ethnohistoric and ethnographic sources have suggested that caves played an important role in the rituals associated with ancestor veneration (Christenson 2001; Thompson 1959:129; 1975:xxxiii; Villa Rojas 1969:594; Vogt 1969:594).

The association of caves with ancestors has fueled a number of hypotheses regarding the presence of human remains in caves. The following section reviews some of the prevailing ideas regarding the mortuary use of caves by the ancient Maya.

### ***The Mortuary Use of Caves by the Maya***

From Maya mortuary studies it is evident that the Maya buried their dead in many different ways and in many different contexts including caves (Ruz 1965). However, caves were not the usual repository for the deceased and appear to have been reserved for the interment of certain members of the community (Brady 2000; Ricketson 1925:392-394; Thompson 1959:129). Therefore the question is why these particular individuals over other members within their community were placed in such dark and sacred places.

Early archaeological explorers of caves in the Maya area noted and described abundant human remains in caves but provided little insight in terms of explanations for their presence (Blom 1954; Butler 1934; Gordon 1898; Mercer 1896; Smith 1953;

Thompson 1897; Tozzer 1957). In his summary of Maya mortuary practices, Ruz (1965) attributed the presence of human remains in caves to geological conditions, believing that the lack of alluvial sediment in the Yucatan necessitated the use of caves for repositories for the deceased (Ruz 1965:458). However, Ruz's explanation does not account for the abundance of skeletal material in caves where the lack of alluvial sediment is not an issue, such as the Peten region and the Maya highlands. In recent years, however, archaeologists have explored this question by framing caves within the larger context of Maya cosmology and searched for links between mortuary rituals and perceptions of death.

One theme that has emerged from these investigations is a link between caves, death and the underworld. As previously mentioned, many believe that caves provide access to the Maya underworld, and therefore represent "darkness, death and the path taken by the souls of the recently deceased to reach the land of the dead" (Brady 2000). Thus, people have interpreted the "burials" in caves as the deliberate interment of individuals to assist with the journey of their souls to the underworld (Roberts 1990:124). Brady, however, believes that the practice of placing the individual at the start of the road of the dead is more akin to central Mexican ethnographic references than Maya (Brady 2000). Brady states: "While the connection with the underworld is undeniably present, most recent work has tended to treat caves as foci for various types of worship and, therefore, to see the interpretation of skeletal material as relating to a number of different themes" (Brady 2000). Two themes have emerged from the ethnographic and ethnohistoric sources with regard to the presence of human remains in caves; ancestor worship and human sacrifice. These will be explored in greater detail below.



### Ancestor Worship and Lineage Caves

Various lines of evidence indicate that human skeletal material found in caves represents the remains of revered ancestors or the members of a particular lineage. A number of archaeological investigations of caves in Mesoamerica have yielded skeletal deposits that support this claim, such as ossuaries which are thought to be linked to lineage burials. In Chiapas, Mexico, Blom (1954) discovered a number of Classic-period ossuary deposits, which he believes represent some form of lineage ossuary. He describes the deposit as piles or stacks of human bones and skulls that have “been placed without any specific plan” (1954:132). An ossuary known as Gordon’s Cave #3 near Copan, Honduras housed the remains of hundreds of individuals (Brady 1995; Rue et al. 1989:398). Such ossuary-like deposits in caves have been reported elsewhere in the Maya area and may represent a form of lineage burial or ancestor worship (Bonor 1995; Brady 1995, 1989; Chase and Chase 1994; McNatt 1996; Rue et al. 1989). Many other mortuary caves have been documented that may not necessarily be classified as “ossuaries.” For instance, in the course of their investigations in the southwestern Maya Mountains, Belize, Prufer and Dunham (1997) observed caves containing isolated individuals along with scatters of bones, which may represent a form of lineage/ancestor worship. They support McAnany’s statement that ancestral rituals can result in the placement of scattered remains, and criticize the lack of attention paid to partial skeletal remains in either surface or cave contexts. Moreover, mortuary evidence from four burial caves (located within one kilometer of each other) have led Prufer and Dunham to suggest that the Early Classic settlers “having moved into a new region distant from the remains of their ancestors and not yet having established strong lineage ties to the region,

might have resorted to interring their elites or shamans in caves” (1997:48-49). The link between regional or geographical ties and lineage/ancestors is supported by McAnany who states that the active role of the ancestor in the establishment of a sacred geography links “territorial places to ancestral time” (Salomon 1991 cited in McAnany 1995:160-161).

Ethnographic and ethnohistoric evidence also links caves to ancestor worship or lineage cave burial (Brady 1995:36; Thompson 1959:129; 1975:xxxiii; Villa Rojas 1969:594; Vogt 1969:594). In 1698, Bishop Nuñez de la Vega reported that a number of caves in the Chiapas region were used as repositories of ancestral bones. He stated: “The bones of these pagans have been venerated to this day, as though they had been saints, the people taking *copal* incense and flowers to the caves where they are set” (Butler 1934:223 cited in Bassie-Sweet 1996:160).

Numerous ethnographic reports have emphasized the belief of the association of ancestors with caves in contemporary Mesoamerican culture. Many kin groups and different societal groups identify with specific caves as housing the spirit of their ancestors and/or ancestral deities (Holland 1963, 1964; Nash 1970:23; Villa Rojas 1946:16; Vogt 1969:594 cited in Brady 1995:36, 1997:28). Among the Lacandon Maya, ancestral bones are still said to be worshiped in the cave of the rain deity (Bassie-Sweet 1996:160; Tozzer 1907). In the case of the Zinacantan, for example, the senior ancestors resided in one principal cave (Bassie-Sweet 1996:159). Ancestors are also worshiped in caves around Santiago Atitlan, Guatemala, where the inhabitants of the area give offerings to the ancestors to ask for rain (Christenson 2000). Finally, kin groups in the

Maya highlands who are associated with particular caves believe the ancestors who inhabit these caves control rain and crop fertility (Brady 1995).

### Caves and Human Sacrifice

Ethnohistorical sources, such as the writings of Landa, have documented the practice of human sacrifice in caves, or caves serving as repositories for sacrificial victims (Tozzer 1941). In the seventeenth century, Francisco Antonio Fuentes y Guzman described a cave in the Guatemalan highlands where the Maya sacrificed children to a cave deity who existed in the form of a small stream known as *madre del agua*, which translates to “mother of water” (Pohl and Pohl 1983:31). At the site of Chichen Itza, in Mexico, sacrificial victims, many of whom were children, were thrown alive into the sacred *cenote* (Tozzer 1941). Other ethnohistoric sources yield strong associations between caves and sacrifice for the Maya and other cultures throughout Mesoamerica. Many of these rituals involve children as sacrificial offerings to the rain deities who are believed to reside in caves.

Archaeological evidence for the association between human sacrifice and caves has been documented throughout the Maya region (Brady 1989, 2000; Gibbs 2000; McNatt 1996; Pendergast 1971; Reents-Budet and MacLeod 1986). However, many of the researchers argue that archaeological evidence for human sacrifice is difficult to demonstrate because death by sacrifice does not necessarily leave an obvious signature on the skeletal remains (McNatt 1996:88; Pendergast 1971). As discussed earlier in this chapter, archaeologists have had to rely on contextual information to identify human sacrifice.

Throughout Belize, a number of caves have been speculated to house the remains of sacrificial victims. For example, in Eduardo Quiroz cave, Pendergast discovered the remains of a child within the floor of a structure in the cave. Three holes were observed in the skull of the child leading Pendergast to suggest that this child may have sacrificed, possibly as part of the construction activity (Pendergast 1971:18). In Tunichil Muknal the skeleton of a young woman lies sprawled on her back, calcified to the floor in what appears to be the position that the Maya left her over a thousand years ago (Gibbs 2000; Roberts 1990). Many of the individuals in this cave were children and are also believed by Gibbs (2000) to be victims of sacrifice to the rain god Chac. Similarly, in their investigation of Petroglyph Cave, Reents-Budet and MacLeod (1986:81) argue that the remains in the cave fit the pattern of sacrificial victims: that is, they exhibit no clear relationship to other cave contents, skeletal remains are found in disordered piles or stuffed in crevices, and they typically lack grave goods. Their description follows Blom's (1954) and others' descriptions of sacrificial victims in cave sites in Chiapas, Yucatan, Guatemala and Honduras.

Brady has investigated a number of caves, many of which contain the remains of possible sacrificial victims. His dissertation research at Naj Tunich, a cave in highland Guatemala, yielded the skeletal remains of least 19 individuals. In this cave, seven tombs reflect the deliberate interment of individuals, some of which Brady believes to be of "elite" status based on labor investment in tomb construction and the presence of grave goods (1989:355). An additional eight individuals, seven of which are children (the eighth individual is an adult), are believed to be victims of sacrifice because of their age, mortuary contexts, and overall lack of grave goods (1989:362-363). In his discussion,

Brady argues: “Most caves produce only a limited number of skeletons which is not what one would expect from a lineage burial cave. Often the skeletons have been left on the surface with no grave goods accompanying the individuals. Because of the ritual nature of caves, one must consider the possibility that these were sacrificial victims” (Brady 1989:358). At Barton Creek Cave, the possibility of sacrifice is considered, as is the hypothesis that the remains may represent revered ancestors or lineage burials.

### ***Formulation of Hypotheses***

This chapter outlined the mortuary practices of the Maya and introduced some of the ideas regarding the presence of human remains in caves. As stated at the outset, the primary question of this study is who are the individuals that were afforded burial in caves and how were they treated at death? In an attempt to answer these questions, I evaluate the two predominant explanations for human remains found in caves: do they represent the remains of victims of sacrifice or are they the remains of revered ancestors? These explanations form the basis of the two main hypotheses to be tested and shaped the methodological approaches used to examine the skeletal, archaeological, and general contextual data from Barton Creek Cave.

#### **Hypothesis 1:**

The mortuary remains in caves represent a form of ancestor worship. Therefore, the demographic profile is expected to reflect a mortality curve with few infants and young children and a greater frequency of adult males. The reason for this is that not all deceased members of a community become ancestors. Typically, the role of ancestor is reserved for leaders and prominent lineage members (McAnany 1995:60). The burial position of the deceased would likely conform to the typical Maya pattern, which is

extended in the supine position or flexed. The existence of grave offerings also would support the premise that these bones represent the remains of ancestors (Scott 1997). The location of the deceased would be in close proximity to the living because “such mortuary activity has been linked to both ancestor worship and legitimization of inherited rights (including land and resource rights) of living descendants” (Prufer and Dunham 1997:45 citing McAnany 1995). Finally, evidence for secondary deposition of the skeletal materials may also support this claim because bones of a venerated ancestor are often subject to a series of rituals that do not always result in the placement of a complete skeleton in the final burial location (McAnany 1995:60). Bones of ancestors are used as offerings to the gods and are also believed to contain certain powers (Prufer and Dunham 1997:40). Therefore, the incomplete remains of an individual may be representative of reverential ancestor-linked ritual rather than a mutilated, sacrificial victim (McAnany 1995:62; Prufer and Dunham 1997:40).

#### Hypothesis 2:

The skeletal remains from Barton Creek Cave are the bones of sacrificial victims. If this assertion is correct, one would expect a higher frequency of young children, as well as young adults, with a low frequency of individuals who died in their elderly years in the skeletal assemblage. Typically, children and young adults were favored as sacrificial victims in Mesoamerican societies, according to ethnohistoric and archaeological sources (Ballinger 1986; Brady 1989; Hooton 1940; Reents-Budget and MacLeod 1986; Scholes and Roys 1938; Tozzer 1941). In addition, the position of the individual would be expected to deviate from the typical, extended or flexed burial position, and would include the prone or sprawled position, both of which are common

among sacrificial victims (Fowler 1984). Burial context may also support the claim of sacrifice. For instance, skeletal remains found in wet, muddy cave passages, or areas where periodic pedestrian traffic is common, are unlikely resting-places for the body of cherished community members (Scott 1997). Moreover, the absence of grave goods, or evidence that the skeletal remains appear to be part of a larger offering would also support this claim. Finally, evidence for a violent death or other skeletal indicators that reveal the individual may not have died from illness or other natural causes would support sacrifice for the skeletal remains found in caves.

These two hypotheses are tested at the Barton Creek Cave site to determine the identity of the individuals interred in the cave. The following chapter will provide an overview of mortuary theory both in general and how it is applied in Maya mortuary studies.

## **CHAPTER 4**

### **Mortuary Theory in Archaeology**

Archaeologists have had a long-standing fascination with the mortuary practices of prehistoric and historic human cultures and have used these practices as valuable resources for reconstructing the past. The general structure of mortuary practice within a given society involves the disposal of the corpse along with a series of events or rituals involving both participants (living individuals attending the mortuary ritual) and the deceased (Bartel 1982; Bell 1994). For instance, burial customs are a means by which fear of the dead is controlled by separating the corpse from the living (Parker Pearson 1999:25). However, most burial customs serve to transmit the deceased members of the community to another world, such as heaven or the afterlife. According to Alekshin (1983), different communities conceived of that world in a variety of ways, hence the variability in burial customs in the archaeological record as well as in contemporary populations. The incredible diversity of mortuary practices both within and between populations may partially explain why archaeologists have adopted different theoretical approaches to interpreting them; however, the current variation in theoretical and methodological approaches may be better explained by the different schools of thought within archaeology.

The purpose of this chapter is to review the historical trends in mortuary theory in order to provide a theoretical backdrop for the interpretations of Maya cave mortuary practices, particularly at Barton Creek Cave. The chapter provides a historical overview



of the paradigmatic shifts in mortuary archaeology, followed by a summary of contemporary approaches and the approaches that characterize mortuary investigations in the Maya region. Finally, the chapter will conclude with an explanation of my own theoretical approach, outlining the paradigmatic themes that I find applicable to investigations of Maya cave mortuary practices.

### ***Historical Review of Mortuary Theory***

Archaeological investigations of mortuary deposits have been an important component of archaeological research since the emergence of archaeology as a discipline. The purpose here is to provide a historical overview of the major paradigms that characterize the predominant approaches to mortuary studies, particularly over the course of the twentieth century. It should be noted that I am focussing on the paradigms that have characterized what could be termed *American mainstream archaeology*. Mortuary studies have undergone various developments in sociology (e.g., Durkheim 1965, original French edition 1912; Hertz 1960, original French edition 1907; Van Gennep 1960), sociocultural anthropology (e.g., Gluckman 1962; Malinowski 1944; Radcliffe-Brown 1922) and German archaeology (Christlein 1966; Harke 2000; Schumacher 1925). However, an exhaustive review of all historical literature pertaining to mortuary practices is not my intent, and therefore I will limit my discussion to those developments in mortuary studies that significantly influenced mainstream American archaeology.

Systematic investigations of mortuary deposits can be traced back to the nineteenth century when mortuary studies were primarily focussed on understanding “primitive religion” (Frazer 1886; Tylor 1871). E.B. Tylor developed the argument that the concept of the afterlife is associated with the universal body-soul dichotomy. For

instance, certain mortuary practices such as placing heavy stones on the grave were attempts on the part of the living to control the actions of the souls or ghosts of the dead (Frazer 1886:65). As such, early archaeological investigations by people such as Violler adopted this approach and studied burials in order to “gain information on religion and beliefs” (Violler 1911:123 cited in Binford 1971:7).

However, this idealist approach was met with criticism for viewing mortuary variability as reflecting differences in belief rather than practice (Smith 1894:16-18 cited in Binford 1971:7). Hertz, along with other members of the *L'Annee Sociologique* school of Durkheim, stressed that explanations of burial rites ignore the social character of the deceased, which can better explain differential mortuary treatment (Hertz 1960:86 cited in Binford 1971:7).

In addition to the developments by the idealists and Durkheimian thinkers, culture historians were also establishing their own approaches to the study of the mortuary record throughout the first fifty years of the twentieth century. However, the origins of the culture history, or normative approach, has its roots in the nineteenth century writings of Worsaae (1843, 1849) who established the chronological approach to the analysis of mortuary practices. Based on his investigations of Danish burial mounds, Worsaae developed the law that those artifacts found together must have been used together, thus demonstrating the “first use of grave associations to solve a chronological problem” (Chapman and Randsborg 1981:2).

In addition to chronology building, which continued well into the twentieth century, culture historians were creating typologies and seriating material from mortuary contexts in an attempt to analyze both the spatial and temporal variations in culture

(1981:3). One of the dominant assumptions of the culture history approach is that common patterns of behaviour produce spatial regularities in traits, including mortuary practices, and these were crystallized into ‘cultures’. In other words, the degree of similarity among independent sociocultural units is a direct measure of genetic or cultural relationships between the units being compared (Binford 1971:9; Chapman and Randsborg 1981:4). These assumptions are reflected in the work of Childe (1956, 1957) who looked at similarities and differences between cultures through ‘types’ of burials (i.e. inhumations versus cremations, and individual versus collective burial) to infer diffusion or population movement (Chapman and Randsborg 1981:4).

The culture history approach to mortuary archaeology has been characterized as being descriptive, chronological, and typological with an emphasis on the definition of regularities or ‘norms’ in mortuary practices (Bell 1994:12; Chapman and Randsborg 1981:4). Although culture history dominated the theoretical realm of archaeology during the first fifty years of the twentieth century, it eventually met with mounting criticism (e.g. Binford 1965; Chapman 1979; Hodder 1978; Renfrew 1977). Culture historical approaches to mortuary practices were criticized for being limited in scope (Bell 1994:12; Brown 1971:1) and strongly inclined “towards the horizontal (e.g. tribal areas) rather than the local vertical (e.g. social stratification) dimensions of prehistoric societies” (Chapman and Randsborg 1981:4). Thus, the development of the processualist approach to mortuary theory was, in part, an attempt to move away from “the restricting considerations of chronology building and other traditional classificatory uses of burial data” (Brown 1971:1) that had characterized the study of mortuary remains (Binford 1971).

The processual approach created a significant paradigm shift in mortuary studies and has dominated the field from the late 1960s to the present day (Carr 1995). This approach was stimulated by a symposium on the *Social Dimensions of Mortuary Practices* organized by James Brown in 1966 and its follow-up publication in 1971. Social dimensions, in this context, are defined as the main dimensions of the social persona of the deceased, which are recognized in mortuary practices. These dimensions include age, sex, social position, social affiliation and location of death (Chapman and Randsborg 1981:7).

The works of two contributors in particular – Binford and Saxe – characterize this theoretical model of the social dimensions of mortuary practices. The Binford-Saxe model is a unified theory based on two different studies of prehistoric mortuary practices (Brown 1995:11). The basic premise of this approach is that the form and structure of mortuary practices in any society are conditioned by the form and complexity of the organizational characteristics of the society itself. In other words, an individual's treatment at death reflects the position occupied in a status system in life, and that differences between interments reflect the type of social status system in which he/she participated (e.g., egalitarian versus ranked) (Binford 1971; Brown 1995; Chapman and Randsborg 1981; Saxe 1970).

As previously mentioned, this unified theory stemmed from two separate, yet complementary studies by Saxe and Binford. Saxe (1970) adopted a cross-cultural perspective to test eight hypotheses regarding the organization of mortuary practices in three different societies. His analysis of the various disposal types correlated the various social personae that were present in these societies (such as old respected men, married

males, unmarried females, and children less than seven years old) with mortuary treatment (Chapman and Randsborg 1981:7; Saxe 1970). Thus, Saxe's study treated mortuary behaviour as dependent upon variation in individual persona – an aggregate “social personality” or social personae (Brown 1995:18). Both Saxe and Binford drew upon Goodenough's (1965) concept of the social persona of the deceased which is defined as a composite of the social identities maintained in life and recognized as appropriate for consideration after death (Binford 1971:17). Binford suggested that aspects of the social persona that are symbolically recognized in the mortuary ritual would shift depending on the various levels of participation in the ritual and would vary depending on the relative rank of the social position which the deceased occupied in life (1971:17).

Binford (1971), like Saxe, also employed a cross-cultural perspective in his study; however he used ethnographic information from a sample of 40 non-state societies. He found that these cases consistently link formal differentiation in mortuary rites to status differences and to differences in the group affiliation of the deceased, demonstrating that a set of mutual dependencies exist between forms of mortuary rites and social organizational features (1971:14). Subsequently, Binford suggests that heterogeneity in mortuary practices within a single sociocultural unit would “directly vary with the complexity of the status hierarchy, as well with the complexity of the overall organization of society with regard to membership units and other forms of sodalities” (1971:14-15).

Both Binford and Saxe saw cemeteries and their contents as having a structure that could provide the observer with clues regarding certain organizational principals underlying the associated community. Hence, they constructed generalized theories

through cross-cultural studies with a focus on levels of social complexity, inherited status, and the like (Brown 1995:11). This Binford-Saxe model was readily adopted by archaeologists and formed the basis of many social analyses of mortuary practices undertaken in the last thirty years. Archaeologists such as Bradley adopted this approach and focused on the relationship between grave goods and social organization (Bradley 1982, 1988). He suggested that the selection of artifacts for deposition with the dead might reflect the social position that the individual had enjoyed in life; thus, the contents of different graves may be studied for wealth and status (Bradley 1988:327). Tainter also followed in this processualist paradigm by expanding on Binford's ideas and linked energy expenditure in mortuary practices to rank of the deceased in 103 ethnographic cases (Chapman and Randsborg 1981:7; Tainter 1978). Tainter further promoted the objective and quantitative method of analysis and the evaluation of concepts and methods by reference to ethnographic mortuary systems, an approach that characterizes the processualist paradigm on the whole (Tainter 1978:105).

This new-found enthusiasm for the Binford-Saxe approach, however, was not shared by all (Cannon 1989; Hodder 1985; Metcalf and Huntington 1991; Parker Pearson 1982). In fact, over the past twenty years the Binford-Saxe approach has generated much criticism from the postprocessual archaeologists who faulted the theory for being “teleological in viewing cultures and societies as operating in a simplistic reactive manner to internal and external forces” (Hodder 1985 cited in Bell 1994). Critics frequently object to the processualists' search for features of social organization in the archaeological manifestation of ritually dominated practices (Brown 1995:3).

As previously mentioned, the vast majority of these criticisms stem from the postprocessualists who stress the importance of such factors as ideology, power relationships, belief systems, and the malleability of social categories when investigating the mortuary record (Charles 1995:78). At the forefront of this approach are Hodder (1982, 1985) and Parker Pearson (1982). According to Hodder, mortuary practices are actively chosen by actors in relation to their beliefs and world-views and symbolic themes. These symbols are open to reinterpretation through mortuary behaviors and can become a part of active social strategies, in contrast to the passive reflections of social organization that characterize the Binford-Saxe model (Hodder 1982).

Parker Pearson, on the other hand, connected material changes in mortuary practices to urbanism, class structures and competition, health and hygiene, and nationalism through his study of nineteenth and twentieth century mortuary practices in England. His conclusions suggest that material expressions of ritual might not indicate actual social roles or status but may idealize power relations (Parker Pearson 1982; Bell 1994). Therefore, “the ideological dimension must be considered as a major line of inquiry in studies of all human societies” (Parker Pearson 1982:112).

Trinkaus (1984) and others (Cannon 1989; Kristiansen 1984; Lull 2000) have built on Parker Pearson's approach by demonstrating that economics and politics are more appropriate conceptual models upon which to base a mortuary theory than the social dimensions argued for in the Binford-Saxe approach. In her discussion of Muslim rites, Trinkaus argued that generalizations operate at the level of the funeral rite as a whole rather than the physical treatment of the burial (Trinkaus 1984). In the case of the Middle Eastern Moslem communities, Trinkaus argues that the mortuary practices

sometimes mask social relations. She suggests that “the expression of rank is indeed present but in an ‘inverted’ sense in which high rank and lavish possessions during life are expressed in death with much nonmaterial symbolism and lavish nonpermanent display (feasting, elaborate hearses, flowers, presence of significant persons, etc.). The emphasis is heavily shifted from mortuary remains to mortuary ritual” (1984:675).

This shift in focus from mortuary remains to mortuary ritual is a critical element of postprocessualist mortuary theory. Ritual can be defined as a communal celebration to acknowledge a specific event of significance to the community which serves as a particularly powerful form of legitimizing social hierarchies (Beck 1995; Shanks and Tilley 1982). In mortuary ritual, ideology serves as an active factor “that can be used by competing individuals and social groups to establish and legitimize their dominance through an ideology bearing upon society as a whole and expressed in symbols, social norms, rules and rituals” (Kristiansen 1984:77). This concept of the legitimization of dominance and social hierarchy through mortuary ritual, hence ideology, is critical to the investigation of mortuary practices and has been tested in a number of studies (Cannon 1989; Kristiansen 1984; Parker Pearson 1982). These studies have also stressed the importance of recognizing the active role of the living in the archaeological study of funeral practices.

The shift in focus from the dead to the living is another significant element of postprocessualist mortuary theory that has been emphasized particularly by Parker Pearson. Recently, he published a book that was geared towards the archaeological study of funerary practices that *the living perform for the dead* (Parker Pearson 1999:3; emphasis mine). His analysis of mortuary practices in modern and Victorian England



leads to an interpretation both in terms of the way the dead are seen by the living and in terms of the social relationships between competing groups (Parker Pearson 1982:99). Parker Pearson argues that the study of mortuary practices should not necessarily be focussed on the dead themselves, but rather the living who buried them as “the dead do not bury themselves but are treated and disposed of by the living” (Parker Pearson 1999:3). Braun (1984), for instance, has suggested that mortuary practices are symbolized by differential treatments based on whether someone was the daughter, son, wife, or husband of someone else, and therefore “it is that someone else’s social position that is being symbolized under such circumstances” (Braun 1984:191). This shift in focus from the dead to the living recognizes strategies that the survivors of the deceased must take to solve any number of social problems, thus creating a broadened basis for social explanation of material remains (Brown 1995:4-5).

### ***Current Theoretical Approaches to Mortuary Archaeology***

Contemporary theoretical approaches to mortuary archaeology have not strayed far from the processualist and postprocessualist approaches that emerged in the late 1960s through to the early 1980s. In fact, these two polar positions still seem to characterize current debates in mortuary theory as well as archaeology, in general. However, in the past ten years archaeologists have become increasingly aware of the limitations of adhering to one particular paradigm and are advocating a much broader approach to mortuary archaeology. For instance, the expansion of the site-specific to regional level of analysis, as well as the inclusion of skeletal studies in mortuary analysis characterizes recent attempts to broaden mortuary theory and practice.

The regional approach to mortuary archaeology was advocated in a symposium at the Society for American Archaeology annual meetings in 1991, which subsequently resulted in an edited volume published by Beck in 1995. This body of work is a critical response to the emphasis commonly placed on the patterns of burial treatment of individuals from a single site or cemetery, which “are never connected back to the larger archaeological data set for the site or the region” (Beck 1995:xiii). The contributors to this volume recognize the importance of local factors, but argue that regional considerations are critical in the documentation of mortuary variability (Beck 1995; Goldstein 1995; Larsen 1995).

The inclusion of skeletal studies in the practice of mortuary archaeology is another new development in contemporary approaches to mortuary theory. Prior to the 1960s, skeletal remains from burial contexts were often shipped off to an osteologist for study, the results of which may have been appended to the report but typically were not considered in the interpretation of the mortuary data (Larsen 1995:261). In the last two decades, however, it has been recognized that osteological materials from mortuary contexts “should be integrated into broader discussions of human behaviour that draw upon many sources of information” (1995:261). Skeletal and dental remains can provide invaluable information about the life of an individual as opposed to the usual focus on cause of death (Parker Pearson 1999:3). For instance, osteological data can reveal age at death, the sex of the individual, diet, traumas, illnesses or diseases they may have suffered, and genetic relationships with other individuals.

Contemporary approaches to mortuary archaeology are grounded in the foundations of processual and postprocessual mortuary theory, but at the same time, are

cognizant of their limitations. Current practice can be characterized as being more multidimensional and broad in scope than in the past. Researchers are advocating a regional approach and are looking to other lines of evidence such as skeletal remains (Larsen 1995), historic sources (Cannon 1989), as well as factors such as philosophical and religious beliefs (Carr 1995), kinship (Jørgensen 1991), gender (Eisner 1991) and ethnicity (Jamieson 1995), in shaping the mortuary record.

### ***Mortuary Theory in Maya Archaeology***

For almost a century, burials from many sites in the Maya area have been excavated and studied by scholars, but the recovered data were primarily descriptive, emphasizing the grave contents and cultural modifications of elite skeletons found in elaborate tombs at Classic Maya centers (Webster 1997). In the past thirty years, the archaeological study of mortuary practices in the Maya region parallels the processualist approach to mortuary theory despite the general lack of reference to the publications of Saxe and Binford. Overall, Maya mortuary studies are mainly concerned with the rank of interred individuals, with little to no emphasis on mortuary ritual or causal agents in the formation of the mortuary record. More recently, however, archaeologists are beginning to recognize the complexities of Maya mortuary practices and are investigating other avenues of research to explain variability.

Maya mortuary archaeology can be characterized by a number of assumptions and approaches. First, the elite are presumed to be more elaborately treated in death than non-elite members of society. Therefore, individuals of higher rank are positively correlated with the amount of energy expended in any one burial rite, as well as the quality and quantity of grave goods (Chase and Chase 1992). For instance, grave types

such as tombs and crypts are assumed to be an indicator of elite status because of degree of energy expended in their constructions (Ruz 1965: 459). The presence (and quantity) of certain types of grave goods such as jades, *Spondylus* shell, and polychrome ceramics are often considered to be associated with elite status (Chase and Chase 1992; Hammond, et al. 1991). Also, the location of the grave and its association with certain types of architecture are dependent on one's rank within the society (Chase and Chase 1992:5; Sharer 1978:57).

Secondly, Maya archaeologists frequently rely on skeletal and dental materials from mortuary contexts to make inferences about the rank of the individual. In some cases cranial and dental modifications have been utilized to identify elites (Becker 1973:401; Sharer 1978:57). Osteological analysis of burials from a number of the large centers have indicated that elites were generally taller in stature and enjoyed better health than the rest of the society (Chase and Chase 1992:6; Storey 1985). Despite the fact that a number of these assumptions have recently met with criticism, stature estimates, pathological indicators and cultural modifications from skeletal materials are often used in conjunction with grave goods, burial location and energy expenditure to determine rank and status distinctions in ancient Maya society.

Very few would deny that the previously mentioned variables have the potential to reflect some of the social realities of ancient Maya society, particularly with regard to status distinction between the elite and non-elite (Pendergast 1992:67). However, recent analyses of mortuary contexts indicate that the distinctions are not quite as clear as many have presumed them to be, and that other variables need to be considered in explanations of mortuary variability (Chase 1994:133; Hammond et al. 1991; Haviland 1997;

McAnany 1995, 1999; Pendergast 1992). For example, gender relations in ancient Maya society can lead to differential mortuary treatment of men and women that appears to override rank distinctions (Haviland 1997). Based on a comparative study of burials from different segments of society, Haviland discovered that sexual inequality was manifested most strongly among the elite (1997:1). He examined the number of grave goods and burial methods for men and women within each class and concluded that mortuary differentiation between the sexes relates to the development of a centralized state during the Classic Period at Tikal (1997:1-2). On the other hand, women within the lower strata of society enjoyed a much more egalitarian lifestyle as indicated by archaeological similarities of burial patterns between men and women (1997:5).

In a recent study by McAnany (1999) and her colleagues, it was discovered that factors such as shifts in power structure through the increase in institutionalized authority, and the practice of ancestor worship can cause changes in burial practices. In the Maya Lowlands, a pattern of modestly differentiated interments was replaced by pronounced variation, ranging from simple subfloor burials to royal tombs within funerary pyramids, in the space of one thousand years (McAnany et al. 1999:129). The authors also make reference to Carr (1995) who demonstrated the significance of philosophical-religious beliefs to mortuary practices (McAnany et. al. 1999:129). They state: “This latter point has particular resonance in reference to mortuary ritual among Mesoamerican peoples, for whom cosmological precepts often blur the boundary between life and death that is viewed as a permeable membrane rather than an unbreachable chasm” (1999:129).

Mortuary theory in Maya archaeology has mainly been concerned with identifying the rank of the deceased individual within the larger sociocultural framework of the community. However, new avenues of research are being developed to provide additional explanations for mortuary variability. Archaeologists have been stressing the use of multiple lines of evidence when interpreting mortuary contexts and caution that temporal and spatial factors, in addition to rank, can contribute to variation in the mortuary record.

### ***Theoretical Framework for the Study of Cave Mortuary Practices***

For the purpose of my research, I choose not to pigeon-hole myself into one particular theoretical paradigm, but rather, draw on the strengths from various approaches. Little et al. (1992), for instance, have demonstrated how archaeologists can make use of the basic approaches developed by processualists (e.g. quality and quantity of grave goods, and energy invested in mortuary ritual), and build on these ideas by constructing questions that are rooted in postprocessualism, such as how societal, religious, and ethnic beliefs can shape the mortuary record, and the various roles that the living play in the treatment of the deceased. By expanding my theoretical stance to include much broader dimensions of mortuary practices, it will enable me to explore other interpretive spheres for assessing the significance of Maya cave mortuary practices. For instance, deviations in the mortuary record can provide insight into societal beliefs as reflected in their treatment of the deceased. Therefore, I will be examining variables such as burial orientation and mortuary context so see how societal beliefs and/or concerns may be reflected in the mortuary record.

Carr (1995), Larsen (1995) and McAnany et al. (1999) have stated that mortuary behavior is a highly sensitive indicator of religious-philosophical belief systems and ideology. As caves were not normal places for the interment of the deceased in ancient Maya society (Brady 1989:345), I believe that such factors play a significant role in this particular type of mortuary context, especially considering the meaning of caves in the Maya cosmological belief system. It also necessary to examine possible political and/or economical concerns of the Late/Terminal Classic Maya to see how they may have influenced the treatment of the dead in caves. Therefore, I draw on postprocessual sources to examine the philosophical, religious, political and economic influences on the mortuary remains in Barton Creek Cave. I will also use ideas rooted in processualism for methodological purposes and interpretation in the investigation of the cultural materials. In particular, I use Tainter's (1978) energy expenditure theory and the positive correlation between grave goods and rank (Bradley 1988). These theoretical concepts are applied to the interpretation of the Barton Creek mortuary remains and are discussed further in Chapter 7.

## **CHAPTER 5**

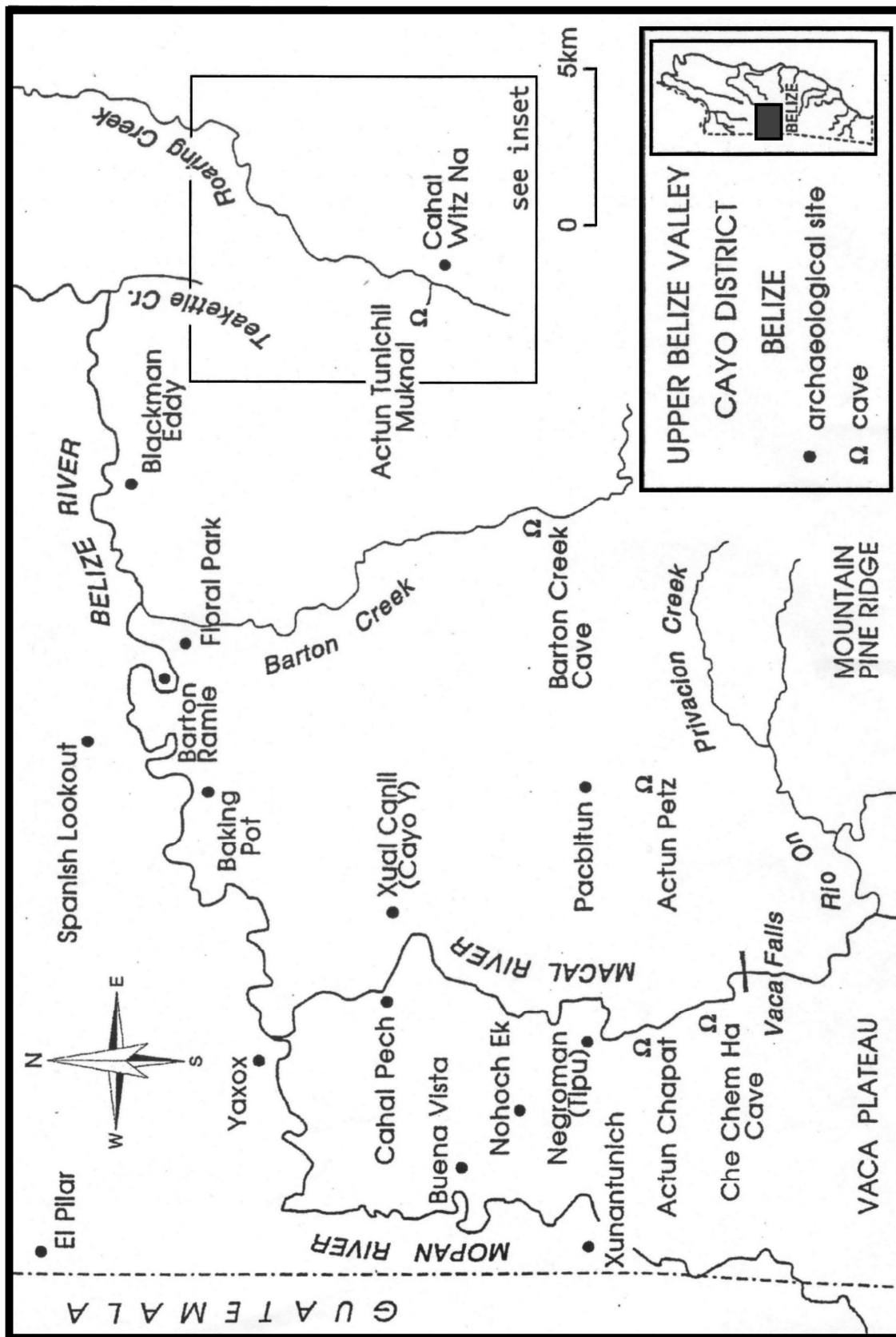
### **Barton Creek Cave: Site Description and Methodology**

#### ***Background***

Archaeological investigations were conducted at the Barton Creek Cave site in the Cayo District of Belize, between 1998 and 2000. The site is situated in the Upper Belize Valley (Figure 4), approximately 100m above sea level. The site is named after Barton Creek, which is a north-northwest trending stream located in a relatively narrow valley – Upper Barton Creek Valley - which flows into the Belize River, east of San Ignacio. The headwaters of the creek drain a portion of the Pine Ridge, a granite massif rising several hundred meters above the surrounding limestone. The creek descends from the Pine Ridge down a series of cascades into the Barton Creek Valley. Several smaller resurgences feed the creek draining the surrounding karst hills.

Barton Creek is a tributary of the Belize River, which hosts a number of relatively large ceremonial Maya sites such as Baking Pot, Xunanatunich, Blackman Eddy, and Barton Ramie. As of yet, no major sites have been identified in the Upper Barton Creek Valley but numerous small settlements have been observed in the immediate area (Mirro and Owen 2001). The Upper Barton Creek valley is fairly narrow, ranging from approximately 100 to 500 meters in width, and is therefore not necessarily conducive to large settlements, partly because of lack of arable land. In addition, south (or upstream) of the Barton Creek Cave site, portions of the creek are dry except during the rainy



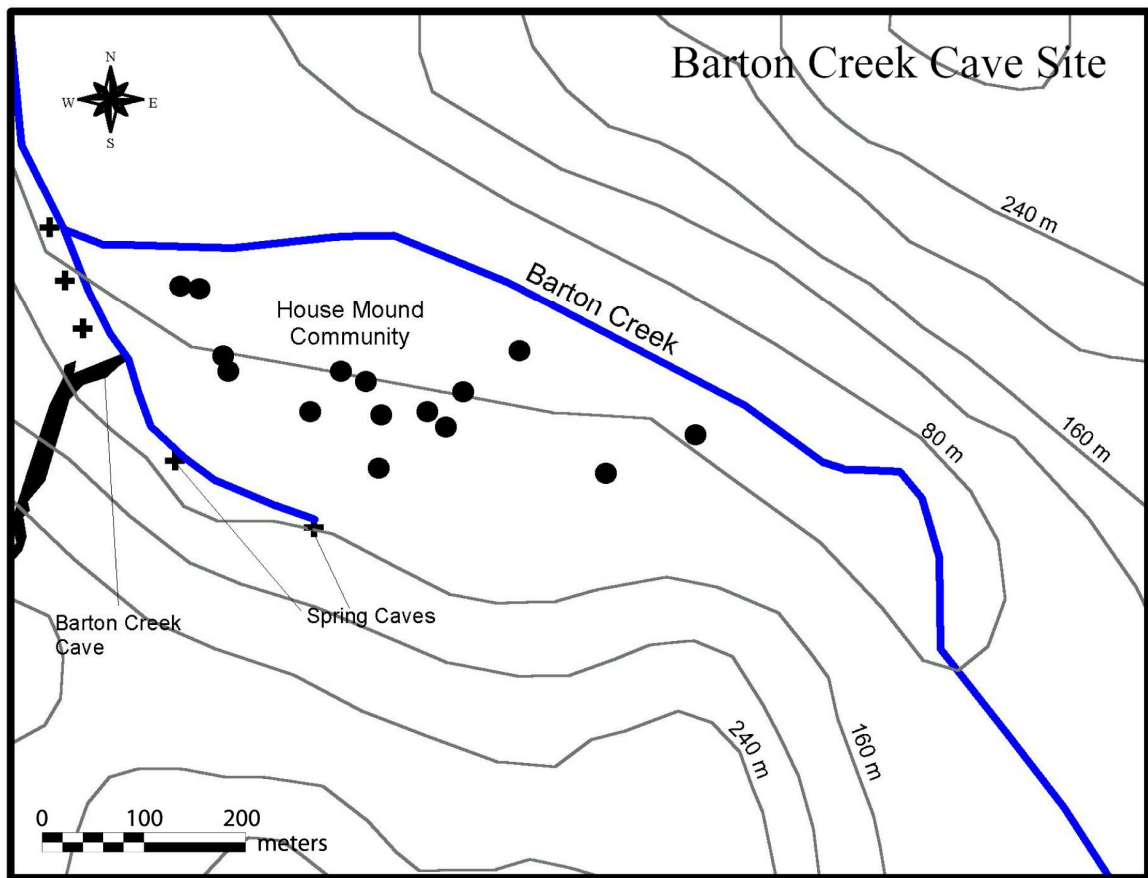


season, and therefore, the water supply in this section of the valley may not have been sufficient to support large populations. Today, a small population of local farmers and a Mennonite community inhabit the Upper Barton Creek Valley. A large percentage of the valley's natural vegetation has been cleared, and currently the land is settled, under cultivation, in pasture, or lying fallow. Modern habitation and farming activities have destroyed numerous prehispanic Maya settlements in the area. Many of the mounds in the Upper Barton Creek Valley have been leveled to clear fields for crops, and are only recognizable by scatters of limestone or cobbles in the fields.

### ***The Barton Creek Cave Site***

The Barton Creek Cave site consists of a large river cave and a small community of residential mounds that were constructed on a terrace of the Barton Creek (Figure 5). The area is a flat alluvial terrace flanked by steep limestone slopes on the east and west. The river that flows from Barton Creek Cave, along with two small springs near the cave entrance, forms a small stream that follows the base of the western mountain and flows north eventually joining Barton Creek. The cave river and two springs provide substantial water flow to the immediate area.

The area surrounding the cave is currently pastureland for horses associated with a residence. According to one local resident, the land was originally cleared sometime in the 1950s for timber and agriculture. Since then, it has passed through many hands alternating between fallow and cleared stages. In the course of this history, residents have plowed some of the mounds, which resulted in the disturbance of the terminal layers. Also, two mounds near Barton Creek Cave were used as foundations for



*Figure 5: Map of the Barton Creek Cave Site*

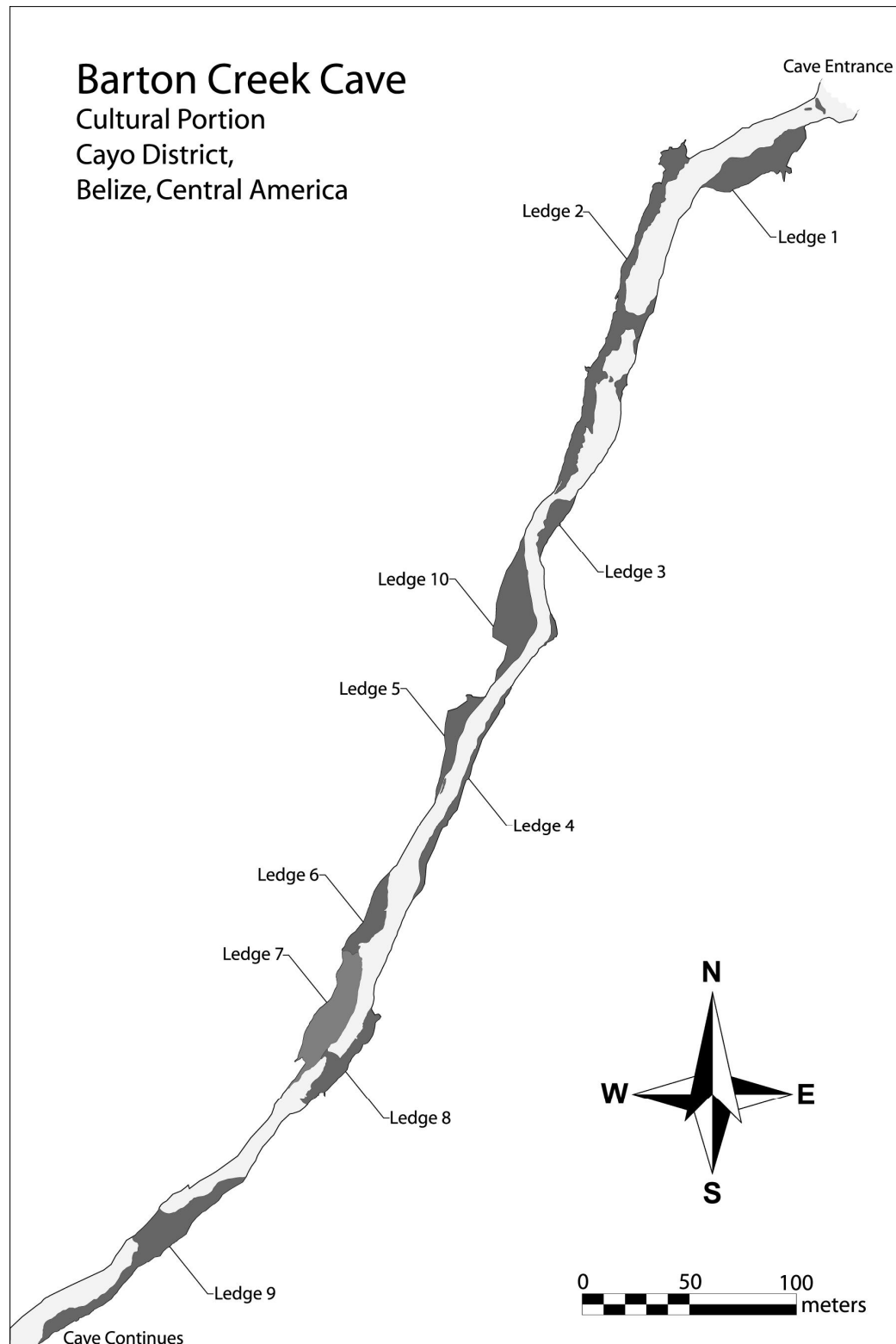
residences and modern trash can be observed intermixed with ancient Maya artifacts. In recent years, a number of the mounds were bulldozed in an effort to level the land and mounds were used as fill for the construction of concrete foundations.

A total of fifteen mounds were recorded during a reconnaissance survey of the area to determine the density of settlement in the area near Barton Creek Cave (Figure 5). The mounds range from small in size (3m by 3m) to fairly substantial, with the largest measuring 10m by 30m. Heights of the mounds range from 0.5-3.0m, but many have

recently been truncated, causing the destruction of the terminal architecture, which is primarily Late Classic. A fairly tight cluster of 13 mounds is present on the terrace within approximately 300 meters of the cave entrance, while two additional mounds are located within a radius of 500 meters of the entrance. The concentration of mounds decreases as one moves south through the valley and away from the cave for approximately one-mile. At this point the valley widens and numerous mounds are visible in cleared pasture. A medium sized plazuela group (i.e., three to four mounds situated around a plaza) is located in the valley about one mile north of the Barton Creek cave site. It is in a narrow section of the valley and is associated with several smaller mounds. Due to the thickness of the forest vegetation and the parcels of private land in the immediate vicinity, site boundaries, particularly to the north, have not yet been clearly defined.

Excavations of three of the residential mounds suggest that some of the structures were occupied from Preclassic/Early Classic into the Late Classic based on stratigraphic information and ceramic typologies. The ballast of the structures consists primarily of large granite river cobbles with some limestone and slate. This is not surprising, as the stream channel is rich in granite river cobbles, making granite one of the most available resources in the valley. Materials recovered from the excavations included ceramic, chert and obsidian artifacts. No burials were encountered in the excavation of the mounds.

The focus of investigations at the Barton Creek Cave site concerned the cave itself. Barton Creek Cave (Figure 6) is a large subterranean riverine system with an abundance of evidence of ancient Maya usage. The large river passage contains numerous ledges, which formed as a result of episodes of dissolution during the



*Figure 6: Map of the Ledges exhibiting Maya Use in Barton Creek Cave*

formation of the cave and subsequently are covered with flowstone, stalactites, stalagmites and other formations.

The actual length of Barton Creek Cave has not yet been determined, but is currently being surveyed by a team of cavers who have mapped approximately 3200m of passage. Despite the length of the cave, cultural material is found only within the first 450m from the known entrance. In this area, there are a total of ten ledges located above the river evidencing ancient Maya activity. This area of the cave is rich in speleothems (defined as the most general class of cave formations) occurring in large clusters suspended from the ceiling and cascading down the walls. The average passage size for the cultural section of the cave ranges between approximately 15 to 30 meters in height, and between (approximately) 10 and 15 meters wide. The river that flows through the cave is navigable via canoe through the cultural area, and ranges in depth from one half to three meters.

Other cave sites have been located in the valley and surrounding hills, and many of them also contain cultural materials. However, Barton Creek Cave appears to be the largest cave site in the valley, which may explain why it is also the richest in cultural remains. Similar cave sites have been documented in the Roaring Creek Valley located roughly 6-7km east of the Upper Barton Creek Valley. Similarities between Barton Creek Cave and the Roaring Creek caves will be discussed in greater detail in Chapter 7 in an attempt to explain the mortuary use of these types of caves by the Maya.

### ***History of Research***

The first known archaeological investigation of Barton Creek Cave was conducted by MacLeod and Rushin in the 1970s. Their reconnaissance of the cave

resulted in the discovery of numerous artifacts and intact human skeletal remains. At this time, the cave was largely undisturbed by looters, and the artifacts and human remains appeared to be as the Maya had left them over a thousand years ago (MacLeod and Rushin, personal communication 2000). Unfortunately, the report of their brief investigations cannot be located, and therefore we know little of how this cave appeared in earlier times.

Further archaeological investigations of Barton Creek Cave were conducted between 1998 and 2000 under the direction of Dr. Jaime Awe of the Western Belize Regional Cave Project (WBRCP) and the Department of Archaeology (DOA) in Belmopan, Belize. Initial reconnaissance into the cave determined that Barton Creek Cave has been heavily impacted by human intrusion since Rushin-Bell and MacLeod's visits in the 1970s (Mirro et al. 2000). Due to the cave's importance as a tourist destination and its prominence as an archaeological site, many ledges have been thoroughly explored by tour guides, local residents, tourists and looters. Looter activity and foot traffic have differentially impacted the archaeological record in various regions of the cave. For example, several artifacts and skeletal remains have been moved from their original contexts to more visible places in order to enhance the tour of the cave for visitors. In an effort to prevent the loss of any more data, the DOA requested an investigation of archaeological materials in Barton Creek Cave in 1999. Preliminary investigations of the cave in 1999 revealed that the cave was not looted as extensively as previously thought. While many ledges displayed evidence of recent human intrusion, a number of artifacts and skeletal deposits were still in, or close to, primary context.

Based on the results of the 1999 survey, the WBRCP decided to conduct a more intensive archaeological analysis of the cave, its contents and associated surface sites during the 2000 field season to contribute to larger questions of cave use by the Maya in western Belize. This thesis presents the results of the investigations of mortuary practices that took place between 1998 and 2000 at the Barton Creek Cave Site.

### ***Methods***

The methods used to investigate the mortuary remains in Barton Creek Cave were undertaken using a *bioarchaeological* approach, which means studying human remains within their archaeological context. This approach is critical to reconstructing the ritual aspects of mortuary practices from the artifacts associated with skeletal remains, contextual information, and the demographic profiles for determining the age and sex of the individuals afforded interment within the cave.

Analysis of the skeletal material was conducted to determine the age, sex, health status, and total number of the individuals interred within Barton Creek Cave. In order to accomplish this, clusters of bone and discrete individuals were systematically recorded, mapped and photographed. In addition, an inventory of all of the bony elements included within each concentration of bone was recorded. When possible, analyses and measurements were conducted *in situ* unless it was necessary to remove the bone from the cave for proper cleaning and/or protection. If the skeletal materials were in an area of high risk of damage due to further looting and tourism, then they were moved or removed to a safer location.

For the purpose of this study, bone clusters are defined as anything from just a few, isolated, bony elements to large concentrations of bone in a natural topographic



feature. It should be noted that the term “burial” is problematic when dealing with cave interments because burial is typically defined as the intentional interment of an individual. The interments may, in fact, represent offerings or sacrifices, and as such would not reflect intentional interment; therefore the term “burial” is avoided.

This study included all skeletal material that was visible on the surface of the cave floors and formations. In some cases, bones were concealed by a thin layer of bat guano which was lightly brushed away. In most instances, however, the floor of the cave ledges lacked matrix and therefore buried deposits did not occur. If matrix was observed, a small sample was excavated to determine whether buried deposits or cultural features were present. If buried skeletal deposits were encountered, they were noted and left undisturbed. These were not included in the study.

Age, sex, and pathological conditions were determined using methodological procedures as summarized by Bass (1997), Buikstra and Ubelaker (1994), Ortner and Putschar (1981), Scheuer et al. (2000), Schwartz (1995), Ubelaker (1989), and White (1991, 2000). Subadults were aged on the basis of dental eruption and development, seriation by size, epiphyseal formation and union, diaphyseal length and other bone dimensions. Adult age was determined by cranial suture closure, degree of vertebral osteophytosis, eruption of the third molar, and seriation of dental attrition and auricular surface. All measurements of the skeleton and dentition were taken using sliding calipers, cloth tape and an osteometric board. When possible, individuals were assigned specific age categories, which include infant (0-3), child (3-12), adolescent (12-18, or eruption of 3<sup>rd</sup> molars), young adult (18-34), middle adult (35-54) and old adult (55+), as

outlined in Buikstra and Ubelaker (1994). In cases where individuals could not be aged accurately, the more general categories of subadult (0-18) and adult (18+) were assigned. All contextual and mortuary information related to the rituals or activities that took place in the area where skeletal materials are located was recorded. These variables along with examples of each are summarized in Table 1 below.

Table 1: Contextual and Mortuary Variables

<b>Contextual and Mortuary Data Considered</b>	<b>Examples</b>
Location of bones within the cave	Daylight zone versus dark zone
Location of bones relative to a feature	Bones clustered near a large formation
Presence and patterns of grave offerings	High frequency of ceramics with deceased
Interment type	Primary versus secondary
Position of the individual	Flexed, extended, prone, supine
Orientation of the individual	Head to the north, head to the south, etc.
Single versus multiple interments	Isolated individuals or possible ossuaries

Comparisons of the skeletal, contextual and mortuary data from Barton Creek Cave with other cave sites in the Maya lowlands are made in order to identify any patterns that may emerge with regard to mortuary use of caves by the Maya. In addition, these data are compared and contrasted to the mortuary practices from Lowland Maya surface sites, particularly sites in the Upper Belize Valley.

Finally, it is readily apparent that questions regarding the integrity of the cultural materials within the cave are an issue of the utmost importance. In order to address these issues, a number of informal interviews were conducted with the current landowner, tour guides, local residents, and archaeologists familiar with the cave. The purpose of these interviews was to determine when possible looting events may have occurred and to

reconstruct what the cave may have looked like prior to the damage it incurred in recent years. The integrity of the skeletal deposits will be discussed in the following chapter, which summarizes the Barton Creek Cave sample.

## **CHAPTER 6**

### **The Barton Creek Cave Sample**

The importance of Barton Creek Cave to the ancient Maya is evident based on the density of cultural material discovered in the cave. The archaeological investigations conducted in the 1970s resulted in the discovery of a number of articulated skeletal remains (MacLeod and Rushin, personal communication 2000-2001). Since then, however, the skeletal material has been significantly impacted by human activity.

Despite the amount of damage incurred, the skeletal remains are in an excellent state of preservation. This feature is of particular significance because Maya osteologists are often faced with the formidable task of analyzing poorly preserved, highly fragmented bone due to the nature of the tropical soils. At many cave sites, skeletal materials are often coated in a thick layer of calcite concealing the surface of the bone, thus hindering general observation and the ability to extract precise measurements. The well-preserved skeletal series from Barton Creek offers a rare opportunity to gain valuable information about those individuals who were afforded interment in the cave.

#### ***Description of Sample***

There are 10 ledges in Barton Creek Cave evidencing ancient Maya activity, and human remains were encountered on six of them. Table 2 summarizes the bone cluster designations and minimum individuals (MNI) for each ledge. No human remains were

encountered in the mounds excavated near the cave entrance. The following is a description of each of the ledges containing skeletal material, and their associated bone clusters, as well as additional contextual and mortuary information.

Table 2: Summary of Ledges Evidencing Human Remains

<b>Ledge</b>	<b>Area</b>	<b>Bone Clusters</b>	<b>MNI</b>
2	Area C, Area D	BC22, BC24, BC25	3
3	Area A, Area B	BC26, BC27	2
6	Area A	BC13	1
7	Area A	BC14	1
8	Area A, Area B, Area C	BC1-BC12	14
9	Area A	BC15-21, BC23	10

### ***Ledge Two***

Of all the cultural areas within the cave, Ledge 2 is the largest of the ledges and hosts the greatest concentration of cultural materials. The artifact assemblage observed is incredibly diverse, and includes material from the Early Classic and the Late/Terminal Classic based on the ceramic chronology known for the area (Gifford 1976; Mirro and Owen 2001). The majority of the ceramics are Late Classic jars, many of which are fragmented and scattered over the floor of the ledge. Additional vessel forms include censers, bowls, dishes, and shoe-shaped pots. Other artifacts encountered include three bifaces, an obsidian blade, a metate, bone beads, a spindle whorl, an olliva tinkler, *jute* (fresh-water snails), and a small jade ornament.

Features identified on Ledge 2 consist of stone alignments, small dams in circular depressions, two biconically-drilled holes in the flowstone (possibly constructed for the purpose of attaching a climbing rope) and hearths. A concentration of carbonized plant remains (see F23, Figure 7) was also observed in association with jar sherds, dish sherds,

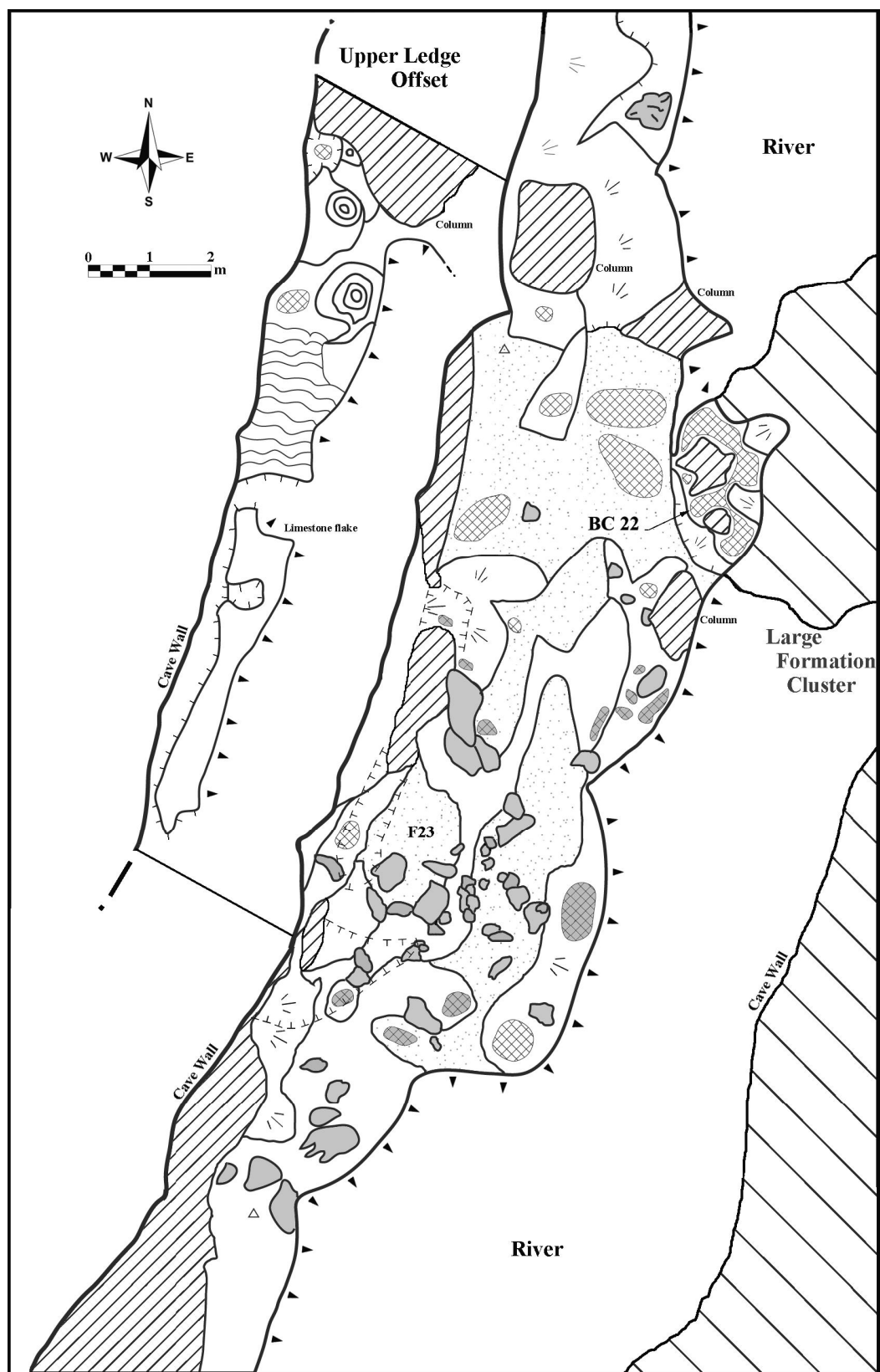


Figure 7: Map of Ledge 2, Area C, showing locations of Feature 23 and BC22

a biface fragment, textile fragments and a number of carbonized corn cobs, silks, stems and leaves (Morehart, personal communication 2001).

The incomplete skeletal remains of three individuals (BC22, BC24 and BC25) were discovered on Ledge 2. These individuals are in disturbed contexts, disturbances due to human intrusion and heavy taphonomic pressures.

### Bone Cluster 22

Bone Cluster 22 (BC 22) is located in Area C of Ledge 2 (Figure 7), within a small 3m-by-1.5m pit in a large speleothem cluster. The pit itself resembles a ceramic depository as it contains a large concentration of broken Late Classic jars, the fragmented remains of a spouted vessel, various bowls, *jute*, and a single speleothem. Relative to the amount of ceramics, there are very few bones. A total of 13 bones and bone fragments were observed in this semi-circumscribed area, all of which appear to belong to the same individual. Given the proximity of the “pit” to the edge of the ledge, it is highly likely that much of what was in this “pit” originally has since fallen to the river below, including bone, ceramic, and *jute*. Because there are so few bones, and because the materials in the pit were disturbed, it is difficult to ascertain whether this individual represents a primary or secondary interment.

The individual represented in BC22 is a child between the age of 8 and 13 based on epiphyseal union. The “scant” nature of this bone cluster hinders any detailed assessment of mortuary practice. Although artifacts are in the vicinity of the human remains, they do not appear to be grave offerings of any sort. Rather, the individual appears to be indistinguishable from the artifacts and therefore seems to have served the same function, possibly as part of an offering or as some type of depository. In her

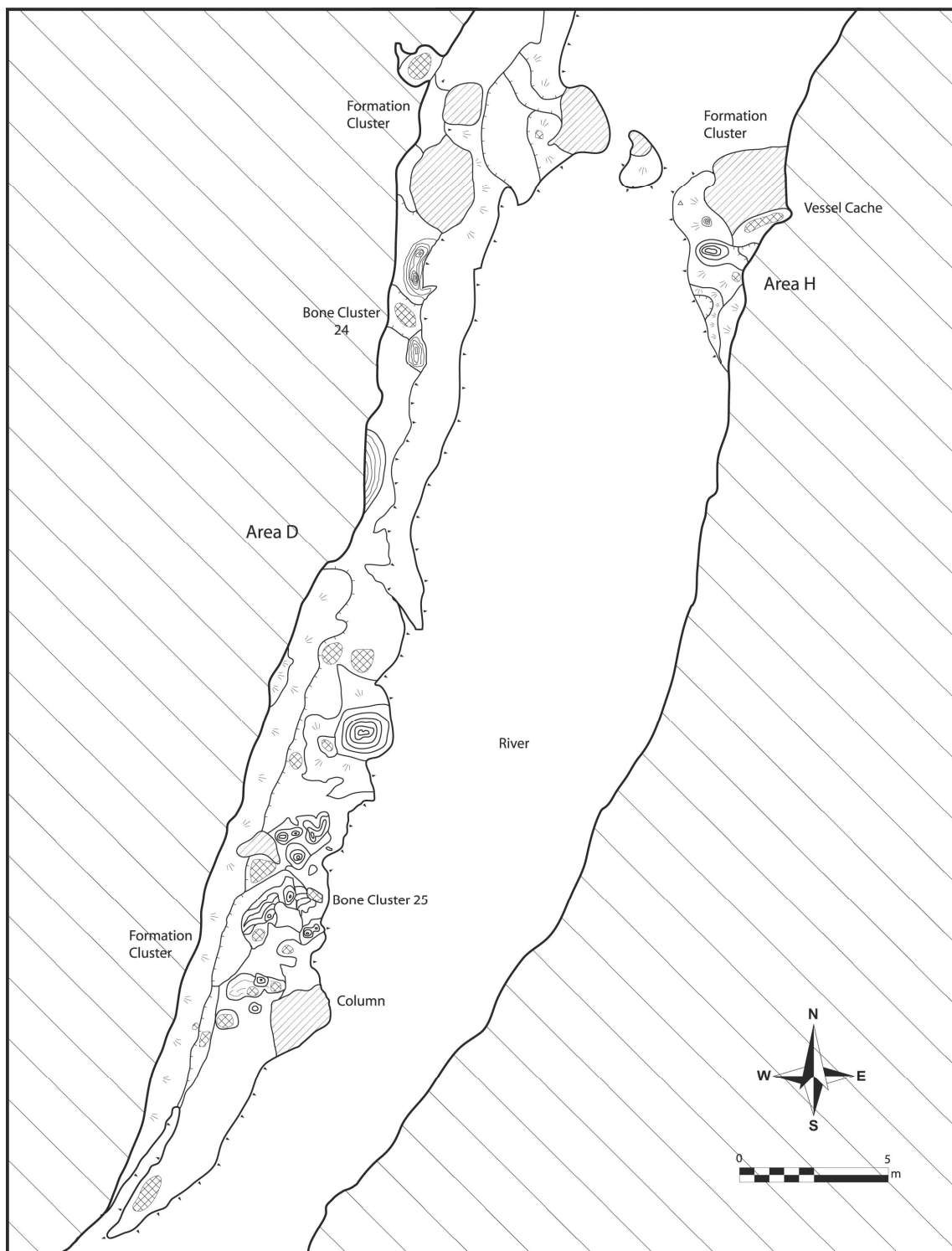
discussion on Maya cave interments, Scott states: “The presence of innumerable offerings most completely unassociated with the burials suggests that the human skeletal material should be viewed as an offering as well” (Scott 1997:4).

#### Bone Cluster 24

Bone Cluster 24 is located in Area D (Figure 8) and includes the disturbed remains of an adult (Figure 9). The partial articulation of a number of foot bones suggests that this individual was most likely a primary interment. The skeletal remains are concentrated in a depressed, pool-like area surrounded by a wall, cave formations, and a drop to the river, forming a semi-enclosed or semi-circumscribed space. This pool is situated in an area most likely to encounter foot traffic. Preservation of the bone is fair, and damage can be attributed to heavy pedestrian traffic through this area (as footprints are evident). Other taphonomic processes such as fluctuating humidity, water-flow, and standing pools of water also were likely to have contributed to the damage. Active formations both above and around the remains caused significant water damage, such as drip-holes in the skeletal material. Heavy water activity may also explain the absence of many of the skeletal elements, as the remains are perched on a sloped area near the edge of the ledge and could have easily washed over.

All of the skeletal material was found on the surface and within the 1cm-thick layer of guano matrix. Directly below this guano lens is a thin, compact clay layer above an ash and charcoal lens, suggesting that a burning episode occurred prior to the placement of the deceased. Assessment of the skeletal remains indicates that the individual is a young adult male, 18 to 24 years. Age was determined by the eruption of the third molars and the degree of dental attrition.





*Figure 8: Map of Ledge 2, Area D and H, showing location of BC24 and BC25*

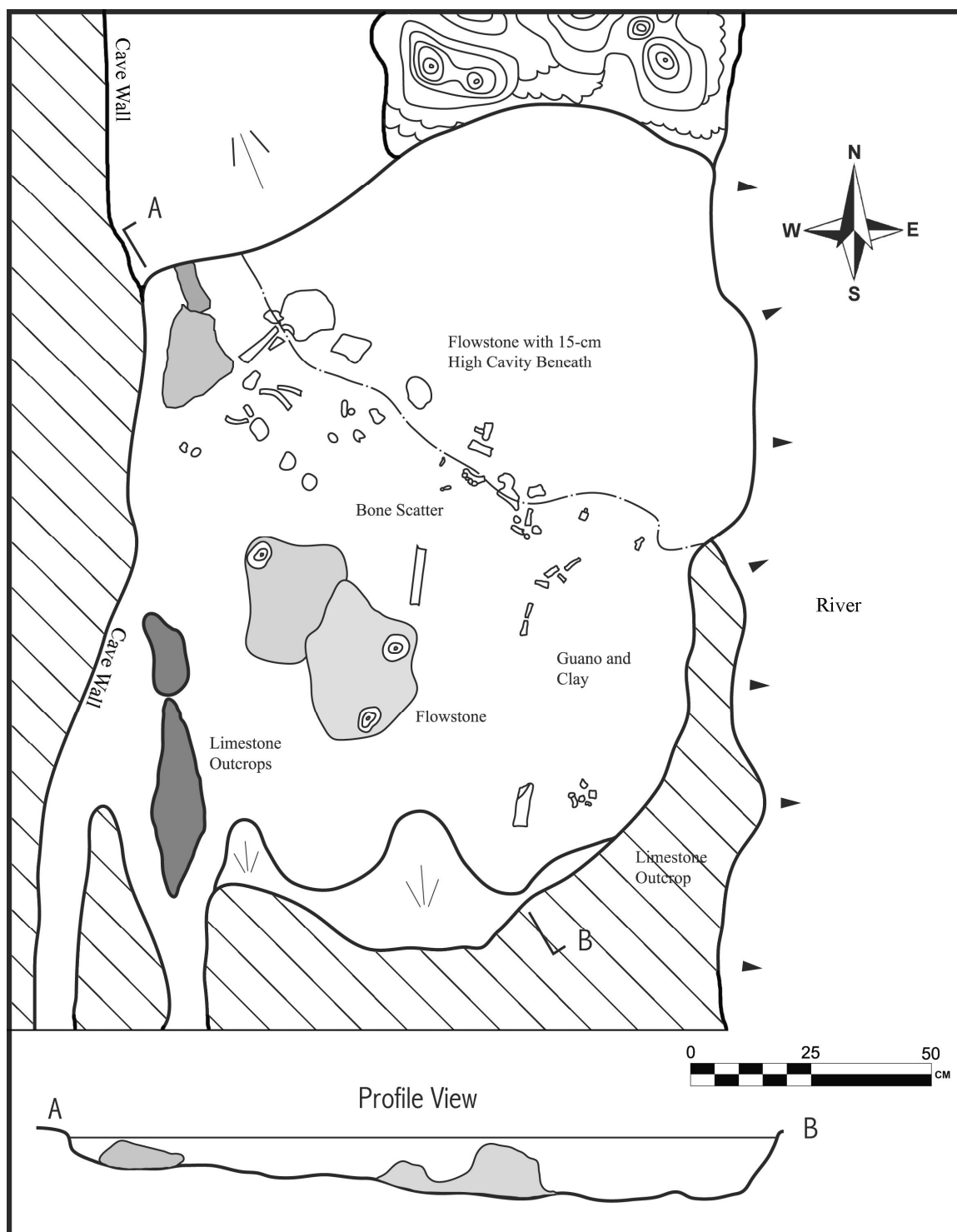


Figure 9: Plan and Profile of BC 24

Pathological manifestations include four maxillary periapical abscesses and some form of non-specific infection as indicated by cloacae on a vertebra and parietal bone and extensive remodeling of the right supraorbital margin. The individual also exhibited dental modification of a central and lateral maxillary incisor. The central incisor is classified as a Romero's B4 and the lateral incisor is likened to Romero's C3 (Figure 10). The other two maxillary incisors were missing but presumably were also modified.

With regard to mortuary context, little information could be salvaged from this bone cluster. For instance, there were no associated artifacts, although looting and taphonomic factors may explain this. The incomplete and disturbed nature of this individual made the determination of burial orientation difficult; however, the position and location of the remaining skeletal materials suggest that the individual was placed in a supine extended position, oriented northeast- northwest, head to the northeast (toward the entrance). The remains are located in a shallow depression of the floor. An ash and charcoal lens below the bones suggests a burning episode occurred prior to the placement of the deceased.

#### Bone Cluster 25

Bone Cluster 25 (Figure 11) is located in Area D of Ledge 2 (see Figure 9) and includes the partially articulated remains of a child. The individual is situated on the surface of an enclosed pool-like area close to the edge of the ledge. There is a large stalagmite forming the eastern side of the pool and a limestone formation defines the remaining walls of the pool. The general area contains many cave formations including draperies (large, drapery-like cave formations), large stalagmites and stalactites. It is a

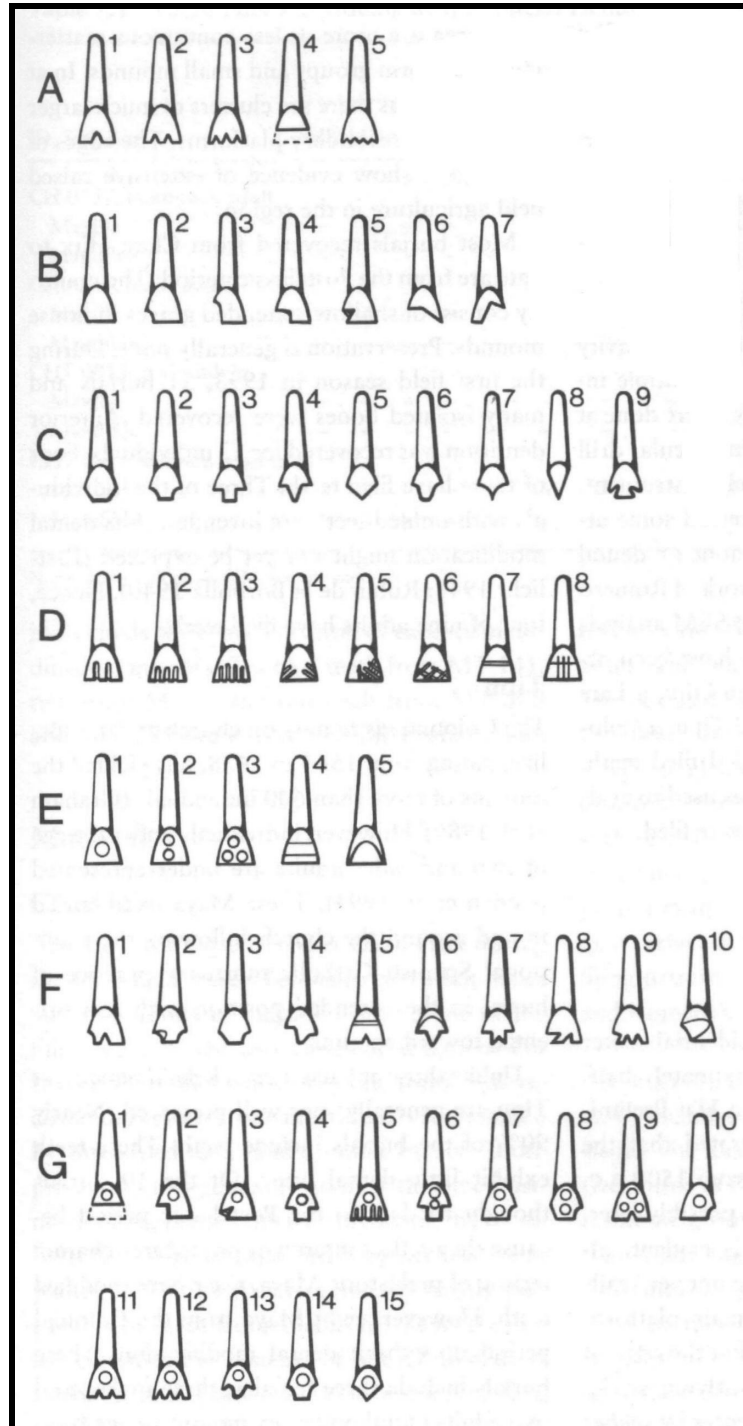


Figure 10: Romero's System of Classification for Modified Dentition (from Havill et. al 1997)

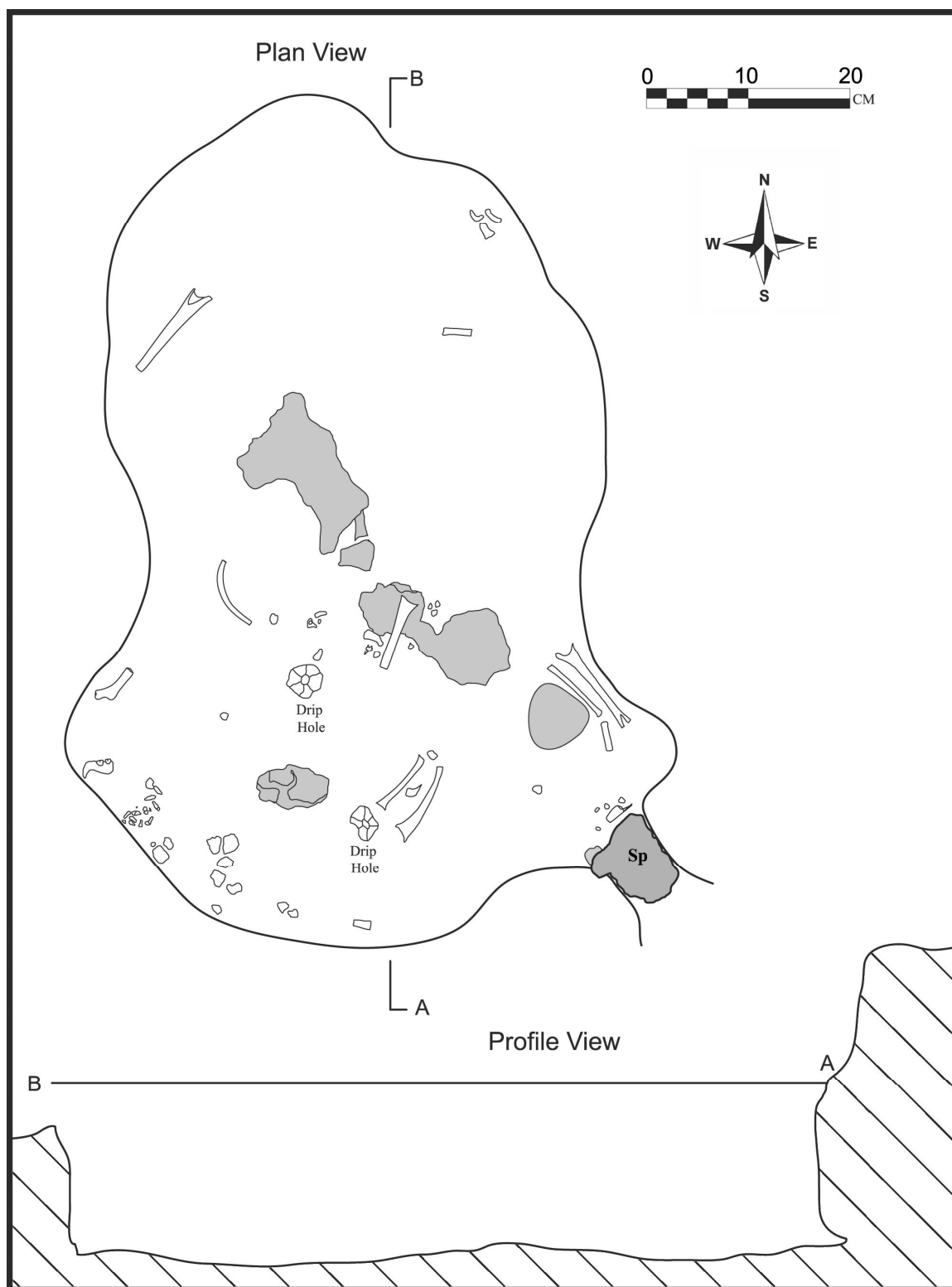


Figure 11: Plan and Profile of BC25

very wet, active area and appears to have been so in the past. It is possible that the dry pool containing the skeletal material was at one time filled with water. This is suggested by a drainage area of the pool that has been artificially blocked by a number of speleothems, placed in such a way as to block the drainage of water. The surface of the pool now exhibits a thin layer of guano overlying a compact clay layer and ash lens. Preservation of bone, in general, is good due to the thin layer of calcite that coats many of the bones; however, the skeletal material is fragmented, probably as a result of drip action causing the erosion, calcification and breakage of much of the bone. Thus, the disturbance of the remains is more likely to be a result of taphonomic processes rather than human intrusion.

Analysis of the remains in BC25 indicates that the individual was a child of four to five years of age based on dental eruption and maturation, degree of vertebral union, as well as dimensions of the long bones. No pathologies or traumas were observed. Although disturbed, there were a number of skeletal elements that were articulated suggesting that the body was in an atypical burial position (here, atypical refers to positions that deviate from those that are more common for the ancient Maya, such as extended, supine or flexed). The child's head is located in the southwestern end of the pool (head oriented into the cave rather than towards the entrance), and it seems clear that the individual was not in an extended supine position, because of the placement of the bent left leg and left arm relative to other skeletal elements. Moreover, the location of the right foot bones, which are at the opposite end of the rimstone pool from the left foot bones, argues against a flexed position for this individual. No cultural materials were

directly associated with this individual although ceramics on the ledge suggest Late Classic utilization of the area.

### ***Ledge Three***

Ledge 3 consists of three levels, two of which exhibit distinct areas of ancient Maya activities (Figure 12). Area A is the lower of the two and contains the remains of a single individual (BC26), various Late Classic jar and bowl sherds, a number of broken speleothems, and rock alignments. The area has been trampled by foot traffic, damaging much of the skeletal material. Footprints in the area suggest that the disturbance occurred in recent times.

The uppermost level of Ledge 3, Area B, is significant because it appears to be untouched by looting activity suggesting that the cultural materials are in their original positions. The area is also significant because it contains the remains of an almost fully articulated child (BC27) (see below). This area of the ledge is difficult to access, which may explain its pristine condition. Another interesting feature is a drapery formation that has been modified by the ancient Maya to access the interment area. Fragments of the broken formation are still visible and are calcified to the floor. Artifacts in the area consist of Late Classic ceramic sherds.

### **Bone Cluster 26**

Bone Cluster 26 (Figure 13) is situated in a surface depression of the floor in a restricted area (narrow passage) between a cluster of formations and the cave wall. The bone cluster is located in an area most likely to be encountered by foot traffic. Thus, the bones have been highly disturbed, particularly in recent years. However, a partially

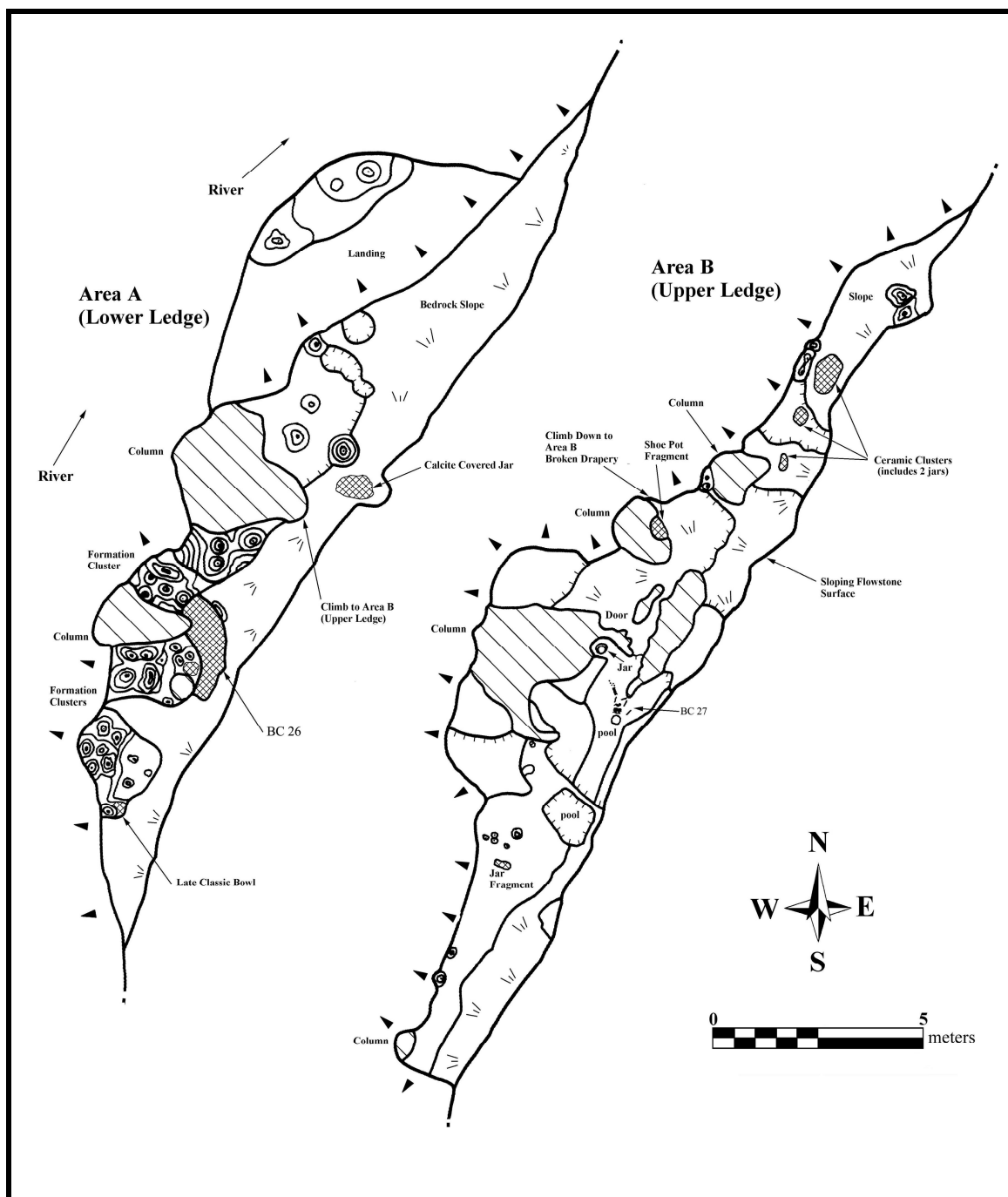


Figure 12: Map of Ledge 3, Areas A and B.



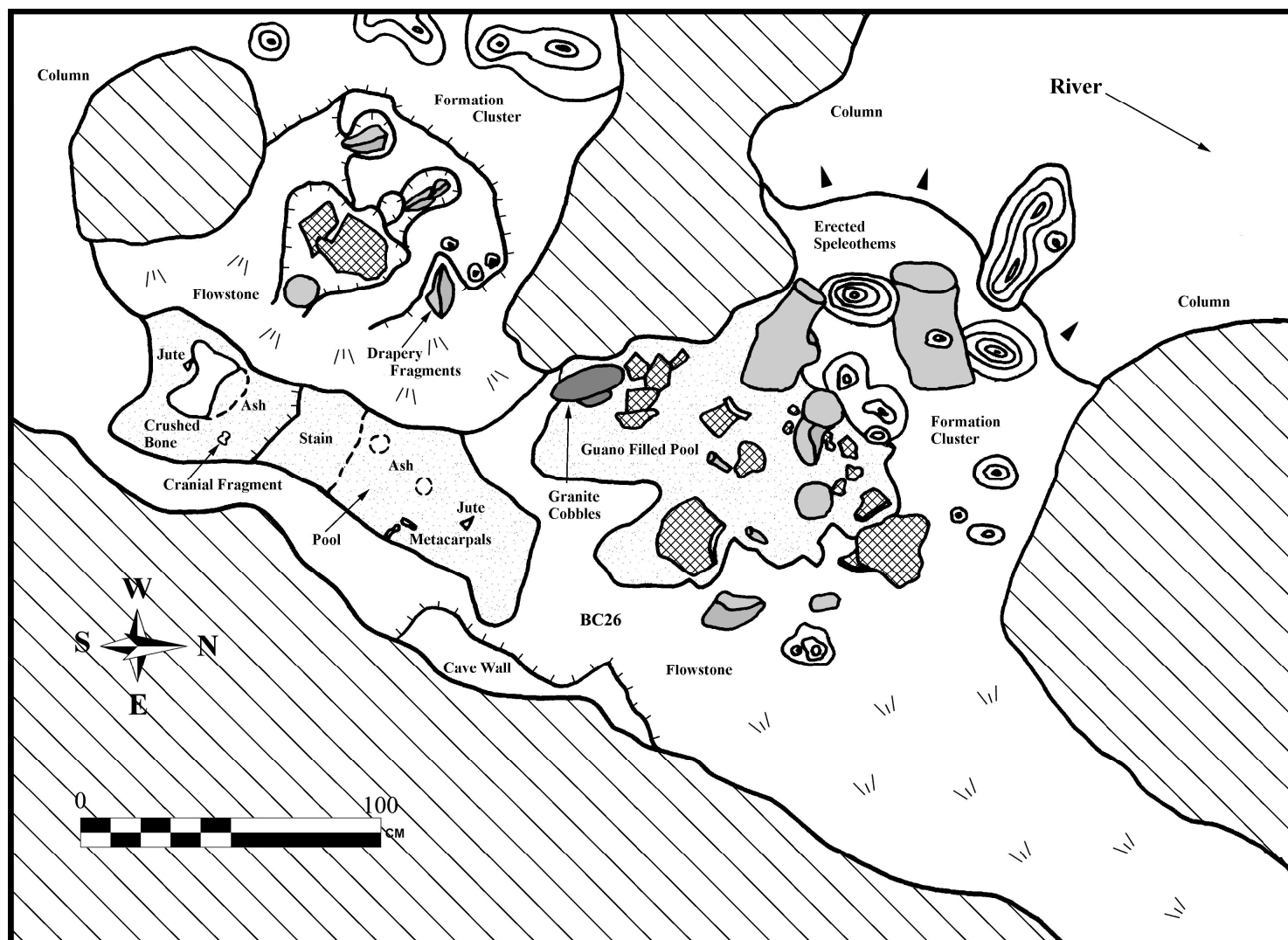


Figure 13: Plan of BC 26

articulated hand supports the idea that this individual was most likely a primary interment. This is further supported by the correct anatomical position of clusters of skeletal elements (i.e., cranial materials in the southern end of the pool, ribs and vertebrae in the central area, and foot bones in the northern terminus of the pool, etc.).

Bones, bone fragments and teeth of the individual were observed on the surface and 2cm into the subsurface, and bone condition ranges from extremely fragile and fragmented to well preserved. The skeletal remains are situated on a bed of charcoal, ash, and clay which overlay bedrock. Artifacts associated with this individual include two *jute*, a slightly polished bone hairpin, and ceramic sherds. Situated in an adjacent pool are a small stack of granite cobbles, several jar sherds, and two speleothems that had been placed against a column.

Because of the degree of disturbance to BC26, orientation and position of the individual could not be established. Most of the cranial material was observed in the southwestern end of the depression, suggesting that the head may have been placed to the southwest (into the cave). The amount of calcite observed on a number of the bones suggests that the remains were submerged in water for some period of time.

Examination of the human remains from BC26 indicates that this individual was a young adult male, between the ages of 18 and 24 based on dental attrition and seriation. The cranium had been artificially modified, exhibiting flattening of the occipital. Porosities on the parietal and occipital are indicative of porotic hyperostosis, and a large porous depressed area near lambda may be attributed to the apparatus used in cranial modification. This individual also exhibited a number of dental pathologies including enamel hypoplasias, dental caries, and traces of calculus.

### Bone Cluster 27

BC27 (Figure 14) is a primary interment of a child (aged 3.5 - 4.5 years) located on the surface of a seasonally active rimstone pool. Age at death was determined on the basis of dimensions of long bones. The individual was oriented almost exactly north south (head to the south, into the cave) and was left in a prone position with the head situated on slightly lower ground than the feet. The legs were partly extended but appear as if the individual was haphazardly placed in the pool based on the positioning of the bent, right leg (see Figure 14) relative to the rest of the body. Preservation is excellent due to calcification of most of the skeletal material; however, that also concealed and distorted the appearance of the bone. The splanchnocranium is partially calcified, hindering observation of the maxillary dentition. The mandible is also concealed by calcite. There is some artificial fronto-occipital flattening causing slight bulging of the parietals, and extreme flattening of the frontal bone. No obvious pathologies were observed.

No artifacts are directly associated with the individual. A small granite cobble, a speleothem and a small ceramic vessel are the only cultural materials within close proximity. Just north of the individual, however, a large drapery formation was broken to facilitate access to the area. Based on the nature of the breaks of the formation and the calcification of the broken fragments to a similar degree as that exhibited on the skeleton, it seems as if this event was contemporaneous with the deposition of the child in the pool.

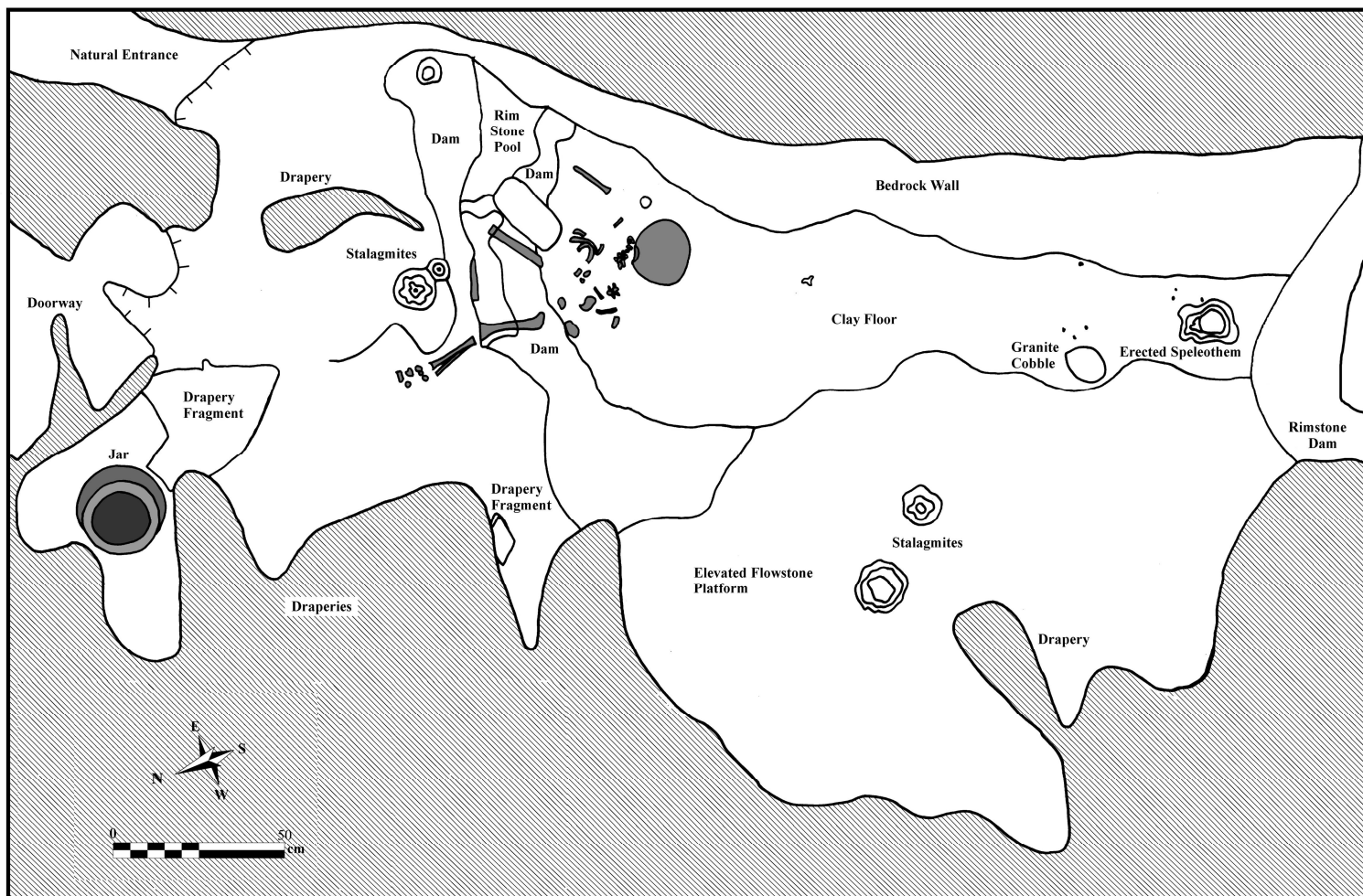


Figure 14: Plan of BC 27

### ***Ledge Six***

Ledge 6 (Figure 15) is a fairly narrow, short ledge. A single bone cluster (BC13) was observed in a small alcove at the northern terminus of a fissure (Figure 16). The bones are partially buried in alluvial sediments forming the floor. A light scatter of Late Classic ceramic artifacts and a few lithic materials are present on the surface of the ledge. Lithic materials include two obsidian blades, a chert biface, heat altered stones (both of granite and limestone), and a fragment of groundstone. Additional artifacts include *jute*, netsinkers, fragments of slate, shell beads and speleothems. Cultural features consist of a several hearths and a cluster of rocks that may have supported a ceramic vessel or were part of a hearth feature.

### **Bone Cluster 13**

The disarticulated and incomplete remains of a single individual were recorded for BC13. The skeletal material was found deep in an alcove at the terminus of a fissure near the back wall of the ledge. Associated artifacts include Late Classic ceramic sherds, a fire-altered granite cobble and speleothems. A light scatter of charcoal was also observed near these artifacts. No other cultural materials were observed with this individual.

Bone preservation is excellent, in general, which allowed for the preservation of a right pubic symphysis and the auricular surface of the right os coxa. Analyses of these two features suggest this individual was a middle-aged adult female in her 40s. Osteophytic lipping was evident on a number of the vertebrae, and the sacrum exhibited a large cloaca and extensive remodeling, indicating a non-specific infection.

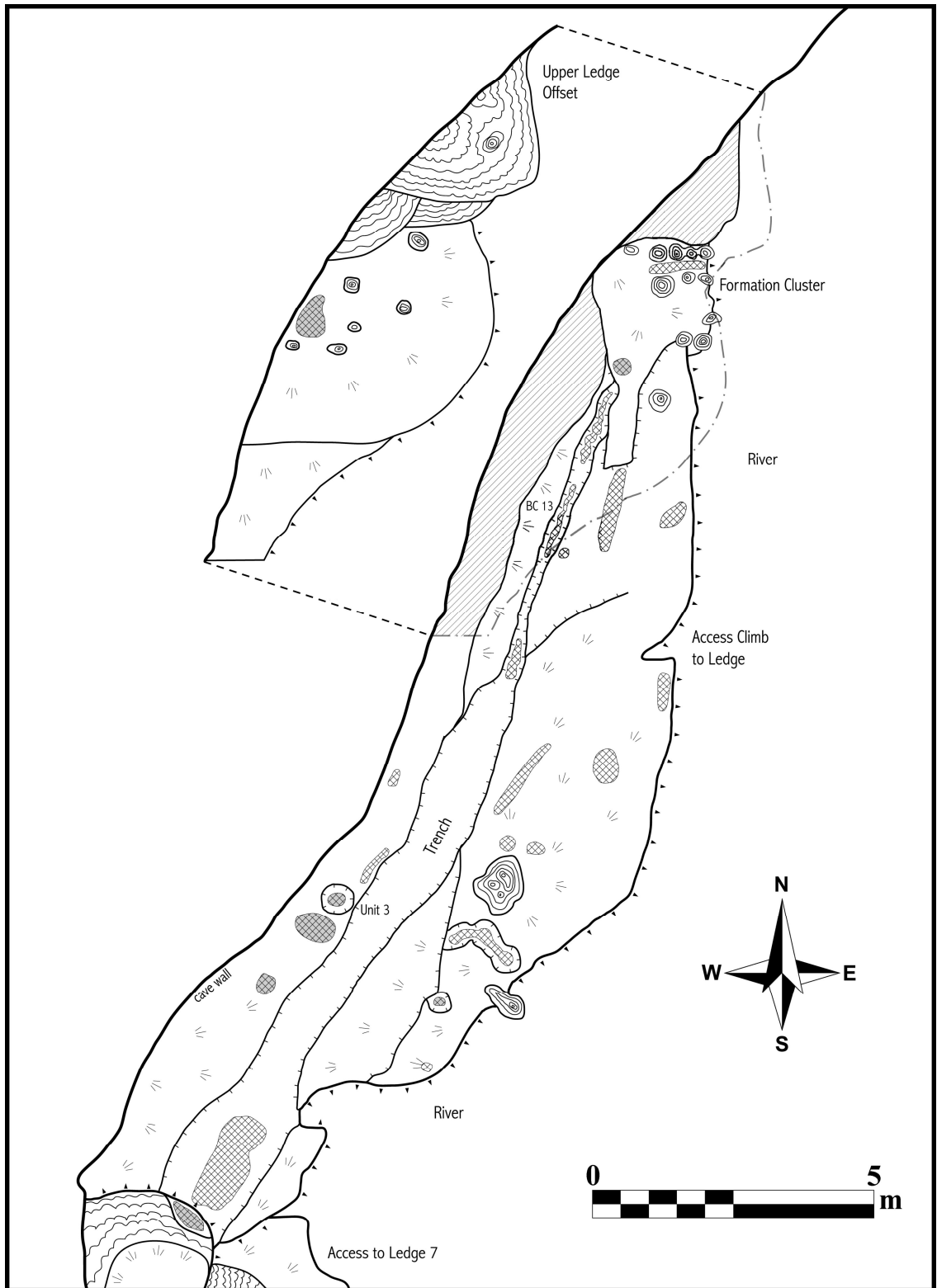


Figure 15: Map of Ledge 6 showing location of BC 13

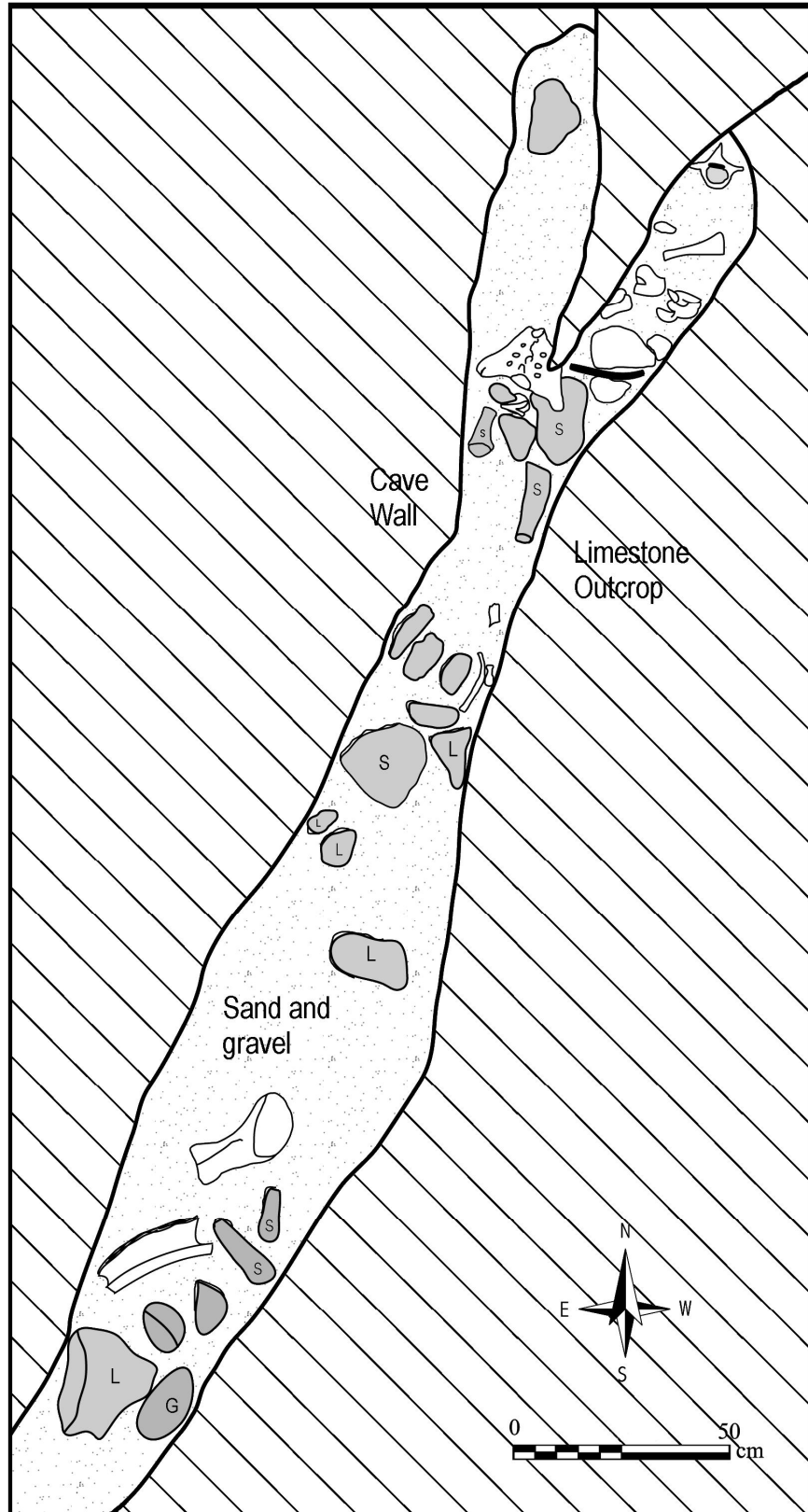


Figure 16: Plan of BC 13

Despite the excellent preservation of the skeletal material, this bone cluster was subject to taphonomic pressures. It appears that periodic flooding of the ledge had disturbed and possibly buried much of the skeletal material with alluvial sediments (particularly recently-deposited sand), or washed the bones deeper into the narrow alcove. Therefore, reconstruction of orientation and burial position is not possible, nor is it possible to determine whether there are associated grave goods as alluvial sediments have hindered the visibility of the original surface at the time of interment. However, the small cluster of artifacts noted above and charcoal scatter near the human remains suggest association based on the proximity of the materials.

### ***Ledge Seven***

Of all of the ledges evidencing ancient Maya activity in Barton Creek Cave, Ledge 7 is most accessible and hence, suffered greatly from looting and tourism. Consequently, few cultural materials remain on the ledge, and those that do have been extensively damaged, including skeletal material. One bone cluster (BC14) has been identified for Ledge 7 (Figure 17) and consists of a small scatter of bones. Cultural materials on the ledge include a number of hearths and Late Classic ceramic sherds from jars, dishes and bowls.

### **Bone Cluster 14**

BC14 consists of small, highly fragmented pieces of bone and a modified upper central incisor (Romero's A2). These skeletal materials were found in small niches of a large natural column. At the base of this formation, charcoal, sherd clusters and three broken granite cobbles were observed. Given the scant and fragmented nature of the skeletal remains, age and sex could not confidently be determined. Based on the size and



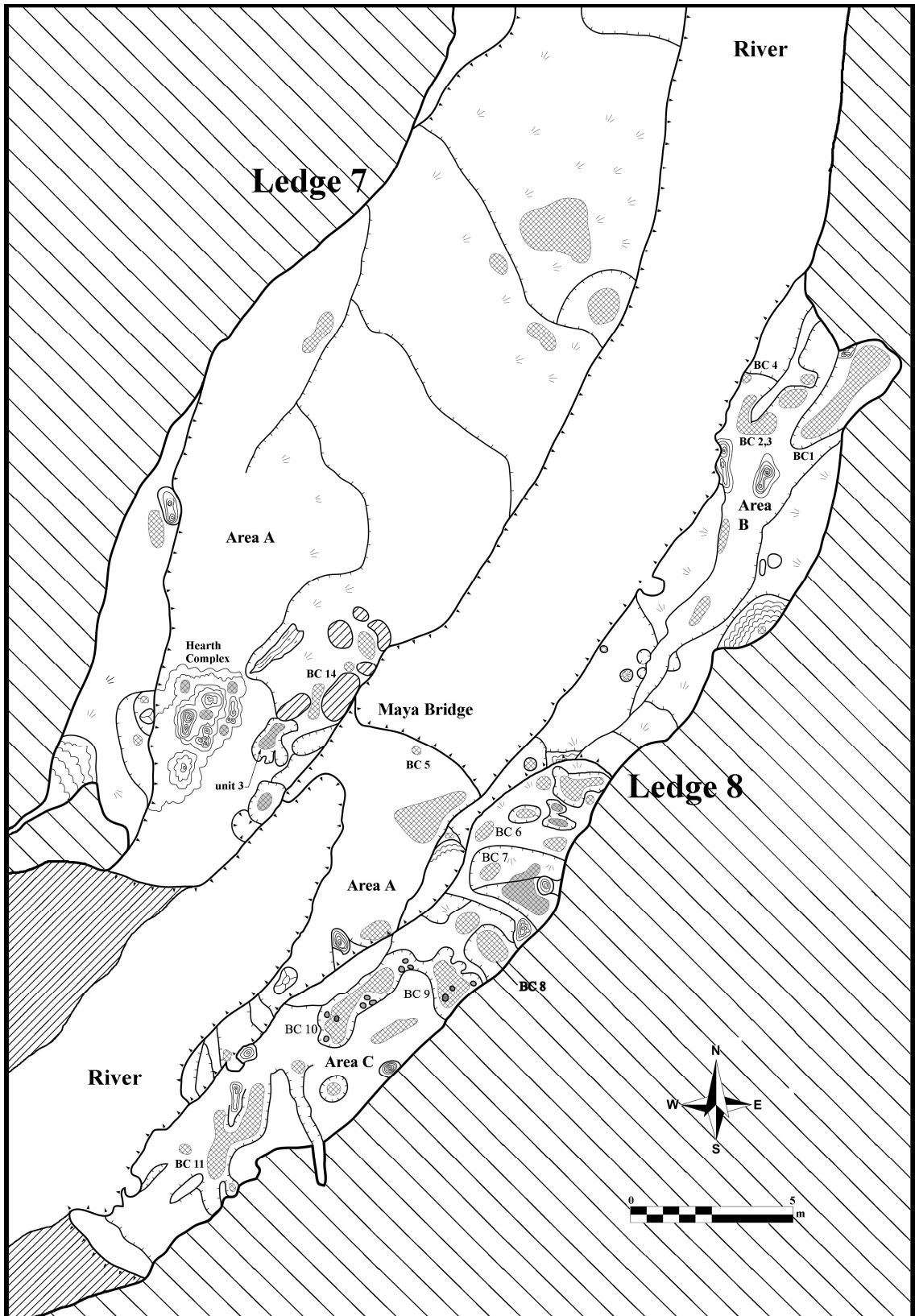


Figure 17: Map of Ledges 7 and 8 showing location of BC 1-11 and BC 14

general morphology of the remains, it appears the individual is an adult, age and sex unknown. The context of the bone cluster is also questionable and may not reflect the individual's original interment locale. Thus, little mortuary data can be generated from this bone cluster.

### ***Ledge Eight***

Ledge 8 is adjacent to Ledge 7 and contains a dense concentration of human remains and cultural materials, many of which can be viewed while standing on Ledge 7 (see Figure 17). Ledge 8 consists of three distinct areas which include two terraces, an upper (Area C) and a lower terrace (Area B), as well as a flowstone bridge (Area A) that spans the river. These three distinct areas and the associated bone clusters are described in detail below.

#### **Area A**

Area A is an eroded flowstone bridge spanning the river four meters above the water surface. It is pitted with numerous depressions, many of which contain Late Classic ceramic sherds, which seem to have fallen from Area B, above. In addition, a single complete mano was observed in this area, cached in a small niche. Area A is the lowest section of the ledge and most affected by seasonal floodwaters

One bone cluster was observed in Area A, BC 12, which consists of a partial cranium (missing the mandible and maxilla). The skull is situated on the edge of the bridge and had been placed there in recent years by tour guides, both to “enhance” the tour and discourage foot traffic on the ledges for the purpose of viewing the skeletal remains. The surface characteristics of the bone and preservation are similar to other bones in Area B, which suggests it may have originated from this region of Ledge 8. In

addition, a tour guide recently admitted to moving the skull from Area B of Ledge 8 to the bridge of Area C. Osteological details of this cranium will be summarized below.

### Area B

Area B is a terrace of Ledge 8 that is comprised of a bedrock ledge partially covered with flowstone. The main concentration of cultural material is located in and around a narrow depression on the north side of the ledge and includes human remains and ceramic materials. This area has been highly disturbed in recent times and many of the artifacts and skeletal materials had been placed in areas suitable for display for tourists. Additional ceramics and skeletal material are located in small depressions over the surface of the area. Ceramic materials primarily date to the Late Classic; however, several Early Classic sherds were also discovered.

A total of four bone clusters was recorded for Area B. These bone clusters are all disturbed by recent looting activity and tourism. However, local inhabitants of the Barton Creek valley who visited the ledge prior to its disturbance have suggested the original context of all the skeletal material was the narrow, well-defined depression located on the north side of the ledge near the cave wall. This depression contained an abundance of human remains and was labeled Bone Cluster 1. Included here are the commingled remains of at least seven individuals, in addition to ceramic material, granite cobbles, speleothems, charcoal, a chert core and an obsidian blade. Much of the non-skeletal material was used as fill to level the uneven floor of the depression. The majority of these ceramics date to the Late Classic, although, a few Early Classic polychrome sherds were observed.

Bone Clusters 2 and 3 are located to the west of this crevasse and the skeletal remains of these two clusters may have originated from BC1 as indicated by similar surface coloration and weathering of the bones, and testimonies from residents of the valley. The designation of these clusters is arbitrary because the placement of the bones resulted from the recent disturbance of the area. Bone Cluster 4 has also been arbitrarily defined and consists of a splanchnocranium and a mandible that had been placed in a niche on the edge of the ledge in recent years so as to be highly visible to the tourists from the canoe in the river below.

#### Summary of Skeletal Materials from Areas A and B

Examination of the postcranial and cranial material from Areas A and B indicate that at least seven individuals were interred in this area. All of the skeletal materials were commingled making it difficult to link the postcranial elements with the cranial materials. The individuals in Areas A and B include an infant (1-1.5 years of age), a child (2.5 to 3 years of age), four young adults (ranging between 16 –35 years of age, including at least one male and two possible females), and a middle adult female (age 35-45). The infant and child were aged on the basis of dental eruption and maturation, bone fusion, length of diaphyses, and seriation by size, while the adults were aged by seriation of dental attrition and auricular and pubic surfaces.

Dental and skeletal pathologies were observed amongst these individuals, particularly the adults. Dental pathologies, although few, include enamel hypoplasias, caries and calculus. The middle adult exhibited extensive resorption of the alveolus following antemortem tooth loss of at least five maxillary teeth. Skeletal pathologies, although less common, include a case of non-specific infection evident on a sphenoid

bone; osteophytic lipping on seven vertebrae; porotic hyperostosis on the cranial vault of one of the adults; and two cases of a depressed circular porotic area on the occipital near Lambda. As observed on another individual, this lesion may be due to the apparatus used to artificially modify and flatten the occipital.

Of all of the teeth recovered from Areas A and B, a total of four exhibited dental modification – two central incisors are modeled after Romero's A2, and two lateral incisors are modeled after Romero's C9 – all of which appear to belong to a single adult. Fronto-occipito cranial modification, of varying degrees, was observed on the entire sample from Areas A and B.

The spatial distribution of the skeletal materials along with the testimonies of local residents suggest that the original context of the skeletal materials from Area A and B was the depression or crevasse near the wall (Area B), which is now labeled BC1. As previously mentioned this crevasse was artificially leveled by the ancient Maya. The dimensions of the crevasse are four meters by one meter, with an average depth of 40cm. The dimensions suggest that a number of the individuals interred here must have been placed on top of one another because of the narrowness of the area. Burial orientation and position could not be established for those interred. Because of the looting it was not possible to determine whether these were grave goods associated with any one of the individuals. Artifacts that were recovered include ceramic sherds, granite cobbles, speleothems, a chert core and an obsidian blade. The fragmentary nature and concentration of the materials suggest they were used as fill to level the floor of the crevasse. Charcoal fragments suggest the possibility of a burning episode, but lenses of ash were not observed here as they were elsewhere in the cave, such as Ledges 2, 3, and

9. The recovery of distal phalanges and other small bony elements support the idea that these individuals were primary interments.

### Area C

Area C is the most complex part of the ledge, consisting of several features, bone clusters and artifact clusters. Hearths were a common feature, and one was used intensely enough to stain the wall with soot. The remaining features consist of triangular granite and/or limestone rock arrangements associated with the skeletal remains.

Artifacts in this area are predominantly Late Classic ceramic sherds (although a few Early Classic sherds were present), but also include one chert core, two flakes and a metate.

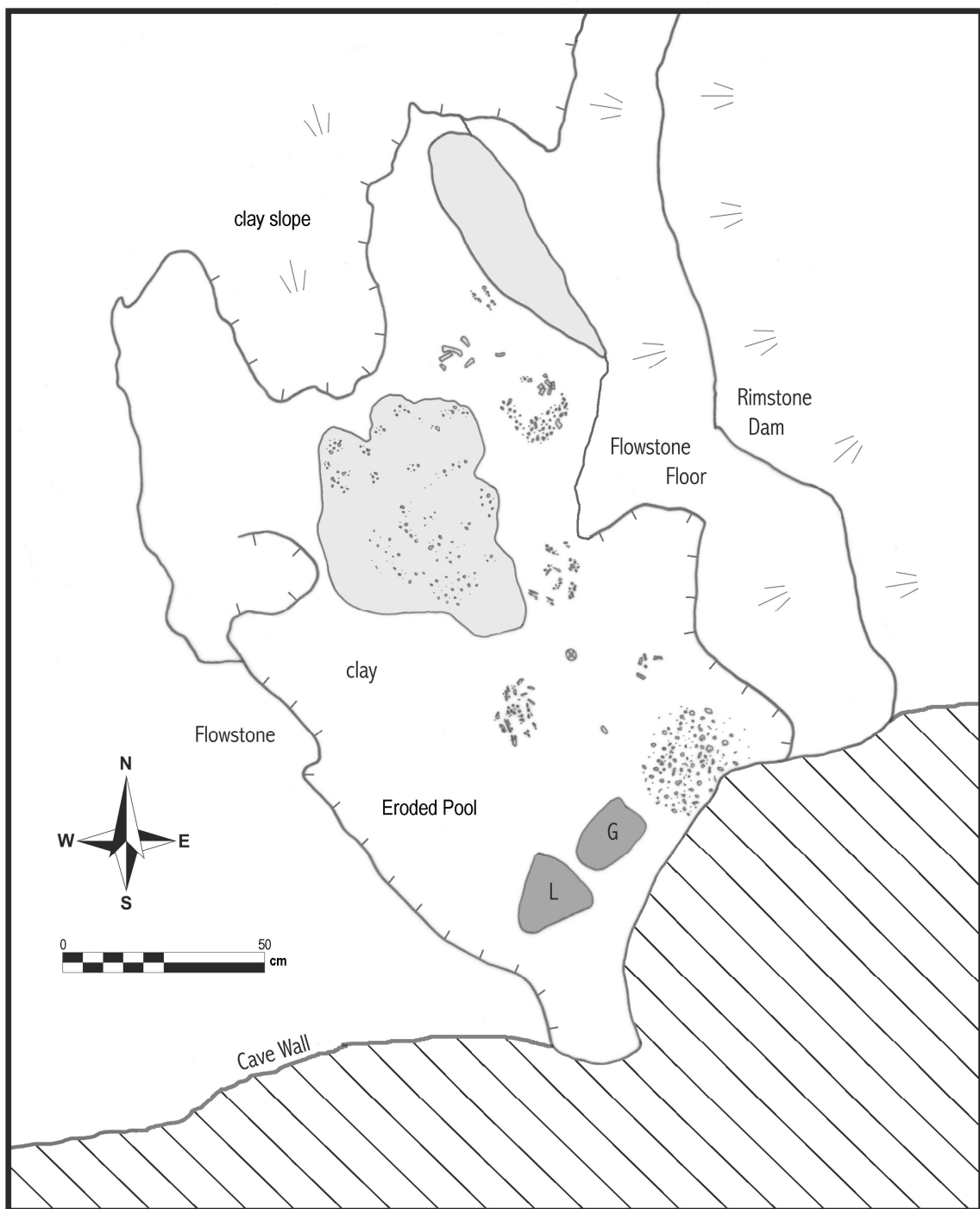
A total of seven bone clusters were identified in Area C, numbered BC 5 - 11 (see Figure 17). They are highly disturbed due to heavy pedestrian traffic and are characterized by bones and bone fragments belonging to both adults and subadults. The degree of disturbance to Bone Clusters 9, 10 and 11 is less severe, and thus it is possible to ascertain that the individuals were primary interments based on the articulation of a number of bones including hands and feet.

Bone Clusters 5 through 7 appear to be the scattered remains of an adult individual based on general morphology and epiphyseal union. The original interment location may have been a small rimstone pool, which had been artificially blocked by a large rock at its base. Ash and charcoal were observed within the guano matrix of the pool, suggesting that a burning episode occurred prior to the interment of the individual. Because the remains from BC 5 - 7 are so widely scattered, there is a possibility that these remains represent more than one individual. Due to the disturbance of these

skeletal materials, little mortuary data is available. A number of Late Classic ceramics and a large hearth feature are in the area where the human remains were observed; however, it is not possible to ascertain whether they are associated with the individual(s).

Bone Cluster 8 (Figure 18) represents the partial remains of a subadult aged 5 - 6 years based on dental eruption and maturation. As is the case for the aforementioned bone clusters, BC8 is highly disturbed and the remains fragmentary. Thus little mortuary context information is available. The individual was placed in a slight depression on the cave floor in an area that is highly active in terms of dripwater from cave formations. A small drilled bead found with the bones appears to be directly associated with the individual, possibly worn as some type of adornment at the time of death. Also, a large granite cobble and a limestone rock were situated in the depression near the wall. The presence of these materials will be discussed in more detail in Chapter 7. Finally, the location of the teeth, metacarpals, and metatarsals suggests that the individual was placed with its head to the north (toward the cave wall).

Bone Clusters 9 and 10 (Figure 19) represent the partially articulated remains of three individuals located in an L-shaped, eroded, rimstone pool. This pool is located in a particularly active area, which caused damage and displacement of the remains. The individual located in the northeastern end of the pool has been displaced in recent years, and therefore burial orientation and position could not be established. Osteological analyses suggest this individual is an adult female, 35+ years of age based on osteophytic lipping on the lumbar vertebrae and extensive tooth wear. The maxillary first incisor has been filed in a manner that resembles Romero's B5 designation. Cultural materials in the immediate area include a small cluster of Late Classic ceramic sherds and a feature



*Figure 18: Plan of BC 8*



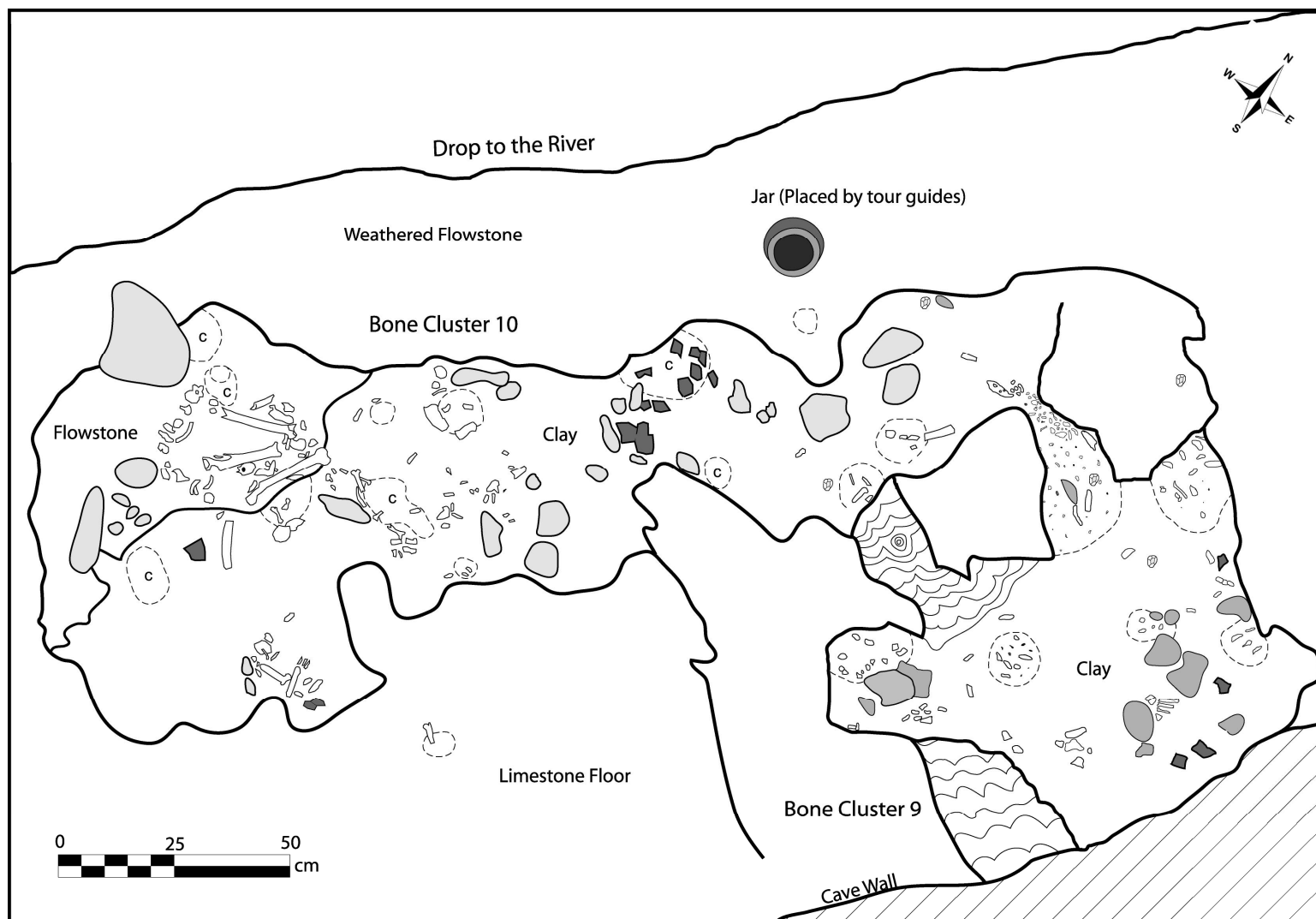


Figure 19: Plan of BC 9 and 10

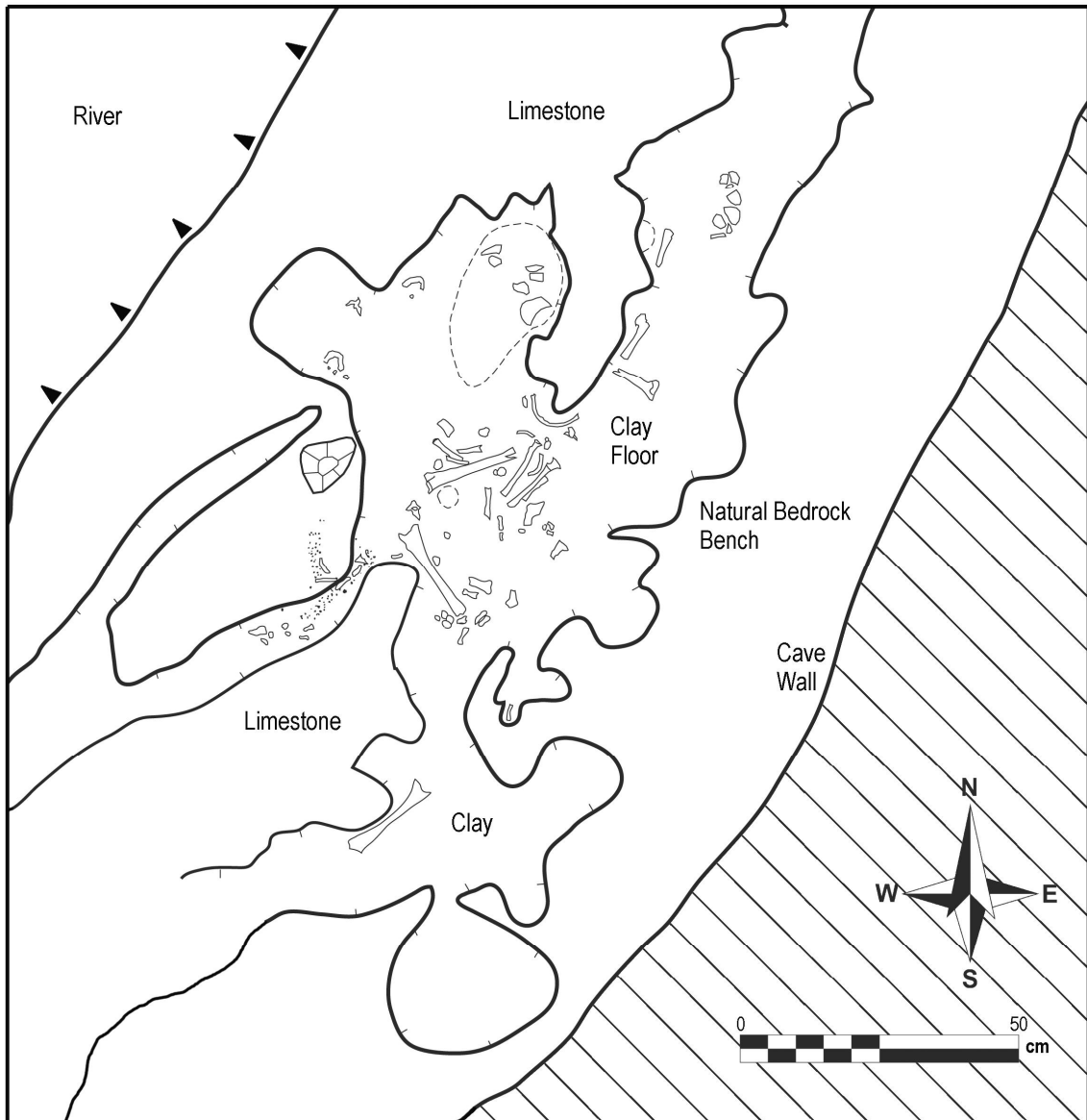
consisting of a triangular alignment of two granite cobbles and a limestone rock.

Just east of this individual lies the fragmented remains of an infant, approximately 1 - 2 years of age as indicated by bone measurements and lack of epiphyseal union of certain skeletal elements. The burial position and orientation of this individual could not be established due to the disturbed nature of the remains. A cluster of both Late Classic and Early Classic sherds are located near the bones of the infant as well as the aforementioned triangular alignment of granite and limestone rocks. No other cultural materials were observed.

The third individual is situated in the southeastern portion of the pool and consists of the fragmented, but partially articulated remains of a child 5 - 7 years old. This section of the pool is also fairly wet. Based on the positions of the few skeletal elements that remain of this individual, it appears as if it were placed with the head to the southwest (into the cave). The position of the interment could not be established. Associated cultural materials include a fragmented shoe-shaped pot, lid fragments of a ceramic vessel, and two triangular arrangements of granite and limestone rocks.

Finally, BC 11 (Figure 20) is located at the southwestern terminus of Area C, Ledge 8 and consists of the fragmented, but partially articulated remains of two individuals, both subadults. The skeletal materials are situated within an eroded flowstone pool that is currently wet and muddy, with active cave formations. A few small fragmentary ceramic sherds were found in association with the remains, but they lacked the necessary diagnostic features for chronological determination. No other cultural materials were observed.

The younger of the two individuals is located in the northeast section of the depression. Because the remains are fragmented, it was difficult to determine exact



*Figure 20: Plan of BC 11*

position of the skeleton although it appears that the head was placed in the northeastern-most section of the pool (head to the entrance). The individual is identified as an infant,

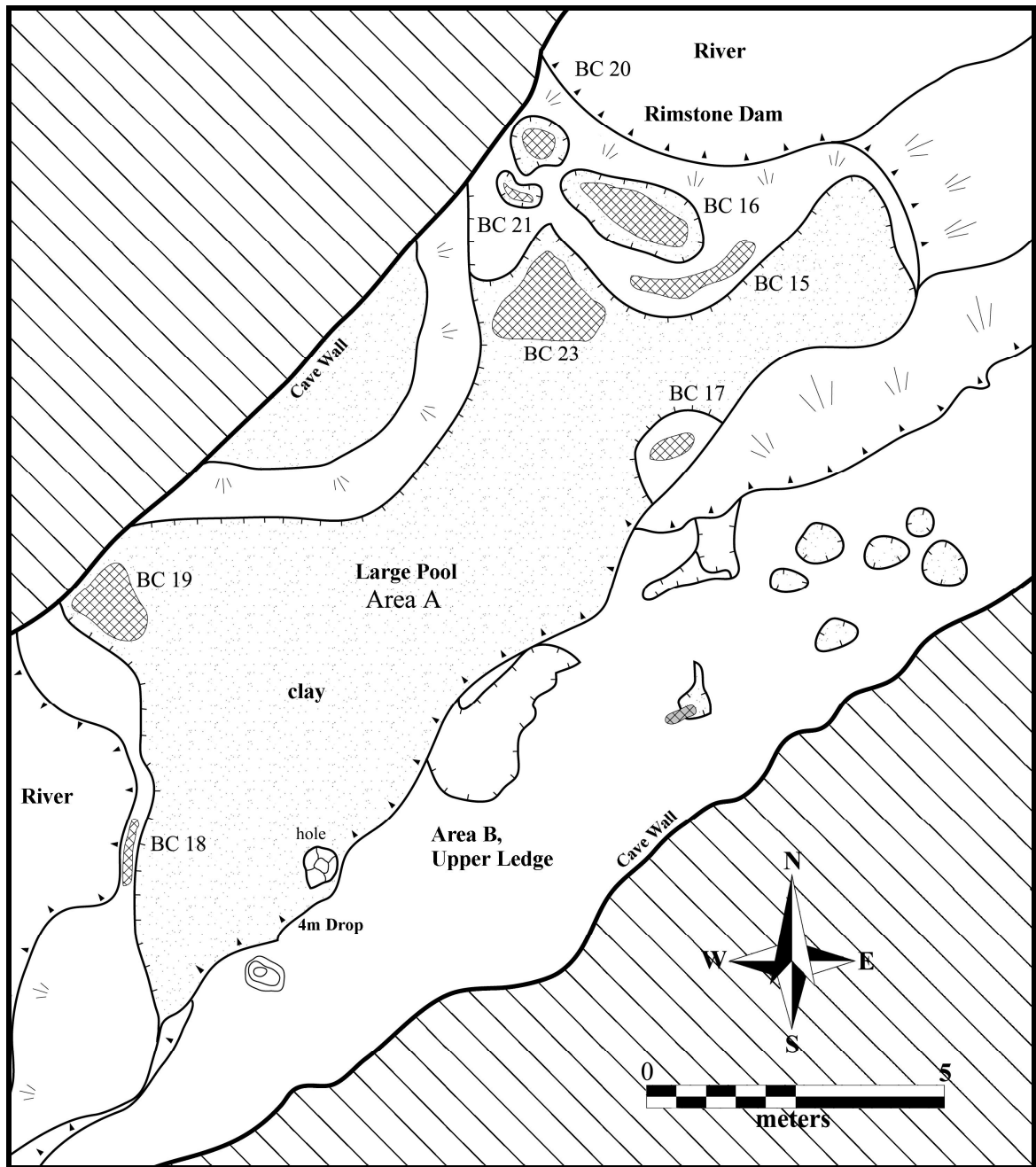
age 1-2 years based on measurements of the long bones and dental eruption/maturation. No obvious pathologies were observed.

The second individual is an adolescent approximately 14 to 16 years of age; sex could not be determined. Age was determined by dental eruption, length of long bones, and general absence of dental attrition. The skeletal remains are fragmentary; however, partial articulation of a number of elements (including an articulated foot, leg and arm) suggest that the individual may have been lying on the right side, flexed, with the head to the north. It also appears that the left arm was situated behind the back, possibly indicating that the arms had been tied behind the back. No pathologies were observed for this individual.

### ***Ledge Nine***

Ledge 9 is the furthest ledge from the entrance evidencing ritual use of the cave by the ancient Maya. It consists of two levels that were utilized for human interment; however, the majority of the human remains were observed on the lower level, Area A (Figure 21). Area A is formed by a series of rimstone dams that form a bridge that spans the cave passage above the river. It consists of a large, clay-bottomed pool and several small pools on the north side. Located within several of the pools, are the remains of at least ten individuals. All have been disturbed by taphonomic processes and looting activity. Cultural materials recovered from Area A were few and undiagnostic.

A total of eight bone clusters was identified for Ledge 9, all of which were highly disturbed. Preservation of the bone is excellent, however, despite some of the recent damage to the materials. All of the bone inventoried over the course of the 1999 and 2000 field season is surface finds; however, an abundance of skeletal material was



*Figure 21: Map of Ledge 9 showing location of BC 15-21 and BC 23*

discovered approximately 5cm below the surface level within the clay matrix. Due to time constraints and potential damage due to the general plasticity of the clay, the subsurface skeletal material was left untouched.

Little mortuary data could be collected because of the degree of disturbance, looting, and pedestrian activity in the area. At least three of the individuals had been interred within smaller rimstone pools. It appears that a minimum of seven individuals was originally situated on the floor of a large rimstone pool on the ledge based on MNI established for the ledge. One of the local residents of the Barton Creek Valley recalls the individuals lying parallel to one another on the floor of the ledge, although exact burial position could not be determined. MacLeod and Rushin also make a similar observation from their investigations of the cave in the 1970s.

There is a very low density of artifacts on Ledge 9; however, looting may account for this. The few small ceramic sherds that were observed are undiagnostic, and therefore relative dates for the ledge could not be established. Other cultural materials include a number of granite cobbles, some of which had been heat altered, speleothems, and a few other river cobbles of an unidentified material. These manuports were found both on the floor with the skeletal material and within the rimstone pools. Finally, an ash lens with charcoal inclusions was observed 10cm below the surface of the clay over the floor of the ledge, and within the rimstone pools. This suggests a burning episode occurred prior to the placement of the deceased individuals. This phenomenon will be discussed in greater detail in Chapter 7.

Of the ten known individuals interred on Ledge 9, there are three children (aged 4-7, 8-9, and 8-10 respectively), one adolescent (aged 14-16), five young adults (aged 18-24, 20-25, 20-30, 25-35 and 25-35, respectively) and one middle adult (age 35-40) whose sex could not confidently be determined. Age was determined on the basis of dental eruption and maturation, long bone length, and epiphyseal union. If possible, individuals

were seriated on the basis of dental attrition. Of the five young adults, three are male and two are female. The articulation of a number of foot and hand bones *in situ* indicates the likelihood of primary interments. The presence of distal phalanges and small epiphyses also support this claim, as these are bony elements that typically get left behind at the original location of a primary interment.

With regard to pathological conditions in the skeletal sample from Ledge 9, porotic hyperostosis was quite prevalent, and varied from sparse to dense concentrations of porosities on the cranial vault of several individuals. At least eight of the ten individuals displayed varying degrees of porotic hyperostosis. Also present in this sample were several cases of depressed, remodeled and porous bone on the occipital near Lambda, which may have resulted from the cranial modification process. Other pathologies in this sample include one case of enamel hypoplasia, an adult female who displayed abscessing and some resorption of the maxillary alveolus; and dental caries and calculus.

Cultural modifications of the cranium and dentition were evident throughout the Ledge 9 sample. Cranial modification is of the fronto-occipito flattening type. Dental modification was observed on three isolated teeth and reflected Romero's B5, C3, and C9 classifications. According to MacLeod (personal communication, 2000), one of the individuals from this ledge displayed jade-inlay teeth when she investigated the cave in the 1970s. These teeth, however, have since disappeared.

Of particular interest was the presence of burnt bone in one of the rimstone pools. At least eight bones and bone fragments displayed evidence of burning. Based on the color and nature of the burnt materials, the burning occurred while the bone was dry, and

unfleshed (Magennis 1986). The burnt remains were found on the interface between the ash lens and the thin, overlaying guano and clay matrix. The majority of the bones in this particular pool displayed no evidence of burning.

### ***The Barton Creek Cave Skeletal Series***

At least 31 individuals were interred in Barton Creek Cave. Given the fragmentary and disturbed nature of these materials, it seems likely that the number interred is higher than that which has been established here, particularly in the case of Ledges 8 and 9. An interpretation of the osteological data and the mortuary information that were presented here will follow in the next chapter.



## **CHAPTER 7**

### **Interpretation of the Data**

The primary objective of the mortuary investigations at Barton Creek Cave is to determine whether the individuals interred in the cave are victims of sacrifice or ancestors/lineage members. This chapter summarizes the results of the investigation that was conducted at the Barton Creek Cave site. It begins by synthesizing the data and describing the mortuary practices and patterns at the site. This mortuary data will then be compared to other cave sites in the region to see if patterns exist. Finally, the question of sacrifice or ancestor/lineage worship will be addressed.

#### ***Summary of Mortuary Practices at Barton Creek Cave***

In order to assess whether the individuals interred within Barton Creek Cave were victims of sacrifice or the remains of revered ancestors/lineage members, it is necessary to review the mortuary data for the 31 individuals that were identified. This information is summarized in Table 3, and described below.

#### **Interment Location**

All individuals in Barton Creek Cave are situated within the “dark zone” of the cave, which is that part of the cave lacking natural light. No individuals or human remains were encountered near the cave entrance or the “twilight zone” of the cave.

BC	Age	Sex	Location	Orientation	Position	Prim/Sec?	Artifacts	Features
22	child (8-13)	N/A	shallow pit	?	?	?	ceramics, jute,	ceramic depository
24	y. adult (18-24)	M	Depression	entrance	supine, extended	primary	non observed	ash/charcoal lens
25	child (4-5)	N/A	deep depression	cave interior	atypical	primary	non observed	blocked drainage, ash/charcoal lens
26	y. adult (18-24)	M	Depression	cave interior	?	primary	maize, hairpin, jute, ceramics	ash/charcoal lens, granite cobbles, splthms
27	child (3.5-4.5)	N/A	rimstone pool	cave interior	atypical, prone	primary	non observed	broken formations, granite cobble
13	m. adult (40s)	F	alcove/fissure	?	?	?	?	charcoal, fire-altered rock. gr. cobbles, splthms
14	adult (18+)	?	base of colum	?	?	?	ceramic sherds	granite cobbles, charcoal
1 - 4, 12	infant (1-1.5)	N/A	crevasse/depress.	?	?	primary?	maize, ceramics, obsidian, chert	levelled floor, granite cobb, splthms, charcoal
1 - 4, 12	child (2.5-3)	N/A	crevasse/depress.	?	?	primary?	maize, ceramics, obsidian, chert	levelled floor, granite cobb, splthms, charcoal
1 - 4, 12	y. adult (16-22)	N/A	crevasse/depress.	?	?	primary?	maize, ceramics, obsidian, chert	levelled floor, granite cobb, splthms, charcoal
1 - 4, 12	y. adult (24-30)	F?	crevasse/depress.	?	?	primary?	maize, ceramics, obsidian, chert	levelled floor, granite cobb, splthms, charcoal
1 - 4, 12	y. adult (18-30)	F?	crevasse/depress.	?	?	primary?	maize, ceramics, obsidian, chert	levelled floor, granite cobb, splthms, charcoal
1 - 4, 12	m. adult (30-45)	F	crevasse/depress.	?	?	primary?	maize, ceramics, obsidian, chert	levelled floor, granite cobb, splthms, charcoal
1 - 4, 12	y. adult (30-35)	M	crevasse/depress.	?	?	primary?	maize, ceramics, obsidian, chert	levelled floor, granite cobb, splthms, charcoal
5-7	adult (18+)	?	rimstone pool	?	?	?	ceramics nearby	blocked pool, ash/charcoal lens
8	child (5-6)	N/A	slight depression	cave wall	?	primary?	drilled bead	granite cobbles, limestone rocks
10	adult (35+)	F	rimstone pool	?	?	?	ceramics nearby	granite cobbles, limestone rocks
10	infant (1-2)	N/A	rimstone pool	?	?	?	ceramics nearby	granite cobbles, limestone rocks
9	child (5-7)	N/A	rimstone pool	cave interior	?	?	Ceramics	granite cobbles, limestone rocks
11	infant (1-2)	N/A	slight depression	entrance	?	?	Ceramics	none observed
11	adolecnt (14-17)	N/A	slight depression	river	atypical, flexed	primary	Ceramics	none observed
17,21	child (4-7)	N/A	Indeterminate	?	?	primary?	none observed	Granite cobbles, ash lens
17	child (8-9)	N/A	Indeterminate	?	?	primary?	none observed	ash lens
15	child (8-10)	N/A	Indeterminate	?	?	primary?	none observed	ash lens
16 -18	adolecnt (14-16)	N/A	Indeterminate	?	?	primary?	none observed	ash lens
15	y. adult (18-24)	M	Indeterminate	?	?	primary?	none observed	ash lens
17	y. adult (18-25)	F	Indeterminate	?	?	primary?	none observed	ash lens
18	y. adult (20-30)	M	Indeterminate	?	?	primary?	none observed	ash lens
18	y. adult (25-35)	M	Indeterminate	?	?	primary?	none observed	ash lens
18	y. adult (25-35)	F	Indeterminate	?	?	primary?	none observed	ash lens
16	m. adult (35-40)	?	Indeterminate	?	?	primary?	none observed	ash lens

In addition, individuals are in areas that are fairly inaccessible. Access to the bone clusters in many areas proved challenging in many areas and required the use of vertical climbing equipment and/or technical climbs. However, this also protected some of the individuals from damage, such as that observed for BC27, Ledge 3.

Almost all of the individuals in Barton Creek Cave were placed in some form of a circumscribed feature such as a shallow or deep depression, pit, alcove or crevasse. Taphonomic disturbance and looter damage hindered the identification of the primary location for one individual (BC14) from Ledge 7, and an individual (BC5 - BC7) from Ledge 8. A number of the depressions in which remains are found are rimstone pools that seasonally flood or were filled with water in past times. Water lines on the wall of the rimstone dams and thick deposits of calcium carbonate on the bones indicate that some individuals lay in still-standing water for extended periods of time.

There are a few cases in Barton Creek Cave where individuals were placed in an area where pedestrian traffic (in past and present times) was inevitable and has resulted in significant damage to the skeletal material. For instance, two young adult male individuals (BC24 and BC26) were each placed in perpetually-active, and thus muddy areas of the cave, on pathways that access other sections of the ledge. The location of these would be an unlikely choice for the placement of an important lineage member (Brady 1989; Scott 1997). This same phenomenon of individuals encountered in pathways and areas of the cave subject to frequent flooding was noted by Brady in the case of Naj Tunich. He argues that the extremely wet and muddy location for one of the interments suggests the individual was a sacrificial victim rather than a deliberate interment (Brady 1989:262).

### Orientation

In mortuary archaeology, the conventional method for determining burial/interment orientation is to use either cardinal directions or orientation relative to an architectural structure. For the Barton Creek Cave skeletal series, it was quickly discovered that the orientation of the individuals showed no correlation with cardinal directions, but some individuals may be oriented relative to “structural features” if one considers the cave as a structure. Therefore, it seemed possible that the Maya oriented some individuals with their head towards the back of the cave and others with their head toward the entrance. Whether or not this phenomenon is ritually significant is unknown at this time, but requires further investigation at other cave sites.

Unfortunately, taphonomic and looting disturbance prevents the assessment of interment orientation. Out of 31 individuals, the orientation for only eight could be established (summarized in Table 3): four were oriented with heads toward the interior of the cave, two individuals were oriented with their heads toward the entrance, and the other two were oriented with their heads toward the wall and the river, respectively. Although the sample is very small, there does not appear to be a consistent pattern of orientation.

### Interment Type

With regard to interment type, the purpose was to establish if the Barton Creek Cave individuals, 1) represent primary or secondary interments; and, 2) are either single or multiple interments. Again, the degree of disturbance to many of the skeletal deposits made the assessment of interment type for many individuals impossible; however, five individuals are primary interments (with confidence), 18 individuals are classified as

most-likely primary interments, and the remainder are too disturbed to determine. Both single and multiple interments are represented in the Barton Creek Cave sample and are summarized in Table 4 below.

Looking first at single interments (Table 4), no obvious relationship exists between age and/or sex and interment type. On the other hand, all three infants were found in multiple interments with at least one older individual. The multiple interments in Barton Creek cave typically contain a combination of adults and subadults.

Table 4: Single and Multiple Interments

<b>Single Interments</b>	<b>Multiple Interments</b>
Child (BC 22, Ldg 2)	Infant, Child, four Young Adults (one male, two female?, one ?), Middle Adult Female (BC1-4, Ldg 8)
Young Adult Male (BC24, Ldg 2)	Infant, Child, Adult (35+) Female (BC9-10, Ledge 8)
Child (BC25, Ldg 2)	Infant, Adolescent (BC11, Ledge 8)
Young Adult Male (BC26, Ldg 3)	3 Children, 1 adolescent, five Young Adults (three male, two female), Middle Adult (BC15-21, 23)
Child (BC27, Ldg 3)	
Middle Adult Female (BC13, Ldg 6)	
Adult (BC14, Ldg 7)	
Adult (BC5-7, Ldg 8)	
Child (BC8, Ldg 8)	

### Grave Goods

Grave goods are practically absent in the Barton Creek Cave sample. The most common artifact in the vicinity of human remains is highly fragmented sherds. These ceramic materials are found on all ledges evidencing Maya usage and show little to no direct association with the human skeletal remains. In one of the multiple interments (BC1-4, Ledge 8), ceramic sherds were used as fill to level the floor of the crevasse, along with other materials including limestone rocks, speleothems, and granite cobbles. There is one instance of a ceramic vessel in fairly close proximity to human skeletal

material, and that is the relatively-undisturbed interment of a child (BC27, Ledge 3).

However, the vessel does not appear to be directly associated with the child. Rather, the child and the vessel are part of a larger ceremonial context and therefore, seem to serve the same purpose, which may be as an offering.

Other materials that may be classified as possible grave goods include personal adornments, such as a bone hairpin found with a young, adult male (BC26, Ledge 3), and a drilled bead found with a young child (BC8, Ledge 8). However, these may have been worn by the individuals at time of death and therefore, are not necessarily *grave goods*. Two *jute* were also found in association with this young, adult male. Finally, an obsidian blade was found in the crevasse containing multiple individuals (BC1-4, Ledge 8), and may be classified as a grave good.

It is important to note that grave goods are often perishable and are not necessarily preserved in the archaeological record. Therefore, items such as plants, wood and textiles that are interred with the deceased have been documented in ethnographic and ethnohistoric reports, but are rarely encountered in an archaeological context. In Barton Creek Cave, however, carbonized plant remains were found in association with cultural features and bone clusters. For instance, carbonized maize was found in association with BC 1 - 4 and BC 26. These materials are currently under investigation by Morehart (Morehart, personal communication 2002).

#### Associated Features

There are a variety of cultural features that are associated with the interments in Barton Creek Cave. One of the most common features is the modification of cave formations near, or in direct association with the interment. On Ledge 3 for example,

drapery formations were broken through by the ancient Maya to the area in which skeletal remains are present. Other modifications include blocking drainages in pools with limestone rocks and speleothems. It is not clear whether the purpose of this was to try to block water from draining, or whether drainages were inadvertently blocked to complete a semi-circumscribed enclosure. Nevertheless, these drainage blocks are evident in at least two of the pools in which there are interments.

The inclusion of one or more granite cobbles with an interment is a common feature in the Barton Creek Cave sample (see Table 3). Granite does not occur naturally in Barton Creek Cave, which means that these cobbles were transported to the cave by the ancient Maya. Some of these granite cobbles are found in clusters with other limestone rocks in arrangements of anywhere from 3 - 5 stones. One possible explanation for these arrangements is that they were used to hold torches or provide support for ceramic vessels. Little is known about the inclusion of foreign materials such as granite in caves; however, the granite in Barton Creek Cave is analogous to the slate materials found in the Roaring Creek Caves such as Aktun Tunichil Muknal and Aktun Yaxteel Ahau. These manuports are a common feature in caves and are often associated with interments.

Ash and charcoal lenses are also common under interments in the Barton Creek Cave sample. Ash and charcoal lenses are present just below the clay surface for the Ledge 2, Ledge 3, and Ledge 9 interments. In some instances, such as Ledge 6 and 8, the lack of matrix and/or heavy water activity made it impossible to determine whether there was an ash and charcoal lens; however, charcoal fragments were observed with the skeletal materials in these instances. The presence of these lenses suggests that a burning

episode occurred prior to the placement of the deceased. Generally, the skeletal remains exhibit no sign of burning. This would suggest that the bone was fleshed and/or the ashes and charcoal had cooled when the deceased was placed on the floors of these depressions. One exception is BC16, Ledge 9, where several skeletal elements displayed evidence of burning. This burning episode occurred after the bones were dry and defleshed, suggesting that this burning transpired long after the deposition of this individual. Based on the skeletal materials from BC16 (which contain both burnt and unburnt bone from at least two individuals), it seems likely that the Maya burned the area prior to the placement of a deceased individual, even if the feature already contained an individual that had been interred in past times. Although ash lens, charcoal and other forms of burning are common features in caves in the Maya area (Brady and Prufer 1999:135), their association with cave interments has not been reported elsewhere.

#### Interment Position

Due to the amount of looting disturbance and other taphonomic effects, the interment position could not be established in most instances. Of the 31 individuals in Barton Creek Cave, interment position could be established in four cases. Of these four individuals, one (BC24, Ledge 2) appears to have been placed in an extended supine position; however, this can not be stated with total confidence, as many of the bones are missing and the position has been reconstructed based on the position and placement of the bones that remained.

The other three individuals (two children, one adolescent) are considered to exhibit “atypical” interment positions. Here, atypical refers to positions that deviate from those that are more commonly observed for the ancient Maya, specifically extended,



supine, or flexed individuals. For instance, BC 25, Ledge 2 represents the skeletal remains of a young child (age 4-5) whose position deviates from the norm based on the location of the leg bones relative to the rest of the body. Perhaps the best example of “atypical” positions in the Barton Creek Cave sample is the child from Ledge 3 (BC 27) who was in a sprawled, prone position (see Figure 14). Finally, the placement of an adolescent from Ledge 8 suggests that the individual’s arms may have been bound behind the back based on the position of the radius and ulna relative to the rest of the body. The individual appears to have been lying on the right side in a flexed position (see Figure 20). Missing elements make it impossible to determine the exact location and orientation of all of the bones. As was previously mentioned, individuals that are bound at the wrist and/or feet are typically victims of sacrifice (Fowler 1984; Marcus 1992).

### Demographic Profile

Osteological analyses of the individuals interred in Barton Creek Cave indicated a demographic profile as summarized below (Table 5).

Table 5: Demographic Profile of the Barton Creek Cave Sample

<b>Age Category</b>	<b># Individuals</b>	<b>Sex</b>
Infant (0-3)	3	N/A
Child (3-12)	9	N/A
Adolescent (12-18)	2	N/A
Young Adult (18-34)	11	6 male, 2 female, 2 female?, 1 unknown
Middle Adult (35-54)	3	2 female, 1 unknown
Old Adult (55+)	0	N/A
Adult (age unknown, 18+)	3	2 unknown, 1 female
<b>Total:</b>	<b>31</b>	<b>6 male, 5 female, 2 female?, 3 unknown</b>

Assessment of the age and sex distribution for the Barton Creek Cave sample is compromised as a result of small sample sizes, and the fact that many of the bones and teeth were fragmented or absent entirely. However, the data suggest that males and

females, at least among adults, are more or less equally represented in the sample. Of the 17 adult, five are female and six are male.

The age distribution of the sample reveals a high proportion of young adults (18-34) and children under the age of 12, with a low percentage of adolescents and adults over the age of 35. The demographic profile of the interments will be discussed in more detail below.

### ***Comparisons of Barton Creek Cave Patterns to Other Cave Sites in the Region***

The purpose of this section is to compare the skeletal, contextual and mortuary data from Barton Creek Cave with other cave sites in the Maya lowlands in order to identify patterns with regard to mortuary use of caves by the Maya. It should be noted that mortuary remains from rock shelters in the Maya region are exempted here, as they seem to represent a different mortuary phenomenon than caves (Gibbs 2000; Dunham, personal communication 2000).

The mortuary contexts in Barton Creek Cave demonstrate some variation in treatment of the deceased. However, one characteristic that is shared is the overall lack of grave goods. This pattern has been observed at a number of sites in the lowland Maya region, including Petroglyph Cave (Reents-Budet and MacLeod 1986), Cueva de los Muertos (Rushin-Bell 1982), Aktun Tunichil Muknal (Gibbs 2000), and Aktun Yaxteel Ahau (Owen and Gibbs 1999). For example, at Cueva de los Muertos “exquisite items of jade, bone, and crystal, often encountered in temple burials, have not been found in the caves” (Rushin-Bell 1982:13). At Petroglyph Caves, Belize, as well as a number of other cave sites in the Maya area, Reents-Budet and MacLeod (1986) observed an overall lack of material items associated with human remains (1986:81). According to Thompson

(1975), this overall lack of grave goods supports the belief that these individuals may represent sacrificial victims (Thompson 1975 cited in Reents-Budet and MacLeod 1986:81).

In addition to a lack of grave goods associated with human remains in caves, the placement of the individuals relative to cave features has also revealed some interesting patterns. In Barton Creek Cave and other cave sites, human remains are typically found within depressions in the cave floor, stuffed in crevasses, or placed in rimstone pools (Brady 1989; Gibbs 2000; Marquez de Gonzalez et al. 1982; Owen and Gibbs; Rushin-Bell 1982; Thompson 1975). In rare instances are individuals actually “buried” or placed within a constructed area, such as the constructed tombs in Naj Tunich (Brady 1989) and structures within Eduardo Quiroz cave, Belize (Pendergast 1971). MacLeod and Puleston have linked the placement of skeletal material in cracks or in ancient evaporated pools with sacrificial rites based on their observations of cave interments (MacLeod and Puleston 1978:72).

The burial position of individuals in caves demonstrates significant variation both within and between lowland Maya cave sites. However, atypical burial positions appear to be more common at cave sites relative to surface sites. For instance, there are a number of reports that individuals in caves may have been bound at the time of death, such as BC11 in Barton Creek Cave. Two individuals from Petroglyph Cave were found in small “piles” leading Reents-Budet and MacLeod (1986) to suggest the individuals were originally situated in a “seated position.” At Aktun Tunichil Muknal, Gibbs (2000) reports that one individual appears to be “bound in a flexed position with the hands tied behind the back and in a kneeling position facing the wall” (Gibbs 2000:110). Another

individual in the same chamber in the cave was lying in a supine position with the right arm raised and the legs sprawled (one leg bent, the other slightly extended) (2000:113). One of the most dramatic examples of this “sprawled” position is that from Ch’en K’iin, a cave in Cayo, Belize. The skeleton’s position is described as “laying on its back with its legs drawn upward, knees spread, and feet drawn together. The left arm is extended along the side of the body. The right arm is thrown back such that the upper arm and hand are above the head” (Webster and Reeder 2000:102). The thickness of the calcium carbonate crystals deposited on the bones of these individuals suggests they were submersed in a still pool of water for an extended period of time; therefore, it seems unlikely that the sprawled position of such individuals could be the result of heavy water flow. Rather, the frequency of atypical burial positions in caves relative to surface sites suggest a disregard on the part of the living to position the deceased in a standard burial posture in at least some cases.

Demographic information derived from the human skeletal remains from lowland Maya caves indicates an unusually high proportion of infants and children (age 0-12) relative to older adult individuals (age 35+). In addition, a significant number of young adults (age 18-34) are found in caves. Table 6 and Figure 22 demonstrate the age distribution of individuals found in four caves in West-Central Belize. These caves are culturally similar with regard to artifact distribution, size, geographical location and temporal use (i.e., Classic period) by the ancient Maya. It should be noted that most of the infants in the sample are at least six months of age and do not represent perinatal infants (that is, infants who die at, or shortly after, childbirth).

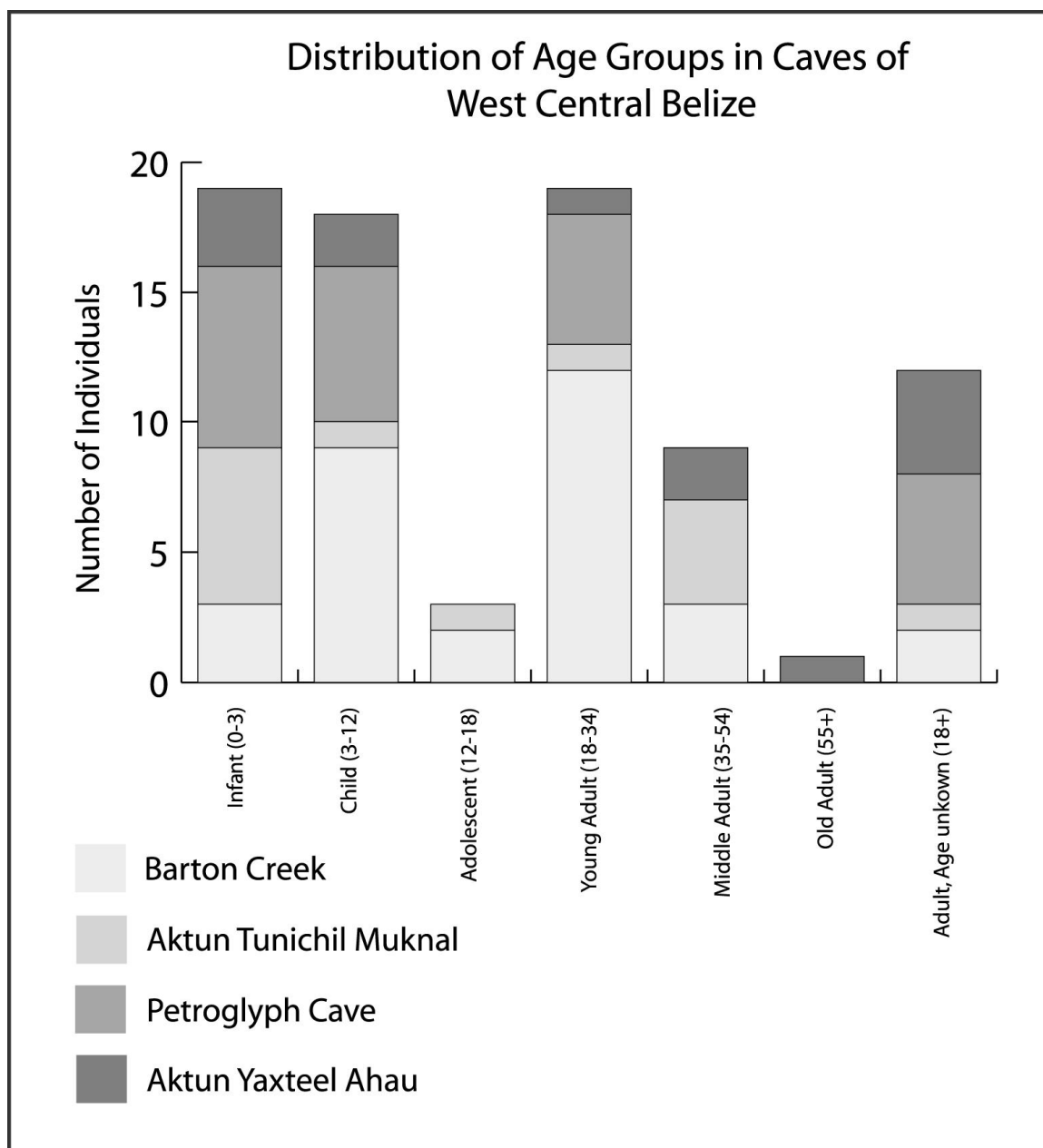


Figure 22: *Distribution of Age Groups in Caves of West Central Belize*

Table 6: Distribution of Age Groups from Caves in West-Central Belize

Age Category	Barton Creek Cave N=31	Tunichil Muknal Gibbs 2000 N=14	Petroglyph Reents-Budet and McLeod 1982 N=23	Yaxteel Ahau Owen and Gibbs 1999 N=13	TOTAL N=81
Infant (0-3)	9.7%	42.8%	30.4%	23.1%	<b>23.5%</b>
Child (3-12)	29%	7.1%	26.1%	15.4%	<b>22.2%</b>
Adolescent (12-18)	6.4%	7.1%	0	0	<b>3.7%</b>
Young Adult (18-34)	35.5%	7.1%	21.7%	7.6%	<b>22.2%</b>
Middle Adult (35-54)	9.7%	28.6%	0	15.4%	<b>11.1%</b>
Old Adult (55+)	0	0	0	7.6%	<b>1.2%</b>
Adult (age unknown, 18+)	9.6%	7.1%	21.7%	30.8%	<b>16.0%</b>

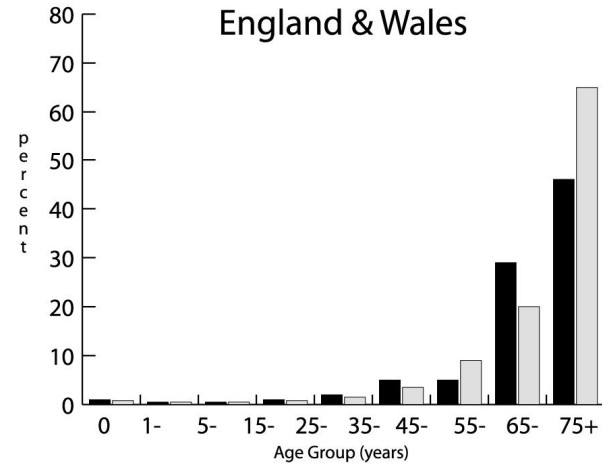
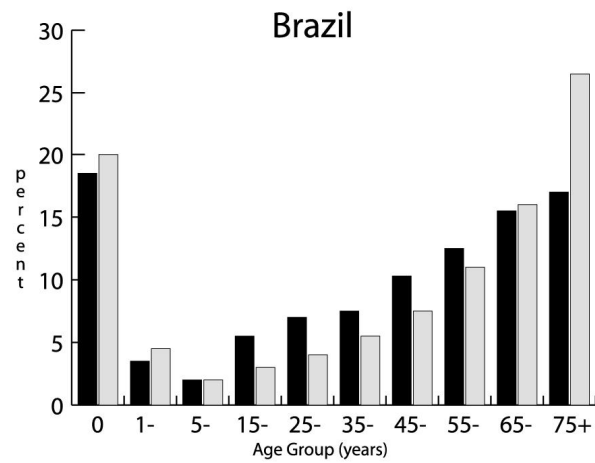
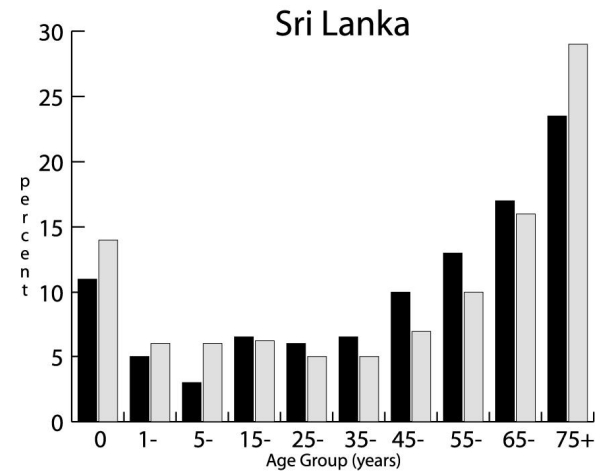
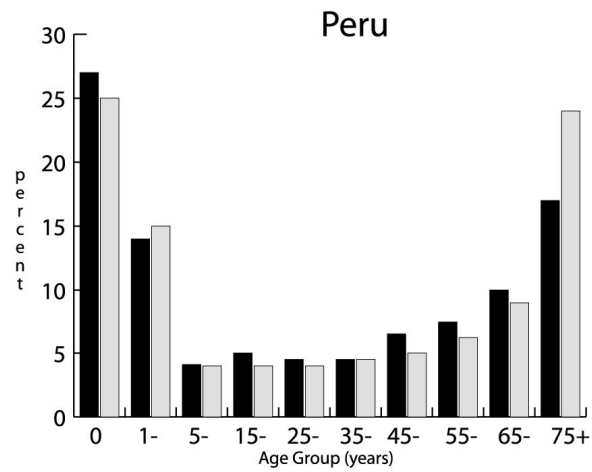
The high proportion of infant/child skeletons in caves has been pointed out elsewhere in the Maya cave literature. For example, MacLeod and Puleston suggest that “children about five years of age are common, though the bones of young adults are also occasionally found” (MacLeod and Puleston 1978:72). Similarly, McNatt reports that a large river cave in Belize yielded the remains of 26 burials, sixteen of which are infant/child. This led McNatt to suggest that they may represent “special offerings” (McNatt 1996:88).

In the cave samples reported here, age at death seems more likely to be a result of factors other than general population mortality. The curve for all the combined cave samples shows an almost inverse relationship to that which would be expected. Mortality curves for four different populations, Peru, Brazil, Sri Lanka and Britain, are shown in Figure 23. These contemporary populations represent different stages of economic development with Peru representing the least developed country and England and Wales representing the most developed. The question of “development” is not the issue here as the Maya in this study were part of a pre-industrial society. The important point to stress is that the graphs in Figure 23 indicate a generally low mortality rate of children over the

age of one, until the age of 35, after which mortality rate increases, with rather high mortality rates after age 55.

It is also evident that there may be inherent biases in archaeological samples that can lead to problems when comparing age distributions to contemporary populations. However, comparing other Maya skeletal samples with the cave skeletal sample would provide a better overall picture of age-at-death distributions for the Classic lowland Maya that were interred in caves. Unfortunately, there are various problems that complicate this task.

For one thing, cave interments are generally better preserved than surface-site interments which can lead to demographic biases in the latter. In addition, there are other problems such as temporal differences (i.e., Preclassic versus Classic-period burials), health and morbidity differences between populations, and different age categories used by various investigators. Robin states that the quality of age/sex analysis is quite variable between sites and different age/sex divisions are used at different sites (Robin 1989:133). As it is necessary to find some type of comparison for the age-at-death distribution for the cave sample in Table 6, Robin's age-at-death distribution for seven Late Preclassic sites will provide some insight. The age categories are broader and include adult (20+), subadult (12-20), and juvenile (0-12). Of the 207 individuals from the seven sites, 160 are classified as *adult*, four are determined to be *subadult*, and 43 are *juvenile* (Robin 1989:135). If the same age categories were used for the cave sample, of the 81 individuals, about half or 41 are *adults*, three are *subadults*, and 37 are *juveniles*. There is a dramatic difference between the adult-to-juvenile ratio for the Late Preclassic burials



*Figure 23: Age-at-death Distributions for four contemporary populations ( from Waldron 1994)  
Black bars represent males, grey bars represent females.*



compared to the adult-to-juvenile ratio of the cave interments that transcends chronological or population differences. The ratio of adults-to-juveniles at the cave site therefore suggests that the age-at-death distribution (Table 6) is likely attributable to circumstances other than natural causes.

One final consideration is the overall health status of the sample. Health status is indicated by their general nutrition, pathological load and coping ability to combat stress around the time of the Maya collapse (Late to Terminal Classic). Goodman et al. (1984) state that “age-at-death stands as perhaps the most important single indicator of stress. If other stress indicators are associated with decreased ages at death, then this supports their validity as indicators of stress” (Goodman et al. 1984:17).

Other ways of measuring stress are through the presence/absence of enamel hypoplasias and porotic hyperostosis. Porotic hyperostosis can result from a number of diseases such as malaria and hemoglobin derived anemias (1984:31). In the New World, however, cases of porotic hyperostosis are more likely to be a result of nutritional stress and parasitism rather than hemaglobinopathies (Goodman et al. 1984:31; Wright and Chew 1998:932).

Pathological information was not available for all of the individuals shown in Table 6. At Aktun Tunichil Muknal much of the bone was covered with calcite; however, at least one case of cribra orbitalia was observed (Gibbs 2000:115; Roberts 1990:126). In the Barton Creek Cave sample at least 7 of the 31 individuals displayed porotic hyperostosis (both remodeled and unremodeled lesions) ranging in density from sparse to severe. A minimum of two individuals from the sample exhibited enamel hypoplasia.

Porotic hyperostosis was a common condition among the Classic lowland Maya, and there are those who believe that it played an important role in the collapse of Maya civilization (e.g., Hooton 1940; Saul 1977:14). However, recent studies document no tendency toward a decline in the health of surviving children over the course of the Classic period, nor is there evidence for high levels of disease among the Maya contributing to the collapse (Wright 1997:271; Wright and Chew 1999; Wright and White 1996). Pathological manifestations in the Barton Creek Cave sample suggest that the individuals were exposed to varying degrees of environmental stress as evidenced by porotic hyperostosis. Health status did not appear to contribute to the age-at-death distribution for Barton Creek Cave and the others in Table 6. Pathological manifestations in the sample do not adequately explain the high percentage of infants, children and young adults relative to adolescents and middle-to-old age adults. Therefore factors independent of morbidity and mortality influenced the age distribution of cave interments in west-central Belize.

***Results: Sacrifice or Ancestor/Lineage Worship?***

Two hypotheses were formulated at the outset of this study to explain the nature of the individuals interred within Barton Creek Cave. The first hypothesis states that these individuals are revered ancestors or members of a lineage. The second hypothesis states that the individuals afforded interment are sacrificial victims. A consideration of the mortuary, contextual, and osteological data rejects the hypothesis of ancestor veneration. Instead, the data lend support to the hypothesis of sacrifice for the individuals interred in Barton Creek Cave, and possibly a number of other caves in the Maya lowlands.

Multiple lines of evidence support the hypothesis of sacrifice to explain the interments in Barton Creek Cave. These include lack of grave goods with interments, atypical burial positions observed, burial context, and age-at-death distribution.

In most mortuary contexts, grave goods serve to equip the deceased for the afterlife. The virtual lack of grave goods among the Barton Creek Cave interments suggests that they were not equipped by the individuals who interred them. Other factors may account for the lack of grave goods, such as looting activities and the fact that perishable items, such as plants and textiles, are rarely preserved. However, the overall lack of grave goods has been observed at so many cave sites that it can not be explained by these factors alone (MacLeod and Puleston 1978; Reents-Budet and MacLeod 1986; Thompson 1975). Moreover, caches of artifacts have been observed in areas of caves containing interments, such as in Barton Creek Cave; however, these caches are not associated with the skeletal remains (MacLeod and Puleston 1978:72). Finally, if the skeletal remains in Barton Creek Cave were the remains of ancestors or lineage burials, then one would expect to find material goods associated with rituals of reverence (e.g., Prufer and Dunham 1997) as well as grave goods to accompany the deceased in the afterlife, but this is not a pattern in the Barton Creek Cave sample. Rather, there is an overall lack of emphasis on the individual.

Burial positions of some of the individuals in Barton Creek Cave and other nearby caves do not support the hypothesis that these individuals were the remains of revered ancestors. Although the burial positions of many of the individuals in Barton Creek Cave could not be determined due to taphonomic processes and recent human disturbance, the frequency of atypical burial positions at other nearby caves substantiates this claim. The

dramatic “sprawled” postures, prone positions, and individuals who appeared to be bound at the time of death supports the idea that these individuals were sacrificial victims. The atypical postures that have been observed among cave interments are reminiscent of the depictions of captives in Maya iconography. Marcus comments that captives were often depicted with arms tied behind their back with rope rather than the formal postures of various elites. These captives were portrayed “in unnatural and awkward, contorted body positioning” in an effort to humiliate them (Marcus cited in Chase and Chase 1992:229). Whether or not the contorted burial positions observed among the cave interments served this purpose, or rather, were the positions which resulted from the manner of death, is unknown.

A consideration of the overall burial context of the Barton Creek Cave interments also strengthens the sacrifice hypothesis. First, many of the Barton Creek interments are in areas that are wet and muddy, and in some cases, individuals are placed in the middle of pathways where foot-traffic could easily destroy the bones. The burial context is therefore an unlikely place for an ancestor. This is supported by Brady who states: “the wet, muddy conditions are hardly what one would choose for a burial... These are conditions, however, that one might expect to be chosen for rituals directed to the gods who control rain and water” (Brady 1989:362).

Second, there are a number of commingled, multiple interments in Barton Creek Cave and other caves in the area. As previously stated, Welsh (1988b) believes that the remains of commingled individuals within a single burial context suggest that death may have taken place at a single point in time for the interred individuals, and that the commingled remains of adults and children may represent the remains of parents with

their sacrificed slave or orphaned children. If this were true for the Barton Creek Cave sample, it might indicate the adults represent significant lineage members and the children/infants were sacrificed to them. However, other factors such as paucity of grave goods and lack of emphasis on the individual suggest otherwise.

The burial context of the cave itself warrants mention, particularly because the practice of interring an individual in a cave involves a significant amount of labor. In Barton Creek Cave, all of the individuals were located within the dark zone of the cave (which is approximately 90m into the cave), and are situated on ledges above the river, which require difficult climbs and traverses in order to access them. The processualist energy expenditure theory, which links energy expenditure in mortuary practices to rank of the deceased, would suggest that the Barton Creek Cave individuals were of high rank due to the amount of energy expended in their interment within the dark zone of the cave (Chapman and Randsborg 1981:7; Tainter 1978). At a minimum, a great deal of energy would be expended on transporting the deceased through the cave, transporting paraphernalia associated with the mortuary ritual, and maintaining torches throughout the journey. In the case of Barton Creek Cave, I use Tainter's (1978) energy expenditure theory for the *significance* of the ritual, rather than the rank of the individual, which again, takes the focus off of the deceased. Moreover, McNatt suggests it would be much more logical and dignified to escort a live sacrifice to the final destination than "to struggle with hauling the body of a deceased one" (McNatt 1996:89). He also believes that the context of the cave, "specifically, the darkness, isolation, and acoustics of the cave environment, would provide an ideal location for a solemn ritual, particularly one regarding sacrifice" (1996:89).

The context of the cave as a means to house the remains of lineage members or ancestors seems to contradict the type of relationship that the Maya had with their ancestors. According to McAnany (1995), the Maya did not physically distance themselves from their ancestors, as we do today by placing our dead in cemeteries. Rather, the ancestors were a part of the everyday lives of the Maya: “the Maya celebrated the continued and pervasive influence of the ancestors in the lives of both rulers and farmers - the life that arises from death” (McAnany 1995). Placing ancestors deep into the dark depths of a cave where their physical remains can only be revered by few contradicts this relationship. Therefore, the possibility that the Barton Creek Cave interments represent the physical remains of revered ancestors seems unlikely.

One of the main arguments against the hypothesis that the individuals interred in Barton Creek Cave are the remains of important lineage members or ancestors is the age-at-death distribution of the sample. After a consideration of mortality and morbidity rates during the Classic period in the Maya lowlands, the high frequency of infants, children, and young adults in caves supports a theory of sacrifice. As previously mentioned, the role of the ancestor is usually reserved for leaders and prominent lineage members, which therefore makes infants and children unlikely ancestors (McAnany 1995:60). Similar demographic profiles have been observed at other caves in the Maya lowlands. Further, MacLeod and Puleston, reviewing several Maya caves, note that children around the age of five are common, “though bones of young adults are occasionally found” (MacLeod and Puleston 1978:72).

The association between child sacrifice and caves has been documented throughout Mesoamerica. For example, in highland Guatemala, Fuentes y Guzman

reported that children marched in a solemn procession to a spring inside a cave where it is said they were sacrificed to the *madre del agua* (Fuentes y Guzman 1932 cited in Thompson 1959:123). In Yucatan, Bishop de Landa recorded the practice of child sacrifice to the rain god, Chac, who was believed to reside in caves (Tozzer 1941:44, 119-120). Similar rites have been reported for Central Mexico where children were sacrificed to Tlaloc, the rain god, and then their bodies were deposited in a cave (Motolinia 1941 cited in Brady 1989:360). Based on the similarity to ethnohistoric evidence, it is possible that the children interred in Barton Creek Cave were sacrificed to a rain deity.

Earlier, I described three themes that explain the origins and perpetuation of human sacrifice. These three themes include reciprocal obligations to the gods, dedicatory functions, and sociopolitical factors. In the case of Barton Creek Cave, sacrifice may represent reciprocal obligations to the rain god, or possibly, the ancestors. Based on the ceramic chronologies for Barton Creek Cave, it is evident that the cave was most actively used in the Late/Terminal Classic. It was also during this time that many Maya city states, particularly in the southern lowlands, collapsed. Various hypotheses have been put forth to explain the collapse of the Classic Maya civilization. However, there is ample evidence to suggest that a series of droughts occurred between 585 and 1059 A.D., which led to the eventual devastation of Maya agriculture as precipitation levels were insufficient to support crops (Curtis et al. 1996:37; Leyden et al. 1998). In such desperate times, the Maya may have sacrificed children to the rain god in return for rain; a theory commonly used to explain their presence in caves. However, in Barton Creek Cave different areas of the cave suggest that different ritual activities took place

perhaps for the same purpose. For instance, one of the areas most actively used by the ancient Maya is Area A of Ledge 2, which is void of human remains. This area is rich with offerings ranging from ceramic vessels and censers to elaborately carved bone beads and jades. One of the more unusual features is a cache of carbonized corn cobs which may represent an offering to the rain gods as a means to maintain reciprocity between the people and their gods and give thanks for good harvest. This, therefore, removes the emphasis from the individual as a sacrifice, and places it on sacrifice of a series of treasured objects that are surrendered to the gods in desperate times.

If this reciprocity hypothesis can explain the presence of children in caves, then how do we explain the high frequency of young adults in caves? In Barton Creek Cave, many of the young adults were interred with children and/or infants. Thus, it is possible that the young adults were deliberately interred in the cave by the community and that children were sacrificed to them as retainers for assistance in the afterworld. Then one may ask why these members of the community were interred in the cave while other members of the community were interred in the floors of their houses and temples? The mortuary and archaeological data suggest that these individuals were not treated at death as an important member of the community. It is possible that these young adults were not members of the community but were slaves or captives from elsewhere who were sacrificed and interred in the cave.

Ethnographic and ethnohistoric sources stress the Maya's concern with the passage of the soul, particularly as evidenced by mourning rites and rituals. I suggest that this concern with the passage of the soul is not the type of mortuary ritual that took place in many Maya lowland caves. Investigations at Barton Creek Cave suggest that the



mortuary practices involved the sacrifice of individuals in return for rain and hence crop fertility during times of stress. However, ethnohistorical reports and ethnographic studies have stressed the link between ancestor veneration and caves. The first hypothesis in this study states that the interments in Barton Creek Cave represent the remains of ancestors based on the notion that the ancestors resided in a principal cave. I propose that one must consider the reverence of the ancestors' spirit versus their physical remains. For instance, studies have demonstrated a strong association between caves and rain and crop fertility. Present day Maya frequent the caves to pray to the ancestors because they control the natural forces (Christenson 2000; Brady 1995). In other words, it is the ancestors' spirits rather than their physical remains that are being venerated in these caves. Therefore, one must consider whether the Maya were sacrificing humans and cherished objects to the rain gods or the ancestors in times of stress. The role of the ancestor warrants further understanding with regard to the rituals and practices that were undertaken in caves.

## **CHAPTER 8**

### **Summary and Conclusion**

The primary goal of this study was to better understand the ritual use of caves by the ancient Maya and to establish who the 31 individuals were within Barton Creek Cave. Specifically, my main intention was to assess whether these individuals were sacrificial victims or the remains of revered ancestors. An analysis of the skeletal, contextual, and mortuary data combined with a review of ethnohistoric, ethnographic, and archaeological sources, suggests that the majority of the interments in Barton Creek Cave were victims of sacrifice. Results of this study also suggest that the mortuary rituals that took place in caves such as Barton Creek Cave are a direct reflection of the struggles and concerns of the Maya during the Late to Terminal Classic period. It is argued that the individuals interred in Barton Creek Cave were sacrificed to rain deities or the ancestors who control the natural forces, during the drought that devastated Maya agriculture.

Archaeologists have long understood that caves were not the usual place for the interment of the deceased in Maya society. This realization has prompted a series of investigations that are attempting to understand who these individuals were and why these individuals were “laid to rest” in such a dark and watery realm (Gibbs 1997). A number of archaeologists such as Awe, Brady, Dunham, Gibbs, MacLeod, Prufer, Reents-Budet, Scott, and others, suggest that many of the individuals interred in caves were victims of sacrifice. Systematic studies such as these will enable us to take a step

further in investigating broader questions relating to such things as Maya cosmology, collapse theories, and agricultural rituals. We are now realizing, for example, that Maya cave ritual probably was not so much about death as was once believed, but had more to do with life, rain, and fertility.

This study left several questions unanswered and suggests several avenues for future research. These include investigating patterns and/or variability in cave mortuary ritual, such as highland versus lowland caves, river caves versus dry caves, and caves versus rock shelters. Investigating variability will allow us to better understand interregional differences and also how landscape and cave ritual may be related in Maya culture. Also, if the individuals interred in caves are indeed sacrificial victims, the next questions to ask should be with regard to cause of death, the deceased's place of origin, and biological relationships between the deceased in the cave as well as with those from nearby surface-sites.

One question that warrants further investigation is the relationship between caves and nearby, contemporaneous settlements. At this time, little is known with regard to the relationship between the mounds and the cave at the Barton Creek Cave site, or other settlements in the area. These data would provide evidence with regard to the cave as a potential pilgrimage site and potential ritual use rights between communities. The sourcing of materials used in cave ritual, specifically ceramic and lithic materials would also address this question.

Cave archaeologists today continue to advance the discipline through publications, symposia, theses and dissertations, increased communication between investigators, and the establishment of field schools that provide training in cave

archaeological techniques and research. This is particularly important because of the alarming rate at which caves are being destroyed. With the continuation of large-scale cave projects, and the interdisciplinary and systematic nature of contemporary cave archaeology, we will further our understanding of the significance of caves to the ancient Maya, and add new insight to our understanding of the ancient Maya past.

In addition to exploring the question of sacrifice and mortuary ritual in caves in the Maya lowlands, this thesis also highlights the use of mortuary theory in archaeological research. Mortuary practices are incredibly complex, and pose particular difficulties for the archaeologist who is trying to understand this type of behavior through the material remains. One must also consider whether mortuary theory is equipped to deal with the subject of sacrifice. Therefore, it is only through refinement of our methods and theories that we may be able to gain a better understanding of both the life-ways and death-ways of past human societies.

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