

THORNHILL LAKE: HUNTER-GATHERERS, MONUMENTS, AND MEMORY

By

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To Heather

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Abstract of Dissertation Presented to the Graduate School
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THORNHILL LAKE: HUNTER-GATHERERS, MONUMENTS, AND MEMORY

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Hunting and gathering societies are generally not associated with the construction of monumental architecture, particularly in a world consisting only of other hunting and gathering groups. Yet within the St. Johns River Valley of Florida, and the southeastern United States in general, hunter-gatherers were constructing monuments beginning in the Middle Archaic period, at about 6000 cal. B.P. Previous work on these monuments focused largely on demonstrating their antiquity early-on. Currently the debate centers on the level of socio-cultural complexity that they signal or its absence despite their existence. To date none of the Archaic monuments of the greater southeastern United States have been demonstrated to have been constructed for burial of the dead and only those from the St. Johns River Valley and northeast Atlantic coast of Florida provide clear evidence of their mortuary function. Although their existence has been demonstrated, there has been very little work at mortuary monument sites until the research carried out for this study.

The goal of this research is ultimately to understand the conditions under which mortuary monuments were erected in the St. Johns River Valley and northeast coastal Florida. Toward this end, baseline data from an Archaic period mortuary monument

site, the Thornhill Lake Complex, was collected through a program of topographic mapping and excavation within major site features as well as an analysis of collections data and primary research documents from the late nineteenth century. The result of this work is a picture of mortuary monument construction during the late Mount Taylor, Thornhill Lake Phase (5600-4500 cal. B.P.) that arose out of previous ritual practice, that of constructing monuments of shell. The later mortuary monuments are constructions primarily of earth. This transformation occurred within a context of an increasingly populated and socially diverse landscape. Memory creation and maintenance through the construction of these monuments and the attending rituals (and their re-enactment) was the process through which identity at varying scales was asserted and negotiated.

CHAPTER 1 INTRODUCTION AND ORGANIZATION

The image of the small hunting and gathering band trekking through the Kalahari Desert with all their possessions on their backs is a popular image of these groups and one at the forefront of public consciousness. Such stereotypical images of hunter-gatherers are built upon the ethnography and ethnohistory of “modern” foragers and have been presented by some as the earliest state of humankind (Barnard 1999; Lee and Devore 1968). Others have challenged this depiction (Cashdan 1980; Rowley-Conwy 2001; Wilmsen 1989; Wobst 1978). Some have noted that there was indeed likely greater variation in hunting and gathering groups in the past, especially in a world made up only of hunter-gatherers (Price and Brown 1985; Sassaman 2004). Here, ethnography fails because those hunter-gatherer groups used to characterize past hunter-gatherers are the products of historical contact with herders, farmers, colonial authorities, and nation-states (Bodley 1999; Sassaman 2004; Sassaman and Heckenberger 2004; Trigger 1999). How much variation once existed among hunter-gatherer groups in the past can not be known through ethnography but, given the existence of complex hunter-gatherers such as those of the northwest coast of North America, the Chumash, the Ainu of Japan, and the Calusa of southwest Florida, it likely was great. Clearly variation did exist and this is proven by these groups where inequality, hierarchy, and even classes exist.

Monuments, historically tied to the emergence of agriculture and the rise of social complexity, have been considered something incompatible with hunter-gatherers by both archaeologists and anthropologists for as long as they have considered these groups to be of interest. However, for only about 15 years has there been any

recognition that hunter-gatherers were constructing monumental architecture in the southeastern United States (U.S.) (Russo 1994a). Elsewhere monumental architecture comes on the heels of cultivation or, at the very least, were constructed by hunting and gathering groups who lived alongside cultivators, possessed some of the material trappings of cultivators, but still practiced a hunting and gathering way of life (Bradley 1998).

Monuments constructed by hunting and gathering societies have been recognized in the southeastern U.S dating back to Gagliano's (1963) work in the lower Amite River area of Louisiana. Monuments constructed by hunter-gatherers in the southeastern U.S. largely are mounds, generally constructed of earth and shell, sometimes both, and also occasionally include ridges also of these same materials. For the purposes of this study the monuments built by hunter-gatherers of the southeastern U.S. are, unless otherwise stated, referring to mounds. Gagliano's work never gained wide and popular acceptance within the local archaeological community and certainly not among a national much less an international audience. Prevailing cultural-historical and evolutionary paradigms within archaeology in the region combined to effectively silence an alternative view of the sociocultural developments in the region. Additional sites lacking evidence for later ceramic-making cultures but possessing mounds were investigated in the years following Gagliano's work, some producing what were believed to be anomalously early radiocarbon dates, but these were often not reported because they seemed out of place or in error (Russo 1994a, 1996). As a result of additional work in the early 1990s a compelling case for the existence of Archaic period mounds was made for the southeast U.S. (Russo 1991, 1994a, 1994b, 1996).

Mounds constructed by Archaic hunter-gatherers are now accepted as fact. With this acceptance the debate regarding these monuments shifted from whether they exist and the veracity of the supporting data, to what the mounds are telling us about the people who made them (cf. Gibson and Carr 2004). Two camps emerged: those who do not see the mounds as indicating changes in the nature of the sociality of the groups who created them (Crothers 2004; Saunders 2004; White 2004), and those who see it as signaling a change among these same hunting and gathering societies to something other than a purely simple and egalitarian sociality (Clark 2004; Russo 2004; Sassaman and Heckenberger 2004).

Explanations for the origins of these monuments are typically of a functionalist (Hamilton 1997; White 2004) or gradualist bent (Crothers 2004). Still others view them as repayment to the spirit world by the groups who made them, as a sign of gratitude (Gibson 2004). Certainly it is possible that the motivations for hunter-gatherers in the southeastern U.S. to construct mounds varied from region to region and group to group, representing the differing outcomes of local historical experience. In view of this, attention to the local context and historical antecedents present in a given area where monument construction occurred are of importance in understanding these monuments. In addition to those offered above, there are other possibilities for the motivation of Archaic hunter-gatherers to construct monuments, especially mortuary mounds, and these are considered below.

Research Questions and Contributions

Given that hunting and gathering groups known through the ethnographic record do not construct monumental architecture, the fact that there are prehistoric hunter-gatherer groups that did presents something of a conceptual hurdle for archaeologists

and anthropologists to overcome – it is a practice that seems out of place among these groups. The fact that there are many such earthen and shell monuments at numerous locations throughout the southeastern U.S. makes it plain that this practice was not an aberration. Naturally the question arises: why did hunter-gatherers engage in the building of monuments of earth and shell? Coming to some understanding of the conditions and context under which hunter-gatherers began to construct earthen mortuary monuments and the processes that lay behind it is the primary goal of this study.

Here, construction of mortuary monuments is viewed as a transformation preexisting practice (Bradley 1998:17) within a ritual context where hunter-gatherers making monuments of shell took the act of piling shell, in both ritual and daily practice, and made it into something not completely new but, at the same time, something different than what came before (*sensu* Joyce 2004). This change was a variation on a theme already familiar to Archaic denizens of the St. Johns River Valley (SJR). Rather than mounding shell they began to mound sand and in those mounds of sand they placed the deceased members of society. Memory played a key role in this process and was carried out through commemorative practices, both inscribed and incorporated, related to ritual (Connerton 1989:72-73). Of importance is the creation of links, either real or fictive, with the past. Mound-building occupied a central role in this process as it was through building these monuments, these mounds for the dead ancestors, that places were made, appropriated, and transformed (Bradley 1998; Tilley 1994; Van Dyke and Alcock 2003). Memory and a concern for the past is indicated in the selection of locations for mound construction and the placement of the dead in them

(Knapp and Ashmore 1999), all of which serves to create a place of and for the ancestors which forges strong links between the past and place, giving legitimacy and creating identity through the inscriptive commemorative practice of mound-building. Incorporative and performative ritual practices, rarely leaving archaeologically visible material traces, also were important in mound-building as it is in the context of mortuary ritual that these monuments and memory were constructed (Connerton 1989:72-73).

In addition to understanding monument construction in the context of commemorative practices among the hunter-gathers of the SJRV, a further contribution of this study is that it presents the results of a long-term research program carried out at an Archaic period mortuary mound complex. Although not the first mortuary mound site investigated in Florida (cf. Piatek 1994), it is the oldest and represents the most concentrated, long-term research program to date at such a site, producing important baseline data related to Archaic period sand mortuary mound construction and use. Although a number of Archaic period mounds have been excavated in the southeastern U.S., none have been demonstrated to be purposefully constructed for burying the dead. One possible exception may be found at the Elizabeth site in Illinois in the Mid-continental U.S. At Elizabeth there is evidence of the formation of an accretionary “mound” through the repeated interment of bodies in low bluff top knolls and the deposition of encasing sediments (Buikstra and Charles 1999:207). Another exception may be seen in the shell mound burials in the San Francisco Bay area of California where numerous burials were found in contexts of mounded shell (Luby 2004). A similar situation has been observed in the southeastern U.S. (Claassen 1992) and within the SJRV as well (Beasley 2008). The work presented in this study represents a

major contribution to the study of Archaic period foragers in the southeastern U.S. in so far as it is the first Archaic period mortuary mound complex with mounds constructed explicitly for interring the dead. Moreover, considering the absence of analogical touchstones in ethnography and ethnohistory, this research also contributes to a greater understanding of the variation that once existed among hunting and gathering groups, expanding the conception of what hunter-gatherers were capable of doing above and beyond subsistence and mobility.

Dissertation Case Study and Data

The case study for this research comes from the SJRV, Florida in the southeastern U.S. and focuses on the hunter-gatherers of the Mount Taylor Culture (7300-4500 cal. B.P.) who inhabited the SJRV and adjacent Atlantic coast of northeast and east-central Florida (Figure 1-1). Mount Taylor culture is characterized by a subsistence base emphasizing the use of aquatic resources, notably fish and shellfish, whose use is evidenced conspicuously by the numerous shell mounds they left behind. In addition to the shell mounds created by Mount Taylor groups, they also constructed mortuary mounds of earth in the latter half of the Mount Taylor period. Material culture has been described as impoverished (Goggin 1952). However, this depiction all too obviously fails to account for an organic component of technology not often recovered by archaeologists except in a few rare instances (Wheeler and McGee 1994a; Wheeler et al. 2003). Most often material culture associated with Mount Taylor consists of a number of stone, shell, and bone tools. In addition to these items, the material culture of Mount Taylor groups also included the construction of earthen mortuary mounds. Settlement patterns for Mount Taylor are poorly understood at present but appear to have favored the rivers and Atlantic coast of northeast and east-central Florida. Ritual

and ceremony likewise are poorly understood and as a result of this research some light has been shed on this topic, particularly regarding mortuary mound construction and attendant ritual. A more in-depth discussion of Mount Taylor culture is presented in Chapter 4.

Data for this study come both from the works of previous researchers and from original field work and analyses that are original to this research. Excavations at the Thornhill Lake Complex (8VO58, 8VO59, and 8VO60) in southwestern Volusia County, Florida (see Figure 1-1) on the St. Johns River form the centerpiece of this study and provided the primary archaeological data. This site, originally investigated in the late nineteenth-century by Clarence B. Moore, represents one of, if not the best, example of an Archaic period mortuary mound complex. Excavation at this site produced artifacts that are clearly Archaic in age and is further supported by the general lack of pottery from both of the mounds (Moore 1894c, 1894d). Apart from Moore's work, the site has remained surprisingly intact, largely escaping the ravages of looting and vandalism for more than a century that have taken a toll on the archaeological record of the SJRV. Further enhancing the site's value as a case study is the fact that it was not utilized significantly by later groups of the Orange and St. Johns periods (Endonino 2007a, 2008b). Because it has proven to be an excellent example of Mount Taylor mortuary mound construction it was chosen for study.

Primary archaeological data was collected during excavations at the Thornhill Lake Complex as part of the Thornhill Lake Archaeological Research Project (TLARP) through the Laboratory of Southeastern Archaeology (LSA) at the University of Florida. Work was carried out over a period of four years from 2005-2008, largely on weekends

with the assistance of volunteers, and paid field assistants during the winter of 2006 and spring of 2007. Data used in answering the research questions outlined above come largely from the analysis of stratigraphic and radiometric data obtained through this work as well as a consideration of the materials recovered during excavation.

Collections research was carried out at the Smithsonian Institute's curatorial facility in Suitland, Maryland where collections from the Thornhill Lake site excavated by Moore are housed. This assemblage of artifacts is one of only two excavated from Archaic period mortuary mounds, the other being Mound 6 at the Tomoka Complex (Douglass 1882), but it is currently the only one available for study. Information provided by these items has allowed for insights in to the possible existence of inequality among Mount Taylor hunter-gatherers, determined the general region of origin for the exotic stone artifacts in the collection, and furnished clues and information that has been used to reconstruct aspects of mortuary ritual and memory associated with the mounds at the Thornhill Lake Complex.

Information gleaned from the work of earlier investigators has proven once again that rarely is the final word written on a subject and that old data can provide new insights when viewed from another perspective. Here that perspective is one that specifically addresses Archaic period mounds from a social vantage point. Among the sources of this data are the original unpublished field notes of Clarence B. Moore and the published works of several early archaeologists as well as professionals from the middle twentieth century. Among these are the works of Moore (1892a, 1892b, 1892c, 1893; 1894a, 1894b, 1894c, 1894d) and Jeffries Wyman (1875) as well as Ripley Bullen (Jahn and Bullen 1978) and William Sears (1960).

Organization of the Dissertation

Chapter 2 outlines the theoretical approach taken during this research and the interpretation of data collected and analyzed. Two general areas are emphasized, monuments and memory. What makes a monument and what it is that they do are considered. Memory and commemoration is considered following the discussion of monuments. Memory is bound up in the construction of monuments and the theoretical approaches taken draw significantly on the works of Halbwachs (1992) and Connerton (1989) among others (Jones 2007; Mills and Walker 2008; Van Dyke and Alcock 2003). Of particular importance are incorporated and inscribed practices as they relate to memory (Connerton 1989). Throughout this chapter the material manifestations of memory and commemorative practices are emphasized.

In Chapter 3, the literature related to hunter-gatherers and monuments is reviewed. An emphasis is placed on the Archaic mounds in the southeastern U.S. as this region possesses the best archaeological record related to hunter-gatherer mound-building phenomenon. It was during the Archaic period in the southeastern U.S. that hunter-gatherers living in a world consisting only of other hunter-gatherer groups constructed monuments of earth and shell. This review and summary serves to situate the research carried out and presented in this study within the broader context of Archaic mound-building societies in the southeastern U.S. as well as within hunter-gatherer societies generally.

A review of Mount Taylor archaeology is provided in Chapter 4 in order to contextualize subsequent discussions of the archaeology of the Thornhill Lake Complex (and other Mount Taylor sites in the SJRV) and the emergence of mortuary mound construction in particular. Topics considered include the Mount Taylor chronology,

origins, settlement and subsistence, material culture, and ceremonial behavior (i.e. mound-building). This chapter concludes with the introduction of a new temporal subdivision of the Mount Taylor period, Thornhill Lake Phase. This latter represents a refinement in the chronology of the SJRV and northeast Florida that is of particular relevance to this study insofar as the two most salient features of this phase, mortuary mound construction and increased inter- and intraregional interaction, are most forcefully demonstrated through the research at the Thornhill Lake Complex.

Chapter 5 summarizes all previous research at Thornhill Lake and includes an examination of the original field notes and publications of Clarence B. Moore, an analysis of collections from this site at the Smithsonian, and a review of Thornhill Lake in the archaeological literature, all with the purpose of providing a solid foundation for the reader regarding all of the previous work at this site so that a clearer picture and better understanding of this site is possible. Also, the data contained within Moore's published works provide crucial data on stratigraphy and burials. Taken as a whole, this chapter brings together all of the previous research at Thornhill Lake and serves as a point of departure for the research carried out during the TLARP presented in the remainder of this study.

Field research and original data are presented in Chapter 6. This chapter presents the results of field work and include topographic mapping, auger tests, shovel test units (STU), and test excavations at all of the primary topographic and architectural features at the site. Chapter 6 is the backbone of this study as it is the raw data from which all further discussion of higher level issues such as the rise of mortuary monumentality and ritual in the SJRV, monumentality and diversity among prehistoric

foragers, and the role of memory in the practice of mound-building among hunter-gatherers are based. The majority of the data concern stratigraphy and chronology. The internal structure of the site's principal architectural features reveals evidence for the establishment of the site and its transformation through the building of monuments and earthworks of sand and shell. Recovered artifacts indicate some of the activities carried out at the site while at the same time demonstrating contact between the inhabitants of Thornhill Lake and their neighbors on the Atlantic and/or Gulf coasts as well as the interior uplands furnishing the stone raw materials for tool production.

Materials recovered from Mount Taylor contexts at the Thornhill Lake Complex during the TLARP is analyzed and the results presented in Chapter 7. The goals of these analyses are geared toward understanding activities that were occurring at this site and the identification of non-local raw material types (stone, marine shell, and shark teeth) among the materials recovered affords an opportunity to examine the interregional and intraregional connections. Such connections may have occurred through exchange only, the movement of personnel between areas/regions, or some combination of the two. Chapter 7 provides important material data on inter- and intraregional interaction and exchange at Thornhill Lake, an important aspect of the conditions under which sand mortuary mound construction occurred.

Chapter 8 considers the issues of monuments and memory at Thornhill Lake and the SJRV and Atlantic coast of northeast Florida. In addition, the origins of monumental architecture, its transformation, disjuncture, decline, and eventual replacement by a new architectural form, that of the shell ring during the Late Archaic Orange period, are also

discussed and explored. This chapter is concluded with suggestions for future research for the Thornhill Lake specifically, and the SJRV and Atlantic coast more generally.

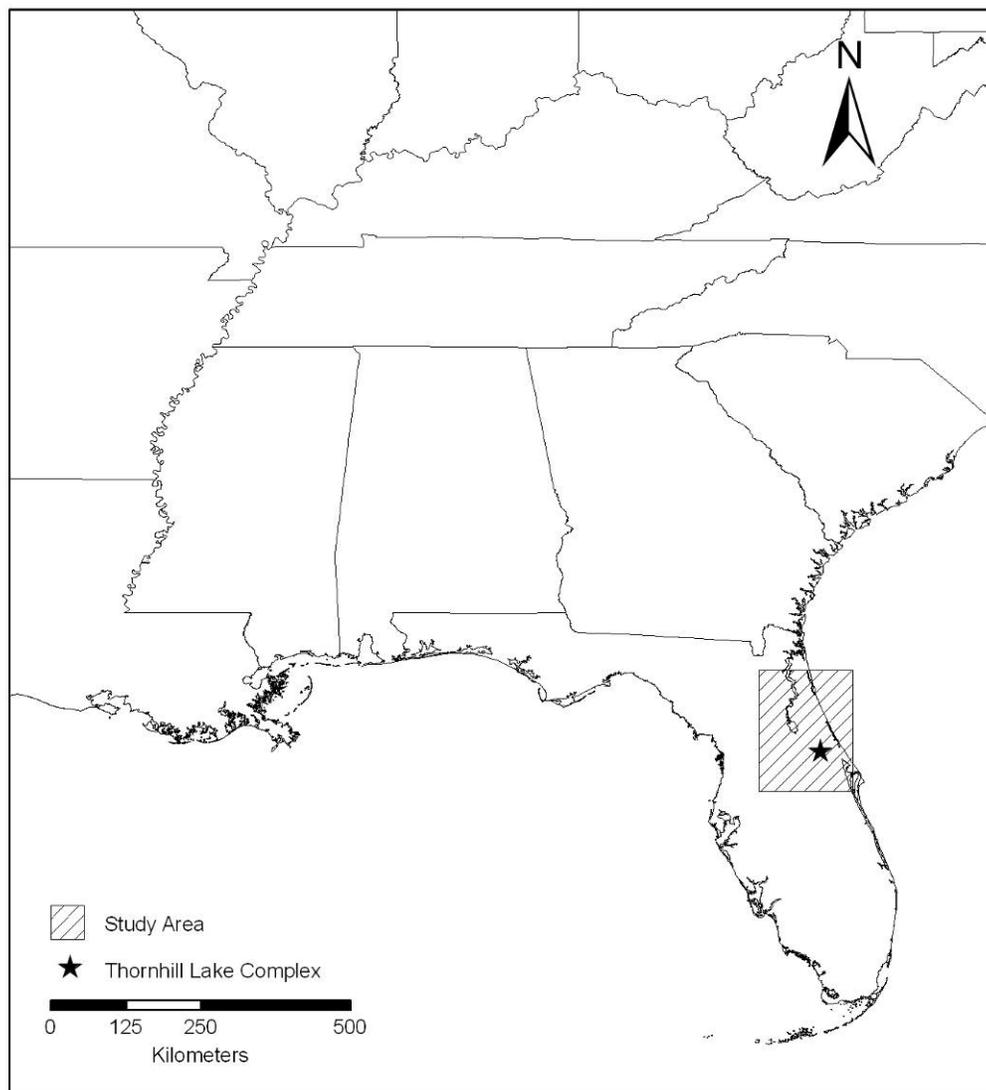


Figure 1-1. Location of the study area in east-central and northeast Florida.

CHAPTER 2 THEORETICAL CONSIDERATIONS: MONUMENTS AND MEMORY

Monuments and memory are intertwined. To build monuments is to create memory and impose an order on the world that shapes the perceptions of those in the present as well as the future. Monument construction and other such alterations to the natural world are thought to be well outside of the sociality of hunter-gatherers who do not see themselves as apart from nature (Ingold 1999), but who, rather, are a part of nature and inseparable from it. In this chapter issues related to monument construction and memory are presented and discussed. For this research monuments are considered to be items of material culture created and shaped by human beings who are in turn shaped and influenced by the very material objects they created (Jones 2007). As material objects, monuments play an important role in the creation, interpretation, and reinterpretation of social memory and identity (Pauketat and Alt 2003; Van Dyke 2003). The following chapter is divided into two sections. The first section deals with monuments and the second deals explicitly with memory. A summary of the main points of these discussions are presented in the conclusions at the end of this chapter and considers monuments, memory, and the performative and inscriptive practices that are enmeshed in their construction jointly.

Monuments

Monuments Defined

What are monuments? A monument can be defined in a few ways. The etymology of the word is French and is an expression from the Latin “monumentum” from “memorere”, to remind. A monument can be a structure erected to commemorate persons or events. It can also be an important site that is marked or preserved as a

public property. Monuments from an architectural perspective are commemorative structures intended to endure and evoke feelings that are in sympathy with its purpose (Elliott 1964), they are about memory (Bradley 1993:2; Rowlands 1993), commemoration and, fundamentally, remembering. Monuments do not communicate their intended meanings explicitly, however, and their intended meaning is predicated upon the assumption that the viewer already knows pertinent facts about it and its subject (Elliott 1964:52). Such prior knowledge permitting an appreciation and understanding of a monument, its purpose, and meaning is possible because people remember within the context of their own social milieu (Halbwachs 1992:49). “Outsiders” and others disconnected from the original purpose and meaning by time, space, or both will have to reinterpret the monument within the context of their own social milieu and the meaning inevitably will be different, even radically different, than the original. With new interpretations comes new meaning and new significance for the monument.

A number of characteristics are held in common by monuments, ones that are shared irrespective of whether or not they were built by a state, chiefdom, or hunter-gatherers. The first characteristic has already been touched upon in the very definition of monuments, they are about memory – monuments commemorate. The second characteristic of monuments is that they endure, they last for a very long time (Bradley 1993:5; Elliott 1964). Enduring is a significant characteristic of monuments. However, just how long a long time is has not been explicitly defined. Is it a lifetime, a generation, several generations, are they intended to be eternal? This issue remains open to

debate. In this study I take the position that a monument ought to out last several generations minimally and preferably should endure for millennia.

The longevity of a monument owes much to the media used to construct it. Organic media such as wood will not likely last beyond a few generations owing to the assault of natural forces upon it. Time and the elements ultimately lead to decay and fire can bring an untimely end to monuments of wood. More enduring media such as earth, stone, and shell will last considerably longer than wood although earth is more prone to erosion early-on in its life but deterioration can be offset through maintenance and once vegetation such as grasses have taken hold on the surface serves as protection against the deteriorating forces of erosion.

A third characteristic of monuments that is implied rather than explicated is that they are built on a large scale. We expect them to be large and impressive. But just how large a commemorative structure must be to be considered a monument has not been adequately addressed. A small stone cairn may endure and commemorate but its size is less than monumental. Carved stone stelae are not necessarily large structures but may, in fact, be on the small side and are still considered monuments because they commemorate and endure. Perhaps putting these examples into a broader context can help to clear up matters. A small stone cairn among hunter-gatherers in the Arctic or sub-Arctic may take on a monumental character in so far as there are no other comparable structures that can be considered monuments. In this case size as it relates to monumentality is relative to the given context of where it is found. Stelae within the larger context of a Mayan city are by comparison to the other existing structures, relatively small but nevertheless achieve the same end as these larger

structures as mentioned above, they commemorate and endure. Does size matter when considering whether or not something is a monument? No, not necessarily. In general, however, smaller commemorative structures might be best categorized as memorials rather than monuments depending on context and whether or not they possess the characteristic of endurance. Although they achieve much the same end, they are with regard to relative scale and endurance, small and short-lived.

Why Build Monuments?

What is it that motivates human groups to construct monuments? One reason has been touched upon in the very definition of monuments presented above:

commemoration. People build monuments to commemorate and this point is important to the research of this study. Although acknowledged tacitly, other researchers attribute the motivation for constructing monuments to other factors. Some of the explanations for monument construction are presented below. These include ecological and functionalist motivators. Another explanation for the construction of monuments is that of territorial marker.

Ecological and functionalist explanations for monument construction

Some have attempted to explain the construction of monuments from ecological and functional perspectives (Hamilton 1999; Trigger 1990). Hamilton (1999:344) attributes the emergence of mound construction during the Archaic in the southeastern U.S. as a result of two factors in combination: the “waste concept” whereby cultural elaborations like mound-building will occur in temporally variable environments as a bet-hedging strategy. For Hamilton (1999) the temporal fluctuation is provided by the El Niño-Southern Oscillation as it represents a significant source of inter-annual variability in the southeast. The bet-hedging model essentially states that such behaviors are

adaptive in unpredictable and fluctuating environments. Taken together, the construction of monuments is explained through a need on the part of hunting and gathering groups to offset the negative effects of a an unpredictable environment – mounds as wasteful behavior have positive benefits in that it took time and effort away from subsistence practices and shifted it toward “wasted” behavior in the form of mounds, resulting in smaller populations and increasing individual fitness (Hamilton 1999).

Along similar lines, Trigger (1990) argues that monumental architecture is one means whereby an elite ruling class or a single ruler demonstrates their power by expending some of the energy at their control for non-utilitarian purposes. This is an expression of their power. Because monuments are understood as expressions of power, according to Trigger (1990:125), their construction is the embodiment of large amounts of human energy and hence symbolize the ability of those for whom they were made to control such energy to an unusual degree. Much of Trigger’s discussion is related to the construction of monuments in more “complex” societies and civilizations, noting early-on the importance of monumental structures their development (Trigger 1990:120).

What then do we make of monuments in hunter-gatherer societies? There is really very little to go on. As Bradley (1993:1) notes “Monuments are not found universally and are rare among European hunter-gatherers.” He could not be more correct in his particular case. However, there is ample archaeological evidence for the construction of monuments among hunter-gatherers in the southeastern U.S., and other parts of the globe as well (Chapter 3).

Monuments as territorial markers

One popular interpretation is that of monuments (read mounds) as territorial markers (Charles and Buikstra 1983), particularly those containing burials because as formal cemeteries they enshrine the ancestors in a given locale and create continuity and history – they create place. As used by some archaeologists mortuary mounds operate as formal cemeteries used by corporate groups and are further considered to symbolize the greater territory of the groups using the mounds. Mounds are used as symbols or markers for the greater territory. This approach has been criticized by Dunham (1999:117). Dunham (1999:117) contends that the operation of mounds as symbolizing or marking is assumed rather than demonstrated, merely asserting the connection of monument and territory rather than explicating how this link was achieved. Dunham (1999:118) proposes that the symbolic construct of the trope be used instead in order to conceive and explain the relationship between monument and territory. As used by Dunham (1999:118), tropes are self contained expressions of relations between two or more elements that are usually considered to be distinct or even incommensurable. Aspects of two or more distinct elements are combined together to form a third superordinate or transcendent category or context through which the elements achieve perceptual and/or conceptual common ground (Dunham 1999:118). Dunham uses this approach to explain the Late Woodland burial mounds in interior Virginia, relating corporate ossuaries encapsulated by mounds constructed in fertile river floodplains used by these farming groups, essentially coming to the same conclusion as those using the traditional symbolic approach, but doing so in a way that explains rather than asserts the connection.

The Effects of Monuments

Monument construction is an act of creation, of altering the earth (Bradley 1993). As much as humans influence and modify the earth through the construction of monuments, so too are they influenced and affected by the very monuments they created, initiating a recursive relationship between people and place. The production of monumental space is a transformative process in which material, symbols, and signs are exchanged, symbolically grounding and giving perceptual order to a set of material practices within a conceptually established order (Lefebvre 1991:216-217). Constructing monumental forms of architecture change the nature and character of a place, forever altering the way it is perceived and how it is interpreted, an effect that is long lasting and never exactly the same from generation to generation as the original meaning is never immutable. Interpretation and reinterpretation is a fundamental property of monuments and although they may be made to last, their meanings remain elusive and require interpretation by the observer (Bradley 1993:2). Another result of monument construction is the creation of an entirely new sense of place, they are the outward embodiment of some of the most basic beliefs in society, and they tend to mould the experience of those who use them (Bradley 1993:5, 45). Monuments bring the past into the present and simultaneously convey the past and present into a future yet to unfold. Monuments and the rituals associated with them are among the ways that societies remember (Bradley 1993:4), through both inscribed and incorporated practices.

Memory

Whether we are talking about social memory, collective memory (Halbwachs 1992), or memory work (Mills and Walker 2008) memory, as it applies to monuments, is largely about commemoration. Commemoration has three key definitions: 1) to mark by

some ceremony or observation; 2) to call to remembrance, keep alive the memory of someone or something as in a ceremony; and 3) to be a memorial to a person or event. All of the above definitions involve memory to some extent. For this study memory is about commemoration and ultimately about remembering.

Locating Memory

People remember both as individuals and as part of a group or groups (Connerton 1989; Halbwachs 1992; Zerubavel 1996). As individuals our memories contribute to our identities through the continual reproduction of the various stages of our lives (Halbwachs 1992:47). At a larger scale, the “narrative of one life is part of an interconnecting set of narratives; it is embedded in the story of those groups from which individuals derive their identity” and thus we can say that our memories are located within the mental and material spaces of the group (Connerton 1989:21, 37). Here Connerton is conveying the notion that memory, and specifically memory in the context of small-scale societies, is inextricably bound up with the social group in terms of the internalized mental processes such as memory as well as the physical and social milieu that they inhabit. Earlier, and in a similar vein, Halbwachs (1992:53) tells us that “at the moment of reproducing the past our imagination remains under the influence of the present social milieu.” From this it becomes clear that the production and interpretation of narratives about the past is influenced by the present and, taking this further, we can say that the past serves the needs of the present (Olick and Robbins 1998).

What we choose to forget also contributes to our identities (Lucas 1997, Trouillot 1995). Although much of the discussion of memory in this study is concerned explicitly with remembrance, the importance of forgetting must not be understated. Conceiving of remembering and forgetting as polarities is less useful than viewing them as existing in

a state of tension (Buchli and Lucas 2001:81). These authors argue that these tensions may either be constituted and materialized or left unsaid. Further, construction and destruction may create or destroy memories but by the same token, memories may be left out in the process of memory construction leaving gaps, either intended or unintended. Even purposeful suppression of memory such as the destruction of a monument or artifact, will leave material traces of some sort that may serve as mnemonics of past events. What is left out, obscured, and kept hidden away is every bit a part of the process of commemoration as actively remembering and memorializing and proves informative in relation to power dynamics and competing histories and narratives.

Collective memory *sensu* Durkheim and as elaborated by Hallbwachs (1992) has largely been abandoned by many researchers engaged in what has become called memory work (Mills and Walker 2008:6). Principal among the criticisms is that in studying collective memory somehow the individual is left out or considered to be something separate. Social memory is employed instead in order to highlight the many social contexts in which memories are made and recollected as well as the role of the individual in the process of remembering (Mills and Walker 2008:6). Criticisms of collective memory, at least within archaeology, come from those that have adopted perspectives that privilege practice (Bourdieu 1977) and agency approaches (cf. Mills 2005; Mills and Walker 2008), thus the importance of individuals and practice in their works. The term has been retained, however, by those working within sociology (cf. Olick 1999). In fairness, although the individual does not play a prominent role in the collective memory of Hallbwachs (1992), the individual is still recognized as locus of

memory and a constitutive element of remembering. This is true whether you call it social memory, collective memory, or memory work.

Memory Practices

Connerton (1989) has provided two useful concepts with regard to memory practices, *incorporated* and *inscribed* practices, and his work serves as the source for much of the following discussion. Although criticized for being overly simplistic and dichotomous (see below), these terms and concepts are nevertheless useful to the archaeological study of memory in past societies and are retained and used in this study.

Incorporated practices

Incorporated practices are those that are performed, enacted, re-enacted through bodily action or, in some way, are manifest through the human body (Connerton 1989:72-73). Examples of incorporated practices include a handshake, a gesture or series of gestures, or a posture. More broadly, incorporative practices may also include other embodied acts such as the collection and deposition of sediments or other materials such as shell in a specific manner within a ritualized context such as the construction of a monument (Joyce 2008:37). Incorporated practices are important in commemoration because culturally specific postural performances provide a mnemonics of the body and aid in remembering (Connerton 1989:74). Thus, the performance of a series of gestures within a ritual context calls to mind previous rituals, memories, and narratives reinforcing the association of the ritual event with the individuals involved and the purpose for its performance. Although much of the attention given to incorporated practices and discussions of the topic frequently center around ritual, incorporated practices can also be performed during the routines of daily

life. This points up the mutually informative and recursive character of incorporated practices and such reinforcement aids in remembrance by bringing the daily into the ritual and vice versa; through this mutuality of the individual and the group are reminded and thus engage in remembrance.

Rituals and rites are repetitive and “repetition automatically implies continuity with the past” (Connerton 1989:45). The same can be said for daily practices. Such repetition in daily life is visible archaeologically in repeated depositional sequences and practices through time and these repetitions are part of a larger repertoire of incorporated practices that are carried out both within ritual and domestic contexts. Such routine depositional practices will be reflective of the symbolic categories that constitute culture (Pollard 2008:43). For example, mortuary rituals involve repetitive depositional practices where the body or bodies of the dead are interred in a socially defined fashion. With respect to interment in mounds constructed for mortuary purposes, this includes the deposition of both bodies and covering sediments. The physical acts of depositing the bodies and covering sediments are incorporated bodily practices which occur within a larger context of other performative acts such as those described above. Considering the recursive nature of incorporated practices within the ritual and domestic spheres, deposits resulting from daily practices are no less involved in remembering and, depending on the specific context, potentially can provide the precedent for ritual action (Hermanowicz and Morgan 1999). Similarly, ritual also can provide the necessary impetus for changing more routinized depositional practices occurring independent of ritual. Occurring simultaneously with these performative incorporated bodily practices are inscriptive ones, the very manifestation of which is the

creation, renewal, or augmentation of the mound. Overlap in incorporated and performative bodily practices is clear and has led to some criticism of Connerton.

Incorporated practices as defined and employed by Connerton (1989) has received some criticism for essentially creating a dichotomy where incorporated memory practices are concerned (Mills and Walker 2008). The problem lies in the fact that there is overlap in incorporated and inscribed social memory practices. One such example of this is the application of inscriptive practices to the human body. Such bodily inscription is exemplified by body painting, tattooing, and scarification. Interestingly, rather than being set up as a dichotomy by Connerton himself, it is the problem that those attempting to apply his concepts have made the mistake of using it as a dichotomy. Connerton (1989:78-79) notes that “Many practices of inscription contain an element of incorporation, and it may even be the case that no type of inscription at all is conceivable without such an irreducible component of incorporation.” He further goes on to state that the distinction between incorporative and inscriptive practices is intended only as a heuristic device where one or the other discernibly predominates. Clearly Connerton never intended there to be a dichotomy and despite the criticisms, his concepts remain useful to the memory-related endeavors. Perhaps it is best to view incorporated and inscriptive practices as a continuum, in a similar manner as Binford’s (1980) forager/collector model. Archaeologists have tended to view and use the forager/collector model as a dichotomy where it was intended as a continuum. Conceiving and applying incorporated and inscriptive practices as a continuum allows these categories remain useful.

Inscribed practices

The overlapping domains of inscribed and incorporated practices have been touched upon above in the discussion of incorporated practices but are considered here in more detail. Inscribed memory practices lend themselves to archaeological study as they leave material traces and come in a number of forms as amply demonstrated in the archaeological literature related to memory (cf. Van Dyke and Alcock 2003). As originally explicated by Connerton (1989:73), inscription refers to recordation of memory in the form of writing, photographs, sound recording, and the like. For the most part he is referring to the imprinting of information on media (paper, film, video, digital, etc.). Archaeologists have taken up the concept of inscription in both its original form as well as the abstract. A popular abstraction of inscription is to view marking of any kind as an inscriptive practice. One very visible and tangible inscriptive memory practice is the construction of monuments (Bradley 2000:157; Connerton 1989; Pauketat and Alt 2003:161; Van Dyke and Alcock 2003:4). Such a view of inscriptive practice is taken here and monuments, specifically mortuary mounds (although other monuments of a non-mortuary function such as the shell works of the SJRV are also inscribed), are considered to have been inscribed directly into the landscape (social and natural) of the SJRV and northeast Florida.

Inscriptive memory practices are important not only because they leave tangible and visible physical traces, but because they potentially influence future action. For example, once created, architectural features possess the potential to effect future practices by channeling and concretizing subsequent depositional practices in places or sites of memory (Gillespie 2008; Mills and Walker 2008:9). There is then a recursive relationship between places of memory and memory practices as well as actors.

Neither places nor memories exist without people and the material manifestations of memory produced through incorporated and inscriptive practices in the form of monuments in turn influence and shape the memories and practices of people in both the present and the future.

Memory and Identity

Memory and commemorative practices are an important part of identity formation at both the individual and communal levels (Assmann and Czaplicka 1995; Kenny 1999:420; Van Dyke 2004; 414; Van Dyke and Alcock 2003:3). Halbwachs (1992:47) tells us that “[w]e preserve memories of each epoch in our lives, and these are continually reproduced; through them, as by a continual relationship, a sense of our identity is perpetuated.” Although referring to the memory of the individual, this general concept, that memory contributes to a sense of group identity, also is applicable to the social group to which the individual belongs. Regarding identity and commemorative ceremonies Connerton (1989:70) asks “What, then, is being remembered in commemorative ceremonies?” His answer is that, in part, “a community is reminded of its identity” which is told within the context of a master narrative (Connerton 1989:70). From the foregoing it is clear that individual and group identities are enmeshed within contexts of memory and emerge, in part at least, within the context of commemorative practices – that is to say, within loci of memory creation, within ritual contexts.

Identity as it relates to the construction of earthen monuments is explored by Pauketat and Alt (2003). For these authors the pyramidal mounds of Cahokia constructed between A.D. 1000 and A.D. 1200, once thought to represent shared belief systems and hierarchy are viewed as negotiations of identity and authority through an appeal to a real or imagined past based on microscale evidence indicating that the

mounds were built in a series of construction episodes by disparate peoples with a diversity of interests (Van Dyke and Alcock 2003). Another example of the use of architecture to create a sense of community identity can be seen in Van Dyke's (2003) examination of the use of masonry architecture in Chacoan sites in the American Southwest between A.D. 850 and A.D. 1150. In this example, landscape and architecture are referencing the past as one avenue to legitimate social authority and to create a sense of social identity (Van Dyke and Alcock 2003:9). Explicit reference is made to the elements of past social landscapes in order to maintain continuity with the past. One specific example is the incorporation of great kivas into the great house designs and was done as an overt reference, a citation, to the earlier, more communal form of architecture (Van Dyke 2003:194). Similarly, a road linking "the Chacoan present with a great kiva from a century before" was constructed referencing social memory and "creating both tangible and symbolic connections with ancestral spaces, events, and beliefs." In these ways memory by way of referencing (citing) and incorporating previous architectural forms into Chacoan architecture figured into the construction of Chacoan social identity (Van Dyke 2003:194).

In both of the above examples, we see the use of memory in the forms of monuments and masonry architecture to create some sense of social identity. The specifics vary from case to case but the principle underlying them, that memory is a key element in the formation of social identity, is crucial. Memories created within the context of ritual and manifest in the form of architecture, both monumental and not, are an integral part of the creation of social identity. As Eyerman (2004:166) tells us, memory is "a cornerstone of group identity."

Memory and Materiality

Materiality plays an important role in memory production and transmission and may come in the form of artifacts, monuments, or anything else created by humans (Zerubavel 1996:292). Recent work in memory studies among archaeologists emphasized the relationship between materiality and memory (Jones 2007; Mills and Walker 2008). The approach to memory and material culture in this study follows that of Jones (2007). A notable departure from Jones (2007) is the use of materiality rather than material culture (Mills 2005). The reason for this is that the use of “materiality” does not assume that the materials reflect culture but instead that the differential valuation of materials is predicated on the ways that they are used and incorporated socially (Mills 2005:10). A similar approach is also taken by Mills and Walker (2008). Jones (2007:22) uses:

“the term *memory* (emphasis original) in relation to objects, buildings, and such as a way of readdressing the relationship between people and objects in the activity we call remembering. If we take on board the point that people and objects are conjoined through practice and that causation is distributed between people and objects, then both people and objects are engaged in the process of remembering. This is not to say that objects *experience, contain, or store* memory; it is simply that objects provide ground for humans to experience memory” (Jones 2007:22).

From this quote from Jones it is apparent that memory and materiality are inextricably linked and each informs and aids the other in memory. Things aid in remembrance.

But *how* do they aid in remembrance?

An important concept particularly useful in discussions of memory and the material is that of the *index*. Jones (2007:23) finds that the concept of the index is useful because it “captures a sense of the way in which material traces or natural phenomena are perceived as signs of past events.” For example, smoke equals fire because it is a product of that fire and hoofprints refer to a horse because they resemble the shape of

the hoof even though they do not look like a horse. While there is contiguity the sign is not identical to that to which it refers.

Indexical relationships are inferred through the process of *abduction* which is a form of inferential reasoning which links perception and experience with semiotics (Jones 2007:23). Abduction is a process that involves inference from a given case to a hypothesized general rule and relies on a reasoning process that comes with the habitual experience of the world and are made from indexical signs (Jones 2007:24). As an example, a hunter in the woods understands that the hoofprints of a deer refers to the passage of the animal along a game trail in the recent past. The hoof print is an index of the deer and seeing the print, we abductively infer at an unconscious level that the deer has been in the area. Although without the physical presence of the deer we can not be absolutely certain that the deer and the hoofprints are linked, they are, in the common experience of the hunter, associated. Abduction describes the unconscious level at which these kinds of immediate general hypotheses are made.

Through physical persistence, material traces act to presence past events to the senses. By treating objects as indices of past action we come to realize that objects do not preserve memories, but rather they evoke remembrance and in this way material things actively participates in memory. This is what Casey (1987) calls secondary remembering which is a twofold process, first by retrieval of the memory and then by the re-experiencing of the event. In a similar vein Connerton (1989:13) states that “knowledge of all human activities in the past is possible only through a knowledge of their traces.” This approach is similar to Jones’ (2007) use of the index. Both allow a “reading” or the past through materiality. Because of the emphasis on materiality and

things, these conceptions and approaches are particularly suited to an archaeological investigation of commemorative and inscriptive practices in the past.

Citation

A concept useful in the analysis and interpretation of materiality including both monuments and other forms or things in general is that of citation. The concept comes to archaeology from Derrida (1982) through Butler (1993). A simple and straightforward definition of citation is offered by Pauketat (2008:63) where he defines it as “the way in which practices reference previous ones.” Explaining the process Jones (2001:340) notes that “in order for a word or thing to make sense it must reiterate the components of previous sentences or objects.” Elaborating on the concept and explaining what it does Mills and Walker (2008:18) state that “Citations to the past are ways in which genealogies of practices are built, forming bridges between people across large expanses of time and space and these may be expressed at different social scales ranging from the individual to larger social fields or collectivities.” An effect of citation is to reaffirm and transform cultural practices Jones (2007:86). Citation can occur at the daily level through the repeated performance of quotidian activities or periodically as part of ritual or other less frequent events as well as every point in between.

Related to the concept of citation is the *citational field*. Artifacts are cultural performances and as such they are situated within networks of referentiality in that their production and use refer to the past and future events (Jones 2007:81). Further they acting as nodes in a web or network of relations. It is these nodes and connections between human and material agents and their mutual referentiality that compose the citational field which extends through time and across space. The extension through

time and across space is possible because of the physicality of material things. Depending on their physical endurance or ephemerality things will endure to differing degrees. Naturally objects that endure for long periods of time, such as monuments of earth and shell, all things being equal, will extend through time more successfully and to a greater degree than a wooden bowl. In doing so they “project their influence over time and acting as indexes or objects worthy of citation over considerable periods of time; they physically *extend through* (emphasis original) networks over time” (Jones 2007:82). Things that are materially ephemeral will extend through networks to a lesser degree (Jones 2007:84). Further, for ephemeral things to extend through time, even to a lesser degree, “they must be bound up with repetitive practices” (Jones 2007:84). Connections within the networks will be short and their use is engaged in a continual process of citation. Because of the sensuousness and physicality of material remains and residues of previous action, the concept of citation and the related citational field is particularly suited for archaeology and the endeavor at hand as it implicates memory and materiality.

Conclusions

Definitions and discussions of monuments and memory discussed in the paragraphs above are intended as a frame of reference for discussions of monuments and memory presented in this study as they relate to the construction of earthen mortuary monuments among Mount Taylor period Archaic hunter-gatherers of the SJRV. As conceived and employed in this research, monuments are material manifestation of cultural practices and are, at a fundamental level, about memory and identity. Monuments embody the performative practices of society and are inscribed into the social landscape through the incorporated bodily practices of actors within ritual

contexts. Their very existence act as indices of past ritual events and presence within the lives of the people who created them, as well as their descendents, recalls or cites the past events that lead to their creation as well as the lives and acts of the individuals who, in the case of burial mounds, are physically within them, evoking memories which are incorporated into master narratives which form identity at multiple scales from the individual to the immediate community to the regional population.

CHAPTER 3 PERSPECTIVES ON HUNTER-GATHERERS, MONUMENTS, AND MOUND- BUILDING

Monument construction has been characterized as a behavior that emerged in tandem with horticulture or agricultural production and increasing social complexity (Sherratt 1990), not societies characterized by a hunting and gathering mode of subsistence and egalitarian social relations. Ethnographic examples of monument construction among hunter-gatherers are few and typically not found in the many volumes dedicated to the study of these societies. Monument construction is absent in Kelly's (1995:302-303) discussions of complex hunter-gatherers and archaeologists are wont for a touchstone to begin exploring monument-building. Monuments and complexity are linked in the current discourse related to hunter-gatherers and monuments in the southeastern U.S. (cf. Gibson and Carr 2004). Sometimes apparent complexity related to monument construction among archaeologically known hunter-gatherers are evaluated through comparisons to non-hunting and gathering groups, archaeological and ethnographic, in order to determine the presence of social complexity (cf. Saunders 2004). All too often, the result is what amounts to a trait list against which they are compared and almost always fail to measure up. This presents a hurdle that must be overcome by archaeologists investigating monumentality and issues of complexity among foraging societies. Price and Brown (1985:3-4) observe that a reliance on ethnographically known groups has precluded an appreciation of the diversity that once existed among hunter-gatherers. They further state that "it is archaeology alone that provides a glimpse of complex hunting and gathering adaptations" (Price and Brown 1985:3-4). Similarly Sassaman (2004) has indicated that

the archaeological record will be the locus for examples of complexity as it relates to monument construction, not ethnography.

This chapter reviews the issue of hunter-gatherers and monuments with an emphasis on archaeological perspectives. Examples of hunter-gatherer monument construction from the near east, Atlantic Britain and Europe, Australia, and North America are presented and discussed. An emphasis is placed on the Archaic monuments of North America. The majority of Archaic monuments (mounds) are found in the continental U.S. although a few examples from the maritime provinces of Canada are known. Within the continental U.S. Archaic monuments are found largely in the southeastern region with a few examples from the Midcontinent. A brief introduction to the Archaic monuments of Florida is offered at the end of this chapter.

Hunter-Gatherers and Monuments

Monument construction and use is largely absent among people who generally fall under the rubric of hunter-gatherers and particularly those known in the “ethnographic present.” The reason for this is the fact that hunting and gathering groups documented ethnohistorically and ethnographically are those located in marginal areas of the globe such as the Kalahari Desert, the Arctic, and equatorial Africa (Price and Brown 1985). They are not representative of the diversity of lifeways that once existed among hunting and gathering societies. These groups are not pristine primitives, Pleistocene remnants, or the original affluent societies, they are the products of histories of interaction with more complex herders, farmers, colonial authorities, and nation states (Denbow 1984, Headland and Reid 1989; Rowley-Conwy 2001). Populations in these areas are characterized by high residential mobility, fluid band composition, simple and portable technology, egalitarian social relations, and a pervasive, but asserted, sharing

ethic. Among hunter-gatherers of the ethnographic record egalitarianism is an ideology that is asserted and enforced (Cashdan 1980). The ethnographic record, more precisely the uncritical consumption of ethnographic data by archaeologists and its subsequent application to the archaeological record, has effectively reproduced “the form and structure” of “ethnographically perceived reality in the archaeological record” (Wobst 1978:303). Nevertheless, archaeology is perhaps the best, if not the only, means to begin to understand the full diversity that once existed among hunter-gatherers, especially where the construction and use of monuments is concerned (Price and Brown 1985; Sassaman 2004). Considering that egalitarian hunter-gatherers of the present and recent past do not construct or use monumental architecture, it is to more complex hunter-gatherers that some archaeologists have turned to for insight into the nature of monument construction by hunter-gatherer groups in the distant past.

The few ethnographically studied complex hunter-gatherers, such as the Calusa of the southwest coast of Florida or the peoples of the Northwest Coast of North America, have been used to derive measures of complexity that are then applied to hunter-gatherers in the archaeological record, potentially obscuring variation in hunter-gatherer lifeways should they not meet the established criteria (Sassaman 2004). Because the ethnographic record has not been helpful regarding hunter-gatherers and monuments (Gibson 2004), it is archaeology that will ultimately allow for the investigation of variability in past hunting and gathering societies in general, and in the study of monument construction and use in particular (Sassaman 2004). Archaeologists currently engaged in studying monuments erected by hunter-gatherers in the southeast U.S. are typically divided among those who see monument construction as the

handiwork of hunter-gatherers with complex socialites (Russo 2004; Sassaman and Heckenberger 2004), and those that argue hunting and gathering societies need not be anything other than the same simple foragers they have always believed them to be (Crothers 2004; Gibson 2004; Milner 2004; Saunders 2004). As Sassaman (2004:231) notes, there are archaeologists “willing to upgrade the level of sociopolitical complexity among these precocious [mound-building] populations, and, on the other side of the divide, those willing to downgrade the significance of monumentality.” Among the latter group complexity is absent and not relevant because they do not find evidence for it in the archaeological record of their respective areas. Nor do they believe, as stated above, that hunter-gatherers need to be complex to pile earth (or shell for that matter). For those who see complex hunter-gatherer socialities as being responsible for the construction of monuments, complexity is manifest in the monuments themselves, a position criticized by Saunders (2004).

For those who see complexity in the construction and use of monuments the problem becomes: what do we mean by complexity, and how is it manifest in the archaeological record? Sassaman’s (2004) recent review of complex hunter-gatherers considers the many conceptions and definitions of complexity and range from theoretical constructs enabling comparative analyses, to trait lists derived from cross-cultural observations, and abstractions of specific historical conditions. Complexity can be broadly defined as the number of parts in a system and the number of interrelationships between them. Another definition views complexity as “a relative measure of structural differentiation” (Fitzhugh 2003 cited in Sassaman 2004:235). Inequality, especially institutionalized inequality, and hierarchy, figure prominently in the

study of complexity among hunter-gatherers. It can be argued that the seeds of inequality are always present in human societies, i.e. gender and age differences. The causes of complexity remain elusive but tend to center on ecological, demographic, and social factors (Price and Brown 1985).

Ethnographic and Ethnohistoric Evidence for Hunter-Gatherer Monuments

A reading of the literature on hunter-gatherers fails to turn up much in the way of ethnographic data related to monuments. Kelly's (1995) treatment of hunter-gatherers makes no mention of monuments or monumental architecture, even when discussing those considered more "complex." Likewise, Lee and Daly (1999) are mute when it comes to the construction and use of monumental architecture. There are some examples, however limited, of hunter-gatherers creating constructions such as cairns, rock paintings and petroglyphs, carved trees, and totem poles. Whereas rock paintings, petroglyphs, carved trees, and totem poles should be considered monuments of a sort, they are created through the modification of natural materials, painting and carving stone in the case of rock paintings and petroglyphs, and the carving trees and logs in the case of Australian Aboriginal funeral monuments and totem poles, rather than being built things. Only the piling of rocks to create cairns is similar to the process of constructing monumental architecture such as earthen mounds but even in this example, similar in process, occurs on a scale that is less than monumental. In fact, in the case of the carved trees and totem poles, they lack one of the two crucial components of a monument, they do not endure in the same way that a monument built of earth or stone does. Trees die and both trees and totem poles decompose and become earth again. Although both commemorate, they can not be said to endure and

therefore ought not to be considered monuments, per se, but they are nevertheless memorials.

Archaeological Perspectives on Hunter-Gatherers and Monuments

Limited data on the construction of monuments by hunting and gathering societies are available from the Near East, Britain and Atlantic Europe, and Australia. Similarly, a limited amount of data on monument construction also is available Labrador, Canada and the southeastern and Midcontinental U.S. Below examples of hunter-gatherer societies constructing monuments within these geographic areas are presented and reviewed.

Gobekli, Turkey

Located in southeastern Turkey, the site of Gobekli Tepe has attracted a lot of attention in recent years. Some believe that it is the “Garden of Eden,” a claim that site archaeologist Klaus Schmidt downplays (Scham 2008). More importantly for the research undertaken in this study, Gobekli Tepe represents a very early example of monumental architecture constructed by hunter-gatherers prior to agriculture in a world consisting only of hunters and gatherers. To date excavation has revealed the presence of four structures with diameters ranging from 10 to 30 meters. An additional 16 structures are indicated by geophysical survey. Most extraordinary are the standing T-shaped megalithic carved stone pillars, many of which are adorned with relief carvings of foxes, lions, boars, vultures, scorpions, and spiders. Radiocarbon assays from the fill layers around two of the pillars returned estimates around 9000 cal. B.C. (Schmidt 2001:49), some 11,000 years B.P., placing its inception within the Pre-pottery Neolithic A period (PPNA). Further supporting the early temporal association is the

recovery of an assemblage of lithic tools that date no later than Pre-pottery Neolithic B (PPNB), composed largely of diagnostic projectile points made from high quality flint.

Based on the research to date, Schmidt (2001:46) believes Gobekli Tepe to be “associated with ritual purpose” and that “no serious claim for domestic use is tenable.” Furthermore, the subsistence remains identified are composed of wild fauna and flora with no domesticated species having been identified (Schmidt 2001:47-48), further solidifying the claim that the megalithic structures at this site were constructed by hunters and gatherers. The occurrence of subsistence remains at a site that claims not to have evidence of domestic use is peculiar at first glance but it is ultimately explainable in that the faunal and botanical specimens recovered represent the remains of ritual feasts or, alternatively, as provisions for the labor force that constructed these monuments. Schmidt (2001:48) believes the site to have functioned as a focal point for meetings between several groups of hunter-gatherers from the territories around the site and that these meetings were rooted in ritual. It was during these meetings that the labor sufficient for the quarrying of the megalithic pillars and the construction of the “temples” was possible. Ultimately, however, it is Schmidt’s belief that the purpose of the site and its monuments is as a “final resting place for a society of hunters” (Curry 2008). Although no evidence for burials has yet been discovered, fragments of human bone have been recovered during excavation of the site.

Among the most important contributions of the research at Gobekli Tepe is the recognition of monument construction by hunting and gathering groups and the antiquity of monumentality among them (11,000 years B.P.), demonstrating that it emerged prior to the domestication of animals and plants. The latter reaffirms the idea that production

and domesticates were not a necessary precondition for the emergence of monumentality and social complexity. It is clear from the work at Gebelki Tepe that the reverse is true, that monumentality and complexity in a ritual context preceded and provided the impetus for domestication of plants and animals. Clearly Gobekli Tepe represents the earliest known example of monumentality among hunting and gathering groups in a world consisting only of hunter-gatherers. The situation appears somewhat different in the British Isles and Atlantic Europe where it may have been the interaction of hunter-gatherers and farmers that lead to the construction of monuments among hunting and gathering groups in these areas.

Neolithic Britain and Atlantic Europe

The construction of Neolithic monuments, primarily for funerary purposes, marks a visible break, a rupture, with the preceding Mesolithic in Europe and represented something new (Scarre 2002a). Sherratt (1990) views the origins of earthen and megalithic burial monuments as related to, and an essential part of, the interaction between natives and newcomers and is related to the spread of cereal cultivation and the transformation of indigenous foragers into indigenous farmers; monumental tombs are from Sherratt's point of view an essential element in this transformation. Bradley (1998) does not share this view and rejects the proposition that hunting and gathering societies in Neolithic Britain and Atlantic Europe were transformed by Neolithic "missionaries" but themselves, as hunters and gatherers, constructed monuments without the pressure of transformation and assimilation. Bradley (1993) cites the lack of evidence for cereal cultivation and pre-cereal cultivation radiocarbon dates for some of the monuments in northwest Europe as evidence that the indigenous hunting and gathering groups were capable of constructing monuments. He further notes that

beyond superficial associations implied by a few items of material culture, these groups on the fringe of agriculture remained hunter-gatherers after the Neolithic transition elsewhere.

Scarre (2002a:2) notes that “It is clear, in any event, that monuments in other parts of the world were not beyond the capabilities of hunter-gatherer groups.” He also suggests that monumentality was part of a widespread process of change at the Mesolithic/Neolithic transition where Mesolithic hunter-gatherers coexisted with Neolithic farmers and were connected through exchange networks. Thus it is possible that the emergence of the Neolithic mortuary mounds in Atlantic Europe is a process of local interactions where the practices of each groups coalesced and resulted in these monuments.

Precedents of mounded mortuary facilities are known from the Mesolithic on the coast of northwest Europe. Mesolithic shell middens in southern Brittany, presumably of a mounded character, have been interpreted as burial locations with attendant feasting with the latter being responsible for the midden (Scarre 2002b:25). The location of mortuary facilities in mounded contexts consisting of subsistence debris made up largely of shell is known from the SJRV (Beasley 2008). The emplacement of mortuary facilities within locales of prior inhabitation also register in the archaeological record or southern Australia.

Australian Aboriginal mounds

Mounds created by Aboriginal peoples of southern Australia differ from all those discussed in this chapter in that they do not appear to be intentionally created monuments. Rather they are domestic accumulations, specifically earth ovens and associated subsistence remains, where burials were later emplaced (Littleton 2007;

Wood n.d.). Mounds tend to be found in areas characterized by seasonal floodplains and wetland environments (Wood n.d.:1). Mounds vary in size but are typically a meter in height with a diameter of about 20 meters (Wood n.d.:8). Some mounds may measure in excess of 60 meters in diameter. Early excavations in these earthen mounds revealed ashy sediments, oven stones, and animal bones (Wood n.d.:5). There appears to be some differentiation in the mounds functionally based on the nature of the deposits and the material cultural inventories they produce. Larger mounds tend to produce greater amounts of stone artifacts and subsistence remains whereas smaller mounds tend to possess fewer artifacts. Larger mounds also tend to be selected for burial purposes (Wood n.d.:8).

The emplacement of burials in mounded contexts is part of a larger pattern of burial in southeastern Australia. In this region there is an intentional use of high points in the landscape and may only be a few tens of centimeters above the surrounding terrain (Littleton 2007:1015-1018). Often these are in close proximity to water sources and have clear boundaries. Interestingly, of the many mounds in southeastern Australia not all have burials but those that do contain significant numbers of burials. Points of higher elevation comprised of occupational debris with burials typically do not display evidence for cycles of occupation, burial, and reoccupation. The placement of burials in a mound influences future actions in that it renders it unsuitable for occupation but appropriate for future burials.

Commonly these mounds are interpreted as a means of staying dry during the wet season and more effectively exploiting wetland environments and, while there are mounds with burials in them, they are not constructed intentionally for the purpose of

burial (Littleton 2007; Wood n.d.). Regarding the monumental character of these mounds, some of the larger examples likely qualify based on their scale relative to the other smaller mounds in the region. Further, they endure – they last a very long time. The argument could be made that these mounds are indeed mortuary monuments. Following Claassen's (1992) argument that the shell mounds of the Green River in Kentucky containing numerous burials are indeed burial mounds, it is possible that the Australian examples might also be considered monuments. The Kentucky mounds are freshwater shell middens containing burials and are strikingly similar to the Australian earthen mounds. The matrices of both are characterized by what is considered domestic debris and both contain appreciable numbers of burials.

A significant difference between Australian and Kentucky examples and other hunter-gatherer monuments is that they the burials were emplaced subsequent to their formation (in the Australian case) and during use in the Kentucky example. In neither case were these mounded contexts created specifically for burial. This contrasts markedly with the examples from Neolithic Britain and Atlantic Europe presented above as well as the North American cases presented below.

North American Monuments

Ritual and mortuary monuments are found throughout the U.S. east of the Mississippi River although numerous examples are also found in some states on the western side of the great river. Early on mounds were noted by naturalists, explorers, pioneers and presidents and speculation regarding their builders abounded. Later serious archaeological inquiry would attribute the mounds to Native American groups and the beginnings of the mound-building tradition was fixed at the period when the first cultivation occurred as it was assumed that the two went hand in hand with increased

social complexity (Bense 1994:110). Time and more research would belie this position and not until recently has it come to be accepted in the “heartland” of early mound research – the southeastern U.S.

Archaic origins

Contrary to the long-held belief that the construction of monumental architecture among Native American groups began during the Woodland period, there is now a body of evidence demonstrating that mound construction actually began during the Archaic period. Research in the southeastern U.S. demonstrates this most forcefully although some evidence from the American Midcontinent, limited as it is, also points in this direction. At the southeastern sites mound construction began during the Middle Archaic. Watson Brake in Louisiana and the Horr’s Island and Harris Creek sites in Florida are the best known of the sites to have been dated to this period though there are others, notably in Louisiana. Basal dates for the monuments at the Watson Brake site have been obtained and place the initiation of monument construction at 5400-5000 cal. B.P. (Saunders et al. 1997; 2005), Harris Creek dates from 5729-6889 cal. B.P. (Russo 1994a:Table1), and construction at Horr’s Island was initiated between 7739 and 6729 cal. B.P. (Russo 1994a:Table 1). Other monuments too have been dated to the Middle Archaic and all come from Louisiana and include Stelly Mounds, Hedgepeth Mounds, Monte Sano, Frenchmen’s Bend, and the LSU Campus Mounds (Ruso 1994a:Table 1). Archaic monument construction from the maritime province of Canada and American Midcontinent is limited and reviewed below.

The maritime archaic of Subarctic Canada

Hunting and gathering groups of the Canadian Arctic constructed monuments, apparently for burial, and these represent some of the earliest in North America. At

least three are reported from the Canadian subarctic. The first two are located in Brador, Quebec. These consist of “conspicuous piles of rock” that were “erected over graves lined with stone” (Tuck and McGhee 1977:122). Found within these monuments were stone knives and projectile points, red ochre lumps, but no human remains, a fact attributed to the acidic nature of the soils.

A third mound at the site of L'Anse Amour in Labrador, some 30 km east of Brador has also been excavated. Work at this site revealed a low mound consisting of small boulders that had been built high enough above the original ground surface for a few of the larger ones to protrude through a zone of turf that had formed and then itself been buried (Tuck and McGhee 1977:122). In size the mound measures approximately 8 meters in diameter and one meter in height. Strata observed consisted of three separate layers of boulders and sand and toward the center a cist grave was encountered. Further excavation below the sand layers where the cist grave was encountered produced an intact human burial within the limits of the cist. A number of grave goods accompanied the burial including a walrus tusk, pink quartzite and quartz knives and projectile points, bone projectile points, an oval chipped dark quartzite stone, two graphite pebbles enveloped in red ochre, a small bone tool made from the base of a caribou antler (also enveloped in red ochre), a decorated tapered pendant made of bone, and a whistle made from a bird bone. Upon completion of excavation the distance from the bottom of the grave to the top of the monument is 1.5 meters. Two graveside hearths were also discovered during excavation. Charcoal from these features returned dates of 9009-8389 cal. B.P. and 8303-7932 cal. B.P. placing the monument firmly within the Maritime Archaic tradition (Tuck and McGhee 1977:126-

127). Interestingly the burial within the mound was that of an adolescent, sex indeterminate.

In this example from the Canadian subarctic, we see an example of behavior by hunting and gathering groups that is beyond what they are thought capable of doing, building a monument, a fact recognized by Tuck and McGhee (1977:124). Granted these monuments were not constructed on the scale of some of those during the Archaic in the southeastern U.S. For the North American monuments the mound at L'Anse Amour is the earliest yet known. The authors maintain that the general dearth of mounds in this region is due to the fact that mound construction and burial was not a normal part of the funerary practices of Maritime Archaic hunter-gatherers. Apart from a few speculative scenarios related to ritual associated with placating spirits of the dead, luck, or human sacrifice, Tuck and McGhee (1977) do not present any definitive explanation for this practice. So rather than representing a full mortuary mound-building tradition, the mounds built by Maritime Archaic tradition hunter-gatherers is seen by them as the exception rather than the rule. Some time later, during the Middle Archaic of the eastern Woodlands of the U.S., monument-building emerges among hunter-gatherers in this region, notably in the Midcontinent and the Deep South.

The American Midcontinent

Archaic period monuments as manifest in the southeastern U.S. are absent from the record of the American Midcontinent. However, what appear to be analogs to mounds, burials on natural knolls on bluff tops overlooking river valleys, are known from this region but are not considered intentionally constructed ceremonial features (Russo 1996:259). During the Archaic in this region the more productive members of society, those middle-aged and young adults, were buried in bluff top knolls (Buikstra and

Charles 1999; Charles and Buikstra 1983:134). Through the deposition of additional layers of burials and covering sediments these knolls were transformed into “mounds” (Buikstra and Charles 1999:207). Buikstra and Charles (1999:207) note that it is the most productive members of society, the young and middle aged adults, who are buried in the knolls whereas the very young, elderly, and infirm were buried in midden contexts. The informality of these “mounds” contrasts sharply to those of the later Woodland period s which are more highly organized in their form and construction. Differing markedly with the informal Archaic accretionary “mounds” of the Midwestern U.S are those intentionally mounded monuments of the southeast.

The southeastern United States

Numerous Archaic period monuments have been identified throughout the lower southeast - Louisiana, Florida, Mississippi, and Arkansas. Russo (1994a) provides a table summarizing all those known and suspected mounds and sites and totaled some 137 possible and confirmed sites with 156 possible and confirmed mounds.

Researchers in the southeastern U.S. long ago recognized the late or terminal Archaic age of the monuments at Poverty Point in Louisiana and considered them to be an enigma. Research elsewhere in Louisiana would reveal that other mounds were also early but there was a reticence on the part of archaeologists to publish what was thought to be anomalously early radiocarbon dates (Russo 1994a; 1996). Part of this reticence is the fact that they were out of sync with the accepted cultural-historical paradigm. As late as the mid-1980s the reception of any suggestion of the existence of Archaic mounds was lukewarm at best (Russo 1994a). The situation changed, however, in the early 1990s when several researchers in the southeast became aware

of each others work and began to recognize that some mounds were genuinely early constructions (Russo 1994a; 1996).

Forty years earlier mound-building was recognized as a component of the Amite River Phase in southeast Louisiana (Gagliano 1963). Amite River Phase sites included small conical mounds occurring in groups near Archaic period habitation and quarry sites. No substantive investigations ensued subsequent to the introduction of this phase (Russo 1994a). Later some of the Amite River Phase mounds produced evidence of ceramic period groups (Russo 1996). Nevertheless the idea of Archaic period mounds in the southeastern U.S. began to gain ground in the mid-1990s and has subsequently become accepted within the archaeological community in this region. However, with a few exceptions (Gibson 2006; Saunders et al. 1997; 2005; Sassaman 2004, 2005), the issue has not reached a wider audience beyond the region though this situation is beginning to change (Randall 2008, Sassaman 2008).

Key among the factors that lead to the increased recognition of Archaic mounds is a solid body of archaeological field research. Careful excavation and multidisciplinary research strategies in combination with radiocarbon dates have gone a long way in demonstrating the antiquity of southeastern Archaic monuments. Soil science too has played a significant role. The siting of mound complexes on old landforms and the presence of weathered soil profiles in the mounds themselves also aided in the recognition of their antiquity (Saunders et al. 1994, 2001, 2005).

Underlying the neglect of research into Archaic mounds was a combination of factors. Among these were the underreporting of sites and a lack of dedicated research on the topic. However, in addition to these reasons, perhaps the most salient is the

caution exercised on the part of researchers in reporting unprecedented data of this kind (Russo 1994a). In spite of these hurdles progress in making the case for Archaic mounds continued. The big break for Archaic mound case-making came with the publication of a special issue of *Southeastern Archaeology* (Vol. 13, Number 2) in 1994. This volume was the result of a symposium on Archaic mounds in the southeast organized by Mike Russo. This volume, as aptly stated by Russo (1994a:93) himself, provided “a persuasive argument for accepting Archaic mound construction as fact.”

Once the matter of whether or not Archaic mounds existed was resolved, the debate turned toward the meaning of these monuments. Specifically, what do the Archaic mounds of the southeastern U.S. tell us about the people who made them? In spite of the fact that there is an acceptance of Archaic period mounds in the southeast, some archaeologists, and even those working at Archaic mound sites, are reticent to see anything more than earth, and sometimes shell, piled up by simple egalitarian hunter-gatherers. A main thrust of the debate is over the issue of complexity and two camps have emerged, those who see complexity among the societies who erected the mounds and those who do not see them indicating a level of complexity above the assumed egalitarian relations that have always been thought to exist. Others have attempted to tread a cautious middle ground (Gibson 2004). For complexity’s detractors, monumentality, its symbolism, and the insights it potentially can provide are downgraded or denied (Crothers 2004; Saunders 2004; White 2004). On the other side of the divide are those who are willing to consider that monumentality among hunter-gatherers is signaling that the groups creating them are not the archetypal foragers of the ethnographic present but are, in a real sense, different (Clark 2004; Russo 2004;

Sassaman and Heckenberger 2004) . But how are they different? They are different in the sense that their sociality is apparently more complex than those we know through ethnography. A recently published volume has crystallized this debate (Gibson and Carr 2004). Much of the research has centered on issues of complexity with several authors considering the issue of monumentality vis-à-vis mounds and mound complexes in the region (Clark 2004; Crothers 2004; Russo 2004; Sassaman and Heckenberger 2004; Saunders 2004; White 2004).

Evidence and arguments against complexity are a lack of data supporting long-term occupation and sedentism (Saunders 2004) and that monument construction does not require a large population or coercive control stemming from inequality (Crothers 2004; Gibson 2004, 2006; White 2004). For Crothers (2004), the accumulation of shell mounds in the Green River region of Kentucky is a gradual process. Although not divorced entirely from ritual, he rejects the notion that the shell midden mounds of the Green River are intentional constructions for mortuary purposes, a position contrary to that offered by Claassen (1992). Crothers (2004:86-87) notes that in spite of a half a century of research, this work has failed to demonstrate that the midden mounds of the Green River in Kentucky are “purposeful monuments in the sense the term mound normally connotes in archaeology.” He does not reject outright the idea that these mounds acquired meaning over time, becoming venerated later. Interestingly, Crothers is in agreement with Gibson’s (2000:183) argument that ceremony and ritual were a part of, and inseparable from, everyday life and this is curious because, if true, the Green River midden mounds would have had ritual significance from the outset as part of daily life rather than accumulating meaning in the same manner as the midden debris –

gradually and over time. He further states that “large midden sites were as much a part of the cultural landscape as they were a part of the natural landscape” (Crothers 1999, cited in Crothers 2004:87). Part of Crother’s argument hinges on the portrayal of Archaic hunter-gatherers according to the ethnography of modern foragers which, as discussed above, is tenuous at best. Crothers also contends that the early monuments in the lower Mississippi Valley were symbolic of the natural abundance of that region, supporting a foraging mode of production and interaction on an unprecedented scale which lead to mound-building behavior (Crothers 2004:95). Simply put, the foraging mode of production of the Green River groups, according to Crothers, did not allow for the behaviors and group organization necessary for the purposeful construction of monuments of earth and shell.

White (2004:19), reduces the impetus for mound construction to environmental imperatives, stating that the reason underlying mound construction in the southeast “could simply be for uplift above the low wet ground,” noting that “[e]verywhere we find them, Archaic mounds are in some low alluvial valley or coastal wetland situation where the terrain is not very much above sea level.” She further goes on to state that “[y]ou can see farther on top of a higher elevation, keep your food and feet from rotting and your fuel dry, and set up a living space that will last longer and be able to be revisited often” (White 2004:19). Whereas this may be true to some extent, it would require that your field of view was not obscured by trees or other vegetation, and that the Appalachian groups did have an immediate return system (cf. Woodburn 1982) characteristic of simple foragers, and that they were not capable or willing to move to higher ground outside of the river valley during periods of flooding or inundation. White

does note that there are no earthen mounds within the Apalachicola River valley during the Late Archaic and it seems to be the case that the groups inhabiting this region were indeed simple foragers. This should not be surprising considering that groups with simpler forms of social organization can live along side those who are more complex.

Saunders (2004) has evaluated whether or not social inequality is present among the builders of Archaic monuments in northeast Louisiana using evidence independent of the monuments themselves including plant domestication, sedentism, storage, structures, trade, craft specialization, feasting, and burials/grave goods. While some evidence is present at all the sites considered none possess all or most of these classes of evidence for complexity. Saunders primary concern is “that social inequality is being attributed to Middle Archaic cultures solely on the basis of monumental architecture,” and rightly so (Saunders 2004:159). One problem with this line of reasoning is that it assumes that complexity and inequality among hunter-gatherers will assume the form of the later Woodland and Mississippian groups from which the complexity trait list is drawn. If the sociality of hunter-gatherers is different from later groups, how can a list of traits from the latter two be justifiably used to measure complexity among Middle Archaic hunter-gatherers in northeast Louisiana? What is called for is a reconceptualization of hunting and gathering groups and other alternative possibilities for the occurrence and manifestation of complexity and construction of monuments.

Contrasting with the detractors of complexity among mound-building Archaic hunter-gatherers are those scholars who see elements and aspects of more complex socialities among the monument-building groups of the southeastern U.S. Russo (2004) finds evidence for the presence of a measure of social inequality in the

morphology of shell rings along the southeast Atlantic coast. Shell rings, according to Russo, are not entirely the product of quotidian fare, everyday food remains, but are largely or in part the product of feasting behavior which utilizes everyday food items but on a larger scale. Drawing on social space theory, Russo maintains that the morphology of the shell rings, “C” and “U” shaped forms especially, and the differential accumulation of shell remains at shell rings with these configurations, such as greater accumulations opposite the openings, provides evidence for inequality among the groups who made them. The height and thickness of shell deposits at a number of shell ring sites supports Russo’s contention, demonstrating that some measure of inequality is present among the Late Archaic foragers of the southeast Atlantic coast.

Evidence for complexity may also be found in Clark’s (2004:205) consideration of the measurement systems, site planning, and ritual significance of early mound enclosures. According to Clark the regularity in the geometry of mound sites suggests intentionally in their planning. Part of this regularity is based on a shared standard unit of measure used by groups in both North and South America. The scales at various sites are multiples of this standard unit of measure (1.66 meters). Regularities in the layout of the sites and regularity of scale are all taken to be indicators of a shared system and the possible ritual significance of the standard unit of measure. The planning and implied premeditation of the mounds belies the notion that they are gradual accumulations or that meaning is acquired and incidental to the passing of time (cf. Crothers 2004). What these regularities are showing us is that the Archaic monuments in Louisiana are not haphazard but are planned out in advance, perhaps

not all created simultaneously, but erected according to a plan using a regular unit of measure.

Sassaman and Heckenberger (2004:220) build on Clark's argument and suggest that plans for mound complexes embody principles of ranking or hierarchy that mirror and reproduce social difference. The presence of plazas created by the circular or elliptical arrangements of mounds signals the presence of the social relations of those who built them, or simply appear in them (Sassaman and Heckenberger 2004:229). For these authors the presence of mound groups with plazas represents hierarchy among the groups who made them, a proposition the authors recognize as controversial (Sassaman and Heckenberger 2004:230). The transformation of Archaic society from one modeled after the contours of nature to one rooted in symbolic resources as those observed in the hierarchy represented in the plaza had little to do with economics or demography, but with social identities and philosophies (Sassaman and Heckenberger 2004:232).

In spite of their differences those in the complexity camp, as well as those in the simple forager camp, both agree that of the Archaic southeastern U.S. were constructed by hunter-gatherers. The fact of the matter is that those who do not see complexity in the monument-building hunter-gatherer societies in their respective areas of research may actually be right. There is no reason to assume that all hunter-gatherer groups who mound earth and shell to form monuments need to be complex and that complex hunter-gatherers with some degree of inequality can live along side those who have maintained a relatively egalitarian set of social relations. On the other hand, just because complexity hasn't manifest itself in the ways we have come to expect based on

the study of more complex horticulturalists and farmers does not mean that social complexity and inequality of a kind did not exist. What we must do is to consider each case individually and on its own merits within its local and regional context and from different perspectives. Once we do this it may be possible to begin understanding the origin and function of monument-building within the southeastern U.S.

The archaic mortuary mounds of the St. Johns River Valley and northeast Florida

Florida too has its share of the Archaic monuments. Most are found along the SJRV and the adjacent Atlantic Coast in northeast Florida (Figure 3-1). Other Archaic monuments are known from southwest Florida also, most notably the Horr's Island Complex investigated by Russo (1991, 1994b; 1996). Interestingly no Archaic monuments have been identified in central Florida, the panhandle region, or the northern and central Gulf coast. For the purposes of this discussion the monuments discussed are only those that are composed largely of sand and contain burials. Other monuments of shell, some also containing burials, are also monumental in scale but are not considered here (Beasley 2008; Randall and Sassaman 2005; Sassaman 2010; Sassaman and Randall 2009). Much as the case with the Archaic monuments in Louisiana, archaeologists in Florida have had the necessary information to identify Archaic period monuments but they, like their colleagues in Louisiana and elsewhere, were reticent to accept that the monuments could be Archaic in age even in the face of fairly convincing stratigraphic and radiometric data. The purpose of this discussion is only to introduce Florida's Archaic monuments and is not intended as a thorough consideration.

Clarence Moore was among the first to excavate in Florida's Archaic monuments along the St. Johns River. Moore excavated in all of the known and suspected Archaic

period mortuary mound sites: Harris Creek, Bluffton, the Mound North of Deleon Springs, the Mound North of Lake Monroe, Thornhill Lake Mounds A and B, Persimmon/Baxter, and Orange Mound. At all of these sites Moore either encountered burials in contexts lacking pottery, often found in or associated with white sand strata such as Thornhill Lake, Persimmon/Baxter, and Orange Mound. Bullen also excavated burials in white sand at Harris Creek where Moore also dug but never encountered the Archaic cemetery at this site (Aten 1999; Jahn and Bullen 1978; Moore 1893). Some of the mounds excavated produced no burials at all but did demonstrate that these monuments lacked pottery in the lower levels if not altogether. Such mounds include the mound north of Deleon Springs and the mound north of Lake Monroe. Moore excavated the Bluffton mound and reports finding no pottery except on the immediate surface (Moore 18994c). Sears (1960) reports a similar situation for the Bluffton burial mound and here ceramics were found in association with intrusive burials.

Archaic monuments along the Atlantic coast are few in number compared to those of the SJRV. Most notable among these is the Tomoka Complex. A.E. Douglass (1882) was the first to dig in the larger mounds (Mounds 5 and 6) recovering two caches of bannerstones and a pendant made from the wing of a broken bannerstone from Mound 6. No burials or human remains were noted by Douglass in his work in either mound, nor was any pottery. A second possible candidate for a coastal Archaic mound is the Marineland Mound C (8FL252). Lamme (1941) excavated this mound in northern Flagler County at what was and is today the Marineland attraction. Historic and prehistoric era burials were found by Lamme. Historic burials are indicated by the presence of glass beads and metal artifacts. Prehistoric burials are of two kinds, those

found in strata associated with pottery and those found in levels and strata without pottery. Several burials were interred on beds of oyster shell and buried in a flexed position – a treatment that is reminiscent of the Gauthier Archaic cemetery where burials were placed on beds of freshwater shell (Carr and Jones 1981). Regrettably this mound has been destroyed (Austin 2004) and its true age can not be determined. Although few in number, these sites do show that Archaic hunter-gatherers making their home along the Atlantic coast of Florida, like their neighbors in the SJRV, were constructing mortuary monuments of earth.

Within the SJRV Archaic mortuary monuments share several similarities that argue for the existence of a regional mounding tradition (Endonino 2003). Similarities in the location, internal structure, and content argue in favor of this. A parallel and contemporary tradition along the Atlantic coast of northeast Florida shares many of the same characteristics of the SJRV sand mortuary mounds. Despite overall similarities, there is also a significant amount of variation and this is the result of differences in local ritual practice as much as it may be a reflection of temporal variation. Regrettably there are too few monuments with radiocarbon dates and the resolution of the chronology for mound construction along both the SJRV and Atlantic coast is poor. Chronology looms large as an area for additional research.

Conclusions

By and large hunter-gatherers are not associated with the construction of monumental architecture in the minds of archaeologists and anthropologists. Although other forms of memorialization such as rock painting, tree carving, totem poles, and piling stone to make cairns have been observed they should not be considered monuments since they lack one or both of the key characteristics of monuments: either

they are not monumental in scale or they do not endure. Historically monument construction has not been associated with hunter-gatherers, but it has been linked in both the Old World and New World with cultivation – monuments were considered as a product or consequence of agriculture. Evidence from several parts of the globe has shown that hunter-gatherers are capable of monumental constructions. Some of the best examples of this practice come from the lower southeastern U.S. It has been demonstrated that Holocene hunter-gatherers were capable of, and in fact did, construct monuments – they were the earliest mound-builders. What the construction of monuments in southeastern U.S. tells us about the people who made them and what they mean is the central focus of the ongoing debate between those who see increased social complexity and symbolism and those who only see egalitarian hunter-gatherers building monuments. Nevertheless both sides are in agreement that hunter-gatherer groups in this region were engaged in monument construction far back in antiquity and long before they have been traditionally believed to occur.

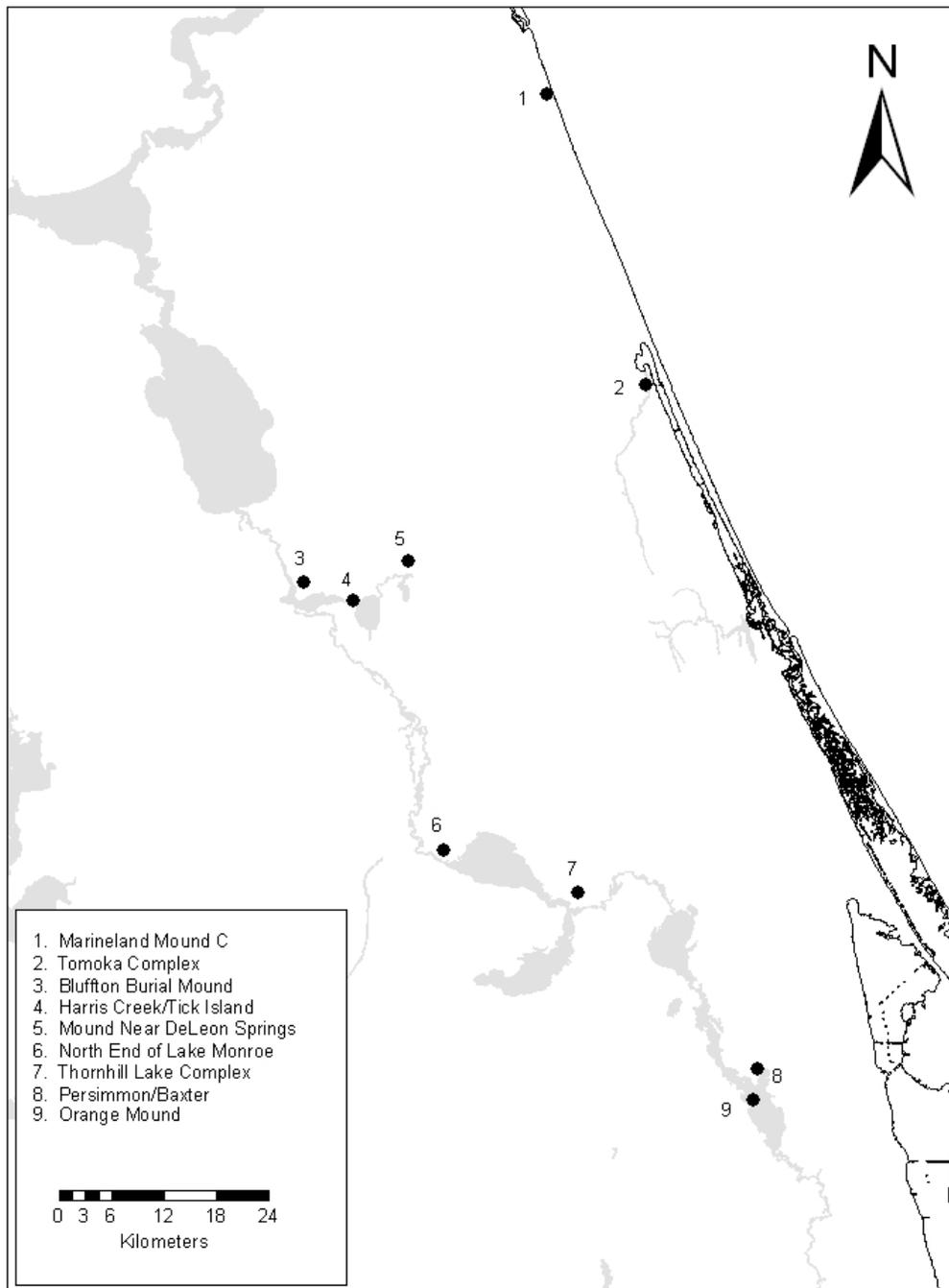


Figure 3-1. Archaic mounds of the SJRV and Atlantic coast of northeast Florida.

CHAPTER 4 MOUNT TAYLOR ARCHAEOLOGY

The archaeological record of the SJRV spans back to the earliest Paleoindian groups to inhabit the Florida peninsula and the descendent Early Archaic populations. Evidence for these groups is limited (Neill 1964; Sassaman 2003a). A much more robust record for later groups of the Archaic and subsequent Orange and St. Johns cultures exists in the form of shell middens, mounds, and pottery. It is with the groups of the Middle and Late Archaic pre-pottery Mount Taylor culture that are the subject of this chapter.

We open with a brief introduction to the archaeology of the SJRV with its beginnings in the late eighteenth century explorers and move forward in time highlighting the substantive research that has occurred with a particular eye for archaeology that deals with Mount Taylor culture. The balance of this chapter is devoted to a discussion of Mount Taylor culture and provides an overview of its definition, chronology, and material remains. Additionally, and more importantly, exchange and interaction and ceremonial behaviors, notably monument construction and aspects of attendant ritual, are presented and discussed. Interaction, exchange, monument construction and all that come with it are significant aspects of this research and are dealt with substantively in later chapters (Chapters 6, 7, and 8). This chapter provides the necessary background needed for further discussion of these topics. Lastly, I propose and define the Thornhill Lake Phase of Mount Taylor based on the results of this research and other work I have done (Endonino 2003, 2005).

The Archaeological Record of the St. Johns River Valley

Early Investigations

Research concerning archaeological remains along the St. Johns River has its beginnings in the middle eighteenth century with an expedition by John Bartram for the purpose of collecting botanical specimens. Accompanying Bartram was his son William, who would later return to the St. Johns and explore its shell mounds. During his visit to the St. Johns, the elder Bartram observed and commented on several shell middens (he called them shell bluffs) but did not attribute their construction to the prehistoric inhabitants of the region (Goggin 1952:31). In the last quarter of the eighteenth century William Bartram returned to the St. Johns and described a small number of sites, most notably Mt. Royal (Goggin 1952:31). While not concerned specifically with the prehistoric archaeological sites of the St. Johns, these early explorers were the first to document and describe the existence and location of sites, serving as a jumping off point for later investigators.

The first systematic and scientifically oriented archaeology in the SJRV was carried out by Jeffries Wyman (1875) during the mid-nineteenth century. Wyman was Curator at the Peabody Museum at Harvard University and began systematic excavations in the mounds and middens along the St. Johns and the Atlantic coast in the years following the Civil War, between 1867 and 1871 (Goggin 1952:32; Wyman 1875). Wyman's work describes the location of the sites along the river; their size, shape, and condition; and the cultural materials he found in them. He discusses the occurrence of human remains in the shell mounds, speculating that their presence was the result of cannibalism due to their fragmented nature and association with other faunal remains more typical of subsistence. An attempt was also made to determine

the age of the shell mounds by measuring the circumference of large trees growing in them. Many of Wyman's (1875:86) observations presented in his conclusions remain true and retain their significance. Among the more important observations are that the shell deposits are the result of human activity, the bones and shells that compose them are food remains, and the earliest strata do not contain pottery but the later ones do. Wyman's more dubious and speculative conclusions notwithstanding, the significance of his work cannot be denied and remains relevant today.

Of equal and perhaps of greater importance is Clarence Bloomfield Moore (1892a, 1892b, 1892c, 1893, 1894a, 1894b, 1894c, 1894d). Moore conducted excavations at a multitude of mounds and middens throughout the southeastern U.S., the results of which were voluminous and published in a timely fashion. Both vilified and praised for his work as it was both terribly destructive and highly informative, Moore's contribution to archaeology is undeniable. One could argue that had he not dug the many sites he visited, they likely would have been carted off as road fill, looted, vandalized, or some combination thereof with the result that much if not all of the information from them would be lost forever. Moore's excavations in the SJRV and his published accounts are a valuable, proven resource for archaeologists past, present, and future. This point is amply proven in Chapter 5 where Moore's work at Thornhill Lake is discussed in detail.

St. Johns Archaeology in the Twentieth Century

Subsequent to the works of Wyman and Moore, little professional archaeological research was carried out in the middle St. Johns region until the 1930's under the aegis of the Civilian Conservation Corps (CCC), although some minor investigations by amateurs was carried out in the area and along the Atlantic coast (Goggin 1952:34-35; Potter and Taylor 1937). Much of the CCC's work was carried out in the Ocala National

Forest and focused on the shell mounds and middens including Silver Glen Springs, Salt Springs, and the Midden at the Mouth of Silver Glen Run among others.

Collections of artifacts were made from these sites and from shell material spread along roads throughout the Ocala National Forest and surrounding areas.

Following the Second World War archaeological interest in the St. Johns region reemerged. Archaeologists, among them John M. Goggin, Irving Rouse and Ripley P. Bullen, all carried out excavations and research in the area. Goggin (1952) brought together all previous research in northeast Florida, refining the chronology, cataloging all known sites, and placing them within a spatio-temporal framework; it is essentially a summary of all that came before and has served as a point of departure for all that has come after it.

Ripley P. Bullen conducted much work in the St. Johns at a number of key sites; among them Harris Creek/Tick Island (Jahn and Bullen 1978), Bluffton (Bullen 1955) Ocala National Forest Middens 1 and 2 and Kimball Island Midden (Bullen and Bryant 1965), and Sunday Bluff (Bullen 1969). His work at these sites added considerably to our understanding of the chronology of these sites, and the St. Johns at large, with the recovery of several organic samples for radiocarbon dating, some of which were associated with temporally diagnostic projectile points and ceramics, notably Newnan points from Harris Creek/Tick Island and fiber-tempered Orange pottery from Bluffton. As a result of his work at these and other sites in northeast Florida, Bullen (1972) was able to work out a developmental sequence for fiber-tempered pottery in the region that has now been shown to be inaccurate and has recently undergone an overhaul as a result of recent research (Sassaman 2003b). Bullen's investigations within the SJRV

have added considerably to the understanding of preceramic and early ceramic period sites, much of which is still relevant.

Research along the St. Johns River has been sporadic until the early to mid-1980s when Barbara Purdy began her work at Hontoon Island near Deland (Purdy 1987). Excavations into the saturated anaerobic deposits on the apron of 8VO202 produced an incredible array of preserved organic remains dating primarily to the St. Johns I and II periods, although evidence for an earlier preceramic Archaic occupation of the island was also encountered during testing to the west of Purdy's main excavation and at 8VO214 on the south end of Hontoon Island. Further work by Purdy at Groves' Orange Midden (8VO2601) on the eastern side of Lake Monroe, like Hontoon Island, produced an impressive assemblage of organic materials from submerged deposits (Purdy 1994). Groves' Orange Midden is primarily a Mount Taylor period site, with a significant Orange period component. Lastly, a suite of radiocarbon dates from reliable stratigraphic contexts was obtained and has provided a level of chronological control for the preceramic and ceramic Late Archaic than had existed previously (McGee and Wheeler 1994). Work carried out at Groves' Orange Midden represents a major contribution to Florida archaeology and the Mount Taylor and Orange periods specifically.

Research in the St. Johns is currently being conducted by Dr. Kenneth Sassaman and graduate students from the University of Florida. Several seasons of archaeological field schools at Blue Springs, Hontoon Island, and the Silver Glen Springs area are contributing substantively to the Mount Taylor and Orange periods and, to a lesser extent to the post-Archaic St. Johns cultures. Work on Hontoon Island

has included site reconnaissance survey to locate and identify new archaeological sites and better define the boundaries of those already known (Endonino 2003; Randall 2008; Randall and Sassaman 2005). Excavations at several sites on Hontoon Island have produced evidence for occupations dating to multiple periods from Mount Taylor to St. Johns II. Limited excavations have also been carried out at Blue Springs Midden B (8VO42). Most recently the University of Florida has been investigating sites on the southern side of Silver Glen Run, concentrating principally on the remnants of the massive shell deposits that once existed at the confluence of Silver Glen Run and Lake George but have been substantially reduced through shell mining. Despite the destruction wrought on the site, work carried out to date has begun to untangle the complex depositional episodes observed in Mount Taylor period midden ridges at this site as well as Orange and St. Johns period deposits in the vicinity exhibiting multiple superimposed living surfaces (Sassaman 2007). Work around Silver Glen is ongoing and part of a larger research program at the University of Florida in the SJRV.

Cultural Resource Management (CRM) projects undertaken within the SJRV also have contributed to the knowledge of this region. Because of the nature of compliance driven projects – meeting legislated requirements, statutes, and ordinances – their research goals typically diverge from those of the academy. However, the data they produce are nonetheless valuable. Much of the compliance archaeology carried out emphasizes the location of previously unrecorded sites and determining their extent horizontally and vertically. Situating these sites temporally also figures strongly into compliance-driven archaeology. Site surveys, some covering several thousand acres, have provided data germane to discussions of settlement patterns and changes in land

use through time (Austin et al. 2006; Endonino 2007a, 2008b). Site testing and mitigation projects also provide valuable information such as the presence of cultural features, larger collections of cultural material and zooarchaeological specimens that can be used to characterize site-related activities, revealing stratigraphic profiles which aid in the establishment of site chronology and allow for diachronic perspectives and comparisons, and the collection of organic materials that can be used for radiometric or Accelerated Mass Spectrometry (AMS) dating. Site testing and mitigation compliance projects occur less frequently than site surveys but can, if the work is framed with clear research questions addressing gaps in the knowledge base, provide valuable information. One such project within in the SJRV was the mitigation of the Lake Monroe Outlet Midden (LMOM) site (8VO53) at the northern end of Lake Monroe (ACI/Janus 2001). Excavation at this site yielded subsistence data, a diverse assemblage of material culture, and a series of radiometric and AMS dates; all associated with the Mount Taylor period. Of note is the fact that the largest lithic assemblage yet recovered in the St. Johns came from this site which includes an interesting number of microlithic tools previously unrecognized from Mount Taylor contexts.

Compliance driven work carried out by the Florida Division of Historic Resources on State owned lands included site visits to the Mount Taylor type site and Bluffton (Wheeler and Newman 1997; Wheeler et al. 2000). Work consisted of generating a topographic map of the Mount Taylor site along with stratigraphic profiles of looter trenches, providing a look at the internal structure of this site. Surface collections and a synthesis of extant collections was also made. Work at Bluffton was limited and consisted of producing a map of the site based on pre-shell mining conditions using old

aerial photographs in an effort to locate the position of the major site features. In addition, the work of Wheeler et al. (2000) produced a summary and overview of the Mount Taylor period, something not done since Goggin (1952).

Archaeological Context

Within the SJRV the prehistoric cultural sequence is represented from the earliest Paleoindian inhabitants of the late Pleistocene through the first European Contact and into the eighteenth century. In spite of the long history of this region, evidence for the presence of the earliest humans to enter the SJRV is not extensive. Not until the arrival of the Middle Holocene does significant evidence for prehistoric foragers in the SJRV begin to mount, literally, in the form of freshwater shell middens and mounds, marking the initiation of a way of life before the first appearance of pottery that archaeologists call Mount Taylor (Goggin 1952). Successive generations of pottery-making groups descended from Mount Taylor peoples continued to dwell within the SJRV and along the Atlantic coast, inscribing their presence on the landscape with monuments of shell and earth, much as their predecessors, but unlike them, they left behind recognizable ceramics of the Orange and St. Johns traditions. Here a review of the Middle and Late pre-ceramic Archaic, Mount Taylor culture, of the SJRV and the northeast coast of Florida is presented.

Middle Archaic (ca. 7500-5000 cal. B.P.)

The Middle Archaic of Florida witnessed continued change in both human and natural landscapes. Conditions progressively became wetter and “more and larger surface water sources were available” making previously less habitable environments more habitable while at the same time inundating some places that were previously inhabited (Milanich 1994:75). Hunter-gatherers occupied all or nearly all of the Florida

peninsula. Several areas that witnessed only sporadic occupation by earlier populations were occupied for the first time on a permanent basis during the Middle Archaic. Traditionally the St. Johns River and Atlantic lagoon (Milanich 1994:76) were thought to be two such areas. There is however evidence for Early Archaic groups in the SJRV as indicated by diagnostic projectile points belonging to the Bolen type found along the near-shore environments of Crescent Lake and Silver Glen Springs (Endonino 1996; Sassaman 2003a).

The Newnan Horizon represents the first widespread tradition of the Middle Archaic and is named after the distinctive Newnan's Lake point (often referred to simply as "Newnan" points) first defined typologically based on excavations at the site in north-central Florida bearing the same name (Clausen 1964). The Newnan Horizon largely refers to the Middle Archaic populations of north-central Florida though Newnan points are found throughout the Florida peninsula during this period and have even been identified in southern Georgia and, perhaps, as far away as Mississippi (Brookes 1999). Numerous specimens have been found in the SJRV (Clausen 1964), the Atlantic coast (Goggin 1952), the Tampa Bay area (Daniel and Wisenbaker 1987), the southwest Gulf coast (Beriault et al. 1981; Clausen et al. 1979); and scores of sites throughout north-central Florida. Several other stemmed bifaces such as the Hillsborough, Marion, Alachua, and Putnam appear to be related to the Newnan and were manufactured alongside them (Bullen 1975; Milanich 1994:76). Several radiocarbon dates place Newnan Points between 6500-5000 years cal. B.P. (Milanich 1994:76). Other than the stemmed bifaces just mentioned few other formal stone tools have been associated with the Newnan Horizon. With the possible exception of blade-like flakes that appear to

have been intentionally produced at the Newnan's Lake Site (Clausen 1964; Milanich 1994:80), the majority of stone tools associated with the Newnan Horizon are expedient flake tools and informal bifacial tools.

Other aspects of material culture have remained elusive though in a very few instances a portion of the organic component of the assemblage have come to light and without exception come from submerged contexts – specifically pond cemeteries. Pond cemeteries in south-central and southwest Florida have produced an array of wooden and bone tools typically not recovered from the lithic scatters that most often characterize Middle Archaic sites throughout Florida. Among the artifacts recovered are fire-sharpened wooden stakes, an oak digging stick, possible bow drill parts, antler tools with wooden hafts that appear to sections of an atlatl, bone pins and points, and a wooden tablet with a bird carved on one side (Beriault et al. 1981; Clausen et al. 1979; Milanich 1994: 80-82; Wharton et al. 1981). More importantly, pond burials provide information on a kind of mortuary practice that is represented in southern Florida only and is unique within the southeastern U.S. While most of the work on pond cemeteries occurred under salvage conditions, careful and thorough excavation at the Windover Pond site in Brevard County near Titusville has produced an impressive corpus of data on this practice as well as the material culture preserved in the anaerobic environment of the ponds (Doran 2002).

Middle Archaic groups are thought to have been small and highly mobile, moving widely across the landscape (Austin 1997). Social relations are believed to have been egalitarian and subsistence practices characterized by broad spectrum foraging. Rather than setting up a base camp and sending out smaller groups to procure food and other

resources to bring back to the base camp as did their Paleoindian and Early Archaic forbears, Middle Archaic peoples are believed to move in small groups across the landscape from resource patch to resource patch as food and firewood became depleted, essentially reifying Binford's (1980) forager-collector model. Likely variation existed across the landscape and there is no good reason to believe that the broad occurrence of a particular style of projectile point (Newnan) across the Florida peninsula that the people using them were part of the same group – they just used similar tool forms. Variation and difference between groups ought to be expected. In south-central Florida where pine flatwoods dotted with wetlands, larger lakes, and occasionally, a river, we might well expect a more mobile way of life due to the lower productivity of the environment. Along the St. Johns where abundant resources are concentrated, hunter-gatherers with a more settled way of life, or at least groups moving within a defined area, might be expected. Why can not both exist in the same peninsula? One possible bias influencing the perception of Middle Archaic groups as small mobile bands is the fact that many if not most sites from this period are small lithic scatters and less often larger base camps and production sites where the only material culture available for study are stone tools. A few examples noted above exist and hint tantalizingly at a more rich material culture and, perhaps, social organization, but the dominance of lithic scatters has to some degree limited the ways that these groups have been portrayed. Middle Archaic groups living outside the St. Johns interacted with the denizens of the river, or, alternatively, they visited and/or exchanged personnel since all of the stone used to produce bifaces and other lithic tools in the St. Johns ultimately originates elsewhere, and usually to the west in the area of the Green Swamp in Sumter, Pasco,

Polk, and Hillsborough counties as well as around Lake Panasoffkee (Endonino 2007b). Clearly Middle Archaic groups associated with the Newnan Horizon and the people of the river, Mount Taylor, were very much aware of each other and interacting regularly throughout the Middle and Late preceramic Archaic.

Mount Taylor (7300-4500 cal. B.P.)

Goggin (1952:39-40) established what is essentially the cultural historical sequence in use today in the SJRV and East Florida. He proposed four periods based on the earlier works of Clarence Moore, Jeffries Wyman, and Nels C. Nelson as well as his own work and that of his contemporaries. From earliest to latest the periods proposed by Goggin are: Mount Taylor, Orange, St. Johns I, and St. Johns II. Mount Taylor derives its name from a site (8VO19) in Volusia County which, during Goggin's time, provided the most available information on the period, much of it from Moore's work in the SJRV and other limited excavations in the early- to mid-twentieth century. As originally conceived (Goggin 1952:40-43), Mount Taylor is the earliest occupation of the St. Johns River and encapsulates the entirety of the preceramic era from Paleoindian until the appearance of fiber-tempered pottery. Some definitions of Mount Taylor restrict it temporally to the preceramic Late Archaic associated with shell mounds and middens of the SJRV and Atlantic coast of northeast Florida (Milanich and Fairbanks 1980:147; Sipe et al. 2006) beginning some time around 6900 cal. B.P. Milanich (1994:88) argues for the inclusion of Middle Archaic sites in Mount Taylor and this same sentiment is echoed by Wheeler et al. (2000). Wheeler et al. (2000) go further, however, and suggest that the criteria for Mount Taylor be amended from preceramic to pre-pottery. This change was precipitated by the recovery of baked clay objects at Groves' Orange Midden (8VO2601) in strata predating the first use of ceramic

vessels. Although the definitions of these researchers have minor differences between them, they tend to agree on the core features used to identify Mount Taylor: its geographic extent, the absence of pottery, the presence of shell middens and mounds, and the occurrence of the distinctive Newnan's Lake point (and the related Hillsborough also).

Here, the definition and scope of Mount Taylor is reexamined and expanded somewhat from those offered previously (McGee and Wheeler 1994; Milanich 1994; Milanich and Fairbanks 1980; Wheeler et al. 2000). Mount Taylor, as here conceived and employed, are the pre-pottery Middle and Late Archaic groups of hunter-gatherers living in the St. Johns River basin and adjacent Atlantic coast that is associated with the shell middens and mounds (and non-shell bearing sites as well) found in these locations, having similar/shared material culture, and subsistence practices emphasizing the extensive use of aquatic resources. Below an outline discussing Mount Taylor is presented and addresses chronology, origins, settlement and subsistence, material culture, and ceremonial behavior. Lastly, a new phase of Mount Taylor, the Thornhill Lake Phase (TLP) is proposed based on the research presented in this study.

Chronology

Identifying and dating Mount Taylor sites, or components within sites, have traditionally been based on the occurrence of diagnostic projectile points, the absence of pottery, or both. Until early-1990s few radiocarbon dates from Mount Taylor sites existed (Bullen and Bryant 1965; Jahn and Bullen 1978). Work at Groves' Orange Midden provided substantially more dates and dates of a greater time depth than ever before, spanning from very near the earliest manifestations of Mount Taylor through to

the Orange period and the appearance of fiber-tempered pottery (McGee and Wheeler 1994). Additional dates from CRM projects (ACI/Janus 2001) and academic research (Endonino 2008b, this study; Randall and Sassaman 2005, Randall et al. 2007; Sassaman 2003c) have significantly enhanced the radiocarbon database for Mount Taylor in the SJRV. Dates from costal contexts are few and this region and significantly underrepresented.

Before discussing the radiocarbon dates for the SJRV and the Mount Taylor chronology, a word on the radiocarbon dates is in order. Dates discussed in this study are calibrated to calendar years before present (cal. B.P.) unless otherwise stated. Uncorrected radiocarbon ages presented by other researchers were calibrated using Calib5.0.1 (Stuiver et al. 2005). The decision to discuss Mount Taylor chronology in calendar years B.P. is motivated in large part to convey a sense of temporality in tune more with the human experience than the half life of radioactive carbon.

Mount Taylor begins at approximately 7300 cal. B.P. and lasted until the beginning of pottery manufacture some time at or around 4500 cal. B.P. (Figure 4-1). Overwhelmingly the dates available come from the SJRV with only four dates coming from the Atlantic coast and these, with one exception, are from near the end of the Mount Taylor sequence. Considerably more dates are available for the period from 6000-5000 cal. B.P. than from 7300-6000 cal. B.P. and thus the chronology for the latter is better represented. Part of this may be explainable due to the fact that the basal components of many Mount Taylor sites are not often reached during excavation and therefore are not sampled. Time and more research at Mount Taylor period sites may well push the origins of Mount Taylor back several hundred more years. Nevertheless,

four dates from 7300-7000 cal. B.P. are available and currently are the earliest known dates for Mount Taylor. These dates indicate clearly that one characteristic of the way of life associated with Mount Taylor and descendent populations, i.e. the exploitation mollusks and mounding of their shells, began quite early and suggests that the environment of the St. Johns River was such that it could support colonies of banded mystery snail (*Viviparous georgianus*), apple snail (*Pomacea paludosa*), and freshwater mussels (*Unio spp.*) early-on during the Middle Archaic.

Further consideration of the dates and evidence for mortuary monument construction, exotic stone objects in mortuary contexts, and an increase in exchange within and outside of the Florida peninsula at about 5600 cal. B.P. warrants a refinement and reconsideration of the Mount Taylor chronology. Changes proposed here are the products of research related to this study as well as a reexamination of the published literature. With this in mind, I propose that Mount Taylor be divided into Early Mount Taylor (EMT) and the Thornhill Lake Phase (TLP). Early Mount Taylor conforms to traditional definitions of the period. The date range suggested for EMT is 7300-5600 cal. B.P. based on the dates presented above. The TLP (5600-4500 cal. B.P.) is defined and discussed following the general Mount Taylor discussion at the end of this chapter. Although differentiated both EMT and TLP share numerous characteristics in spite of the fact that the latter possesses attributes that clearly distinguish it from what came before as well as after.

Origins

The origins of Mount Taylor culture is somewhat enigmatic. There is long-standing orthodoxy rooted in a model proposed by Milanich and Fairbanks (1980:150) that Middle Archaic groups were transhumant and seasonally mobile, moving between the

St. Johns River and the interior uplands of north and central Florida in order to exploit seasonally available resources in both areas (Clausen 1964:23, 36; Milanich and Fairbanks 1980:147, Hemmings and Kohler 1974:45). This model also contends that the St. Johns River was not occupied in any significant fashion until Mount Taylor peoples began to settle into the region to exploit aquatic resources that are believed to have been absent prior to 7000 cal. B.P., coinciding with rising sea levels between 7000-4500 cal. B.P. (Miller 1992:102). Once late Middle Archaic hunter-gatherers began to occupy the St. Johns on a permanent basis, settled village life is thought to have begun. Trips to the upland forests may have been made also to supplement riverine resources (Milanich and Fairbanks 1980:150). A transhumant pattern such as the one proposed for Mount Taylor at this time period is out of sync with trends in the greater southeastern U.S. for this period where populations tended to occupy smaller, more restricted band ranges (Amick and Carr 1996, Sassaman et al. 1988, Steponaitis 1986:372, Walthal 1980:58) and become increasingly sedentary (Brown 1985:224).

Challenges to Milanich and Fairbanks (1980) model began to emerge in the early 1990s (Russo et al. 1992, Ste. Claire 1990). The most significant challenge to the prevailing model of transhumance came from Russo et al. (1992). Using subsistence data, settlement patterns, site size and function, and the deconstruction of the previous model, Russo et al. (1992) effectively argue for a more permanent occupation of the St. Johns River and Atlantic coast by “unique and separate groups” by the Middle Archaic (Russo et al. 1992:106). Similarly, Ste. Claire (1990) argues against the idea that occupations of the Atlantic coast prior to the Late Archaic Orange period were not possible due to the absence of marine resources in sufficient quantity to sustain

populations. Data to the contrary obtained by other researchers were used to support this position and, contra the model of Milanich and Fairbanks (1980), occupations along the Atlantic coast during preceramic Archaic have been found (Ste. Claire 1990; Sipe et al. 2006). Seasonality data from several sites suggests that occupations were multi-season or year-round (Ste. Claire 1990:193).

From the preceding discussion, it seems fairly clear that the previous model of Archaic transhumance between the interior uplands, the St. Johns River, and the Atlantic coast has been shown to be in error. Wheeler et al. (2000:154-155) attempt to address the issue of Mount Taylor origins, but do little more than reaffirm the Milanich and Fairbanks (1980) upland origins model which, as discussed above, has been dismantled effectively by Russo et al. (1992) and Ste. Claire (1990). In view of this it seems appropriate to consider alternative explanations for the origins of Mount Taylor.

Adequate resources were present along both the St. Johns and Atlantic coast to support local populations. Russo et al. (1992) hypothesize that Mount Taylor culture may have originated along the Atlantic coast because of an assumed reliance on marine shell tools, shark teeth, and a well-developed fishing technology. Evidence such as this does not take into account the potential of local historical developments. Further muddying this issue is the inundation and destruction of sites along the Atlantic coast due to rising sea levels. The limited evidence for the occupation of the St. Johns during the Paleoindian and Early Archaic periods argues that it was not uninhabited prehistorically, but by the same token it can not be demonstrated that it was it extensively occupied. Evidence for Paleoindian and Early Archaic along the coast is nearly nil and often attributed to destruction due to inundation resulting from rising sea

levels. Nevertheless, Paleoindian and Early Archaic groups were in the SJRV (Neill 1964; Sassaman 2003a). This being the case it does not seem reasonable that either the interior uplands or the Atlantic coast along was the ancestral home of Mount Taylor culture and at this point I offer an alternative hypothesis for the origins of Mt Taylor.

Mount Taylor peoples along the St. Johns River and Atlantic coast, rather than having been migrant populations from the interior uplands or the Atlantic coast, may have developed *in situ* with a regional history spanning back several thousand years. Early occupations in the St. Johns attest to this (Edwards 1954; Ellis et al. 1994; Neill 1964; Sassaman 2003a). Undoubtedly more remains to be identified but issues of sampling bias and changes to the prehistoric landscape via geomorphological processes complicate matters. It would be naïve to assume that this significant piece of geography was ignored or neglected by prehistoric populations prior to 7300 cal. B.P. or that it was of only minor importance. A well adapted fishing technology could have developed *in situ* and as water levels in the St. Johns began to rise and productivity increased, the indigenous populations in this region no doubt would have learned how to make a living from the river, and would have excelled at it. In all probability the St. Johns was a productive and attractive region to prehistoric peoples, witnessed regular, long-term occupation, and gave rise to Mount Taylor culture at or around 7300 cal. B.P.

Settlement and subsistence

Mount Taylor settlement is strongly associated with shell mounds and middens of the St. Johns River, its tributaries, and the Atlantic coast – the most visible signs of their presence. Still, very little is known about their settlement system (Wheeler et al. 2000). If Mount Taylor populations living in the St. Johns were not seasonally transhumant as others have argued (Russo et al. 1992; Ste. Claire 1990), what did their settlement

system look like? One possibility is that Mount Taylor peoples, rather than moving from the St. Johns to the interior or coast, may have moved along the river, occupying several sites within a particular stretch of the river and exploiting adjacent wetlands and upland habitats. This is not to say that personnel from the St. Johns and Atlantic coasts did not move between coast and river, but it is unlikely that entire regional populations moved between these two areas. Sites without shell located in the adjacent uplands should also probably be included under the Mount Taylor rubric as well, provided that they produce evidence for their temporal affiliation in the form of diagnostic bifaces. All too often these are considered to be little more than temporally ambiguous lithic scatters that may or may not contain diagnostic artifacts. Nevertheless, Mount Taylor settlement patterns and land use remain an area open to study and debate as little is currently known.

Subsistence practices during the Mount Taylor period, in comparison, have received considerably more attention. A history of the subsistence research along the St. Johns and early models are reviewed by Russo et al. (1992) and offer several insights into the development of these early models and pointing out their weaknesses. Goggin (1952:67) notes that “the subsistence complex was apparently based on river-marsh habitat where extensive food in the form of fish, freshwater mollusks, numerous reptiles, wading birds, and other game.” Subsistence at Mount Taylor sites appears to have been geared toward broad spectrum foraging with aquatic resources playing a major role in the diet. How important shellfish were in the Mount Taylor diet has remained problematical. Cumbaa (1976) attempted to determine the importance of shellfish in the overall diet and ultimately concluded that terrestrial resources were more

important and that the contribution of shellfish had been exaggerated. Later, Russo et al. (1992) argued that snails and aquatic resources were indeed important in the diets of Mount Taylor period populations and that hunting and gathering were not merely supplemented by the exploitation of aquatic resources. Further, Wheeler and McGee (1994c) maintain that snails were a significant resource in the Mount Taylor diet and that fish and mammals were of approximately equal importance. Recent isotopic investigations of diet focusing on the inhabitants of Harris Creek/Tick Island and Windover has shown that among the inhabitants of Harris Creek/Tick Island shellfish did not constitute a large portion of the annual diet (Tucker 2009:13). What these isotopic data indicate is that the appearance of shell mounds during the Middle Archaic was not a result of changes in diet but may have had a social impetus.

In addition to the faunal resources used for food by hunter-gatherers in the St. Johns, a number of botanical resources have been identified. Newsom's (1994) analysis of botanical remains from Grove's Orange Midden revealed hickory nuts and acorns, prickly pear cactus, saw palmetto, maypop, wild plum, persimmon, blackberry, red mulberry, elderberry, and wild grape. Additionally, plants that may have contributed to the diet include starchy seeds, fresh greens, and starchy tubers (Newsom 1994:406). More recently, archaeobotanical analysis at the Lake Monroe Outlet Midden (8VO53) has shown that nuts, edible seeds, and fruits were collected and consumed (Ruhl 2001). Among these are the fruits of the sabal palm and sabal palmetto, greenbriar, sparkleberry, and blueberry and nuts such as hickory, pignut hickory, and acorn. Recent work at Salt Springs on the west side of Lake George at the northern end of the

Middle SJRV has produced evidence of well preserved botanicals including hickory nut, acorn, and squash seeds and rinds (Mike Russo, personal communication, 2009).

Research regarding Mount Taylor subsistence supports a broad-spectrum forager model with an emphasis on aquatic resources (Quinn et al. 2008; Quitmier 2001; Russo et al. 1992; Sassaman 2003c; Wheeler and McGee 1994c). Mount Taylor period peoples had at their disposal a variety of floral and faunal resources that they exploited. Most of the work done on Mount Taylor subsistence to date is site specific and studies at the regional level have yet to be undertaken, much less comparisons between the St. Johns and the Atlantic coast. Another area of research not yet broached is the comparison of sites of presumably different functions, i.e. base camp vs. short-term habitation. The potential to make substantive contributions remains to be made in these areas.

Material remains

Material remains from the Mount Taylor period has been described as simple and characterized by a “general scarcity of artifacts” and “few defined forms” (Goggin 1952:41). In comparison to the material culture inventory from interior sites, composed of a limited number of lithic tools and chipping debris, the material culture from Mount Taylor period sites is quite rich and work by Barbara Purdy and others at the Groves’ Orange Midden (8VO2601) has provided a very good picture of Mount Taylor material assemblages. Items of stone, shell, bone, wood, and cordage, as well as botanical materials, have been recovered from Mt. Taylor sites.

Stone artifacts attributable to the Mount Taylor period are composed largely of hafted bifaces (Goggin 1952:42). Hafted bifaces associated with Mount Taylor culture include the distinctive Newnan and Hillsborough types, as well as Putnam and Marion

during the Middle Archaic, and Levy and Culbreath during the Late Archaic. Some overlap in the use of Middle Archaic points with the Late Archaic likely occurred. Hafted drills and scrapers made from broken projectile points are also known (Endonino 1996). Bifacial cores, preforms (which may also be bifacial cores), utilized flakes, debitage, hammerstones, ground stone beads, coquina slabs, and bannerstones have also been recovered from Mount Taylor period contexts (ACI/Janus 2001; Goggin 1952:42, Wheeler and McGee 1994a). In spite of the inventory of lithic tools for the Mount Taylor period, there does not seem to be an emphasis on lithic technology or tools (Purdy 1994:390-392). Tools of bone and shell no doubt replaced stone tools for certain activities. A notable exception can be seen at the Lake Monroe Outlet Midden where a lithic workshop was identified west of the midden deposits and produced thousands of waste flakes, several production failures, a large assemblage of microliths and flake tools, and several discarded projectile points (ACI/Janus 2001). Bar none the Lake Monroe Outlet Midden has provided the largest and most comprehensive picture of Mount Taylor lithic technology to date.

Marine shell tools have been found in Mount Taylor contexts and are composed mostly of what may be termed cutting or chopping tools such as celts, adzes, gouges, and hafted “cutting-edge” tools (Bullen 1955, Goggin 1952:42, Wheeler and McGee 1994a). Wheeler and McGee (1994a) examined shell tools within a functional framework and assigned various forms to functional categories or complexes. Based on their analysis, shell tools were found to have performed a number of tasks such as woodworking, textile and leather working, food preparation, and personal adornment. Busycon receptacles, commonly called “dippers,” were recovered in Mount Taylor levels

dating to approximately 7000 cal. B.P. at Grove's Orange Midden. Many other examples of this artifact type have been recovered from sites in the SJRV and are believed to have functioned as cooking vessels as many display evidence of burning on their bottoms. Typical personal adornment items include beads, pendants, and pins. Beads are generally disk shaped or tubular in form and made from the columella and whorl of the *Busycon* spp. shell (ACI 2001; Goggin 1952:118). Shell pendants are also known (Endonino 2007a:98; Goggin 1952:122).

Bone was a medium used extensively by Mount Taylor peoples for both utilitarian and ornamental items. In general, bone "points" appear to be the most common bone tool in Mount Taylor period sites (Milanich and Fairbanks 1980:151). Bullen and Bryant's (1965) work at preceramic shell midden sites attributable to the Mount Taylor period along the St. Johns River produced a number of bone "pins, awls, and points." Similarly, Bullen (1955) reports finding worked bone, bone pins, and bone awls in Mount Taylor components at Bluffton. The best description of the bone tool assemblage made and used by Mount Taylor peoples comes from Wheeler and McGee (1994a) and an assemblage of ornately carved bone pins and beads was recovered from the Lake Monroe Outlet Midden (ACI/Janus 2001). Again a functional approach was taken in classifying these tools. Functional complexes and types include: textile and leatherworking complex (awls, splinter awls, ulna awls, needles, and fids), wood and bone working complex (gouges, splinter gouges, splinter graters, celts, splinter burnishers, and shark tooth implements), lithic working complex (antler tine pressure flakers), personal adornment complex (pins/fasteners, expanding head pins, beads, and decorated bone), and hunting/fishing implements (socketed antler points). Undoubtedly

the implements named in this typology could have performed a number of functions, but Wheeler and McGee's (1994a) study is a significant step in the study of Mount Taylor material culture.

The importance of Purdy et al.'s (1994) work at Grove's Orange Midden is again evident in their recovery of perishable materials so often absent from sites lacking the anaerobic preservation conditions of wet sites. A number of wooden items including tool handles, knife handles, net floats, stirring paddles, canoe paddles, pins, and a number of miscellaneous forms and debitage were recovered and furnish a view of the items created out of perishable media (Wheeler and McGee 1994b). Other perishable items such as textiles have as yet not been recovered from Mount Taylor period sites, but there remains the possibility. At other sites, albeit earlier, textiles and other perishable materials have been recovered. At the Windover site in Brevard County textiles were recovered in association with human burials dating to 9000-7700 cal. B.P. (Doran 2002; Milanich 1994:72). Although not specifically mentioned by Milanich, the presence of textiles suggests the existence of other material items such as cordage, netting, and woven mats. The Republic Grove's site in Hardee County contained a number of Middle Archaic burials in a small pond. The interments were accompanied by a number of lithic and bone tools, stone beads, shark teeth, cordage, and matting (Milanich 1994:82). Based on the presence of these perishable items at non-midden sites earlier than, and contemporaneous with, Mount Taylor sites, it is reasonable to assume that they were also part of the material culture of Mount Taylor peoples.

Watercraft (dugout canoes) was also a part of the Mount Taylor material culture and likely was central to communication and exchange. Several examples have been

found in the SJRV though only one can be assigned to Mount Taylor with any certainty. The DeLeon Springs Canoe has been dated to 6120-5660 cal B.P. (Purdy 1991:270, Table 1). Numerous Late Archaic canoes were exposed along the shores of Newnan's Lake in Alachua County in 2000-2001 during drought conditions (Wheeler et al. 2003). A total of 55 canoes were radiocarbon dated and range in age from 5660-2500 cal. B.P. The majority of the canoes are attributable to the Late Archaic, dating between 5300-3800 cal. B.P. Although outside of the SJRV, the numerous Archaic period canoes in a north-central Florida Lake speaks to their importance in transportation and subsistence even though it is landlocked.

Rather than being impoverished, Mount Taylor peoples possessed a material repertoire that was varied and included several media and a variety of forms. While stone, bone, and shell preserve well in the middens throughout the region, perishable items such as cordage, textile, and wood are infrequently found and this preservation bias in favor of the more durable items skews our picture of Mount Taylor material culture. Moreover, the lack of research dedicated to this period and the difficulties of large-scale excavations in shell midden also work against a fair characterization of the artifacts made and used by these hunter-gatherers. Biases in other areas, notably ceremonial behavior – i.e. monument-building and ritual – have conspired to portray Mount Taylor groups as simple foragers living a hand to mouth existence.

Exchange and interaction

Exchange networks were well established across the southeastern U.S. by the Middle Archaic (Jefferies 1996) and these served to connect groups both near and far to one another for several reasons including risk avoidance, information transfer, mate exchange, and the acquisition of items not readily available in the local environment,

some of which may have been wanted or needed, though the material culture may have served to underwrite the social relations between individuals and groups. Evidence for exchange within and without is found most convincingly during Mount Taylor and it is during the latter part of this period (TLP) that artifacts made of exotic stone originating from outside Florida find their way into the monuments and middens along the St. Johns. Among artifacts making their way into Mount Taylor period sites were bannerstones, pendants, and beads made of stone originating in the lower Midsouth and the Piedmont and Coastal Plain of Georgia and South Carolina (ACI/Janus 2001; Moore 1894c, 1894d; Sassaman 2004; Sassaman and Randall 2007; Wheeler and McGee 1994:372-373). Goggin (1952:51-53) failed to attribute the presence of these typically Archaic artifact types to the Mount Taylor period and instead included them into his Unclassified complex. Also making their way into the Unclassified complex are the sand burial mounds that produced these artifacts. The failure to link monument-building with Archaic artifact types colluded to impoverish the ritual life of Mount Taylor peoples in the minds of archaeologists. Exchange with populations within Florida also is evidenced by the occurrence of lithic materials within the SJRV originating from the western and central parts of the Florida peninsula (Endonino 2007b). Further evidence for contact and exchange with groups along the Atlantic or gulf coasts comes in the form of shark teeth and marine shell. Notable among the marine shells is the queen conch (*Strombus gigas*) which occurs only along the lower southeastern coast of Florida and the Caribbean. Contact and interaction with groups of north and west-central Florida is also evidenced by the presence of chipped stone artifacts and debitage that

originate in these areas, notably the Upper Withlacoochee River Quarry cluster (Endonino 2007b).

Ceremonial behavior

Symbolic and ceremonial behavior among prehistoric hunter-gatherer populations has long been neglected by hunter-gatherer researchers in Florida and the southeast in general. In recent years however, it has been shown that Archaic hunter-gatherers were engaged in purposeful monument construction (Piatek 1994; Russo 1991, 1994a, 1994b) which carries with it symbolic and ceremonial meaning. By and large the symbolic and ceremonial behavior discussed in this section deals with monument construction and the placement of burials in them as these are the only material manifestations of such behavior available to study.

Two general patterns for Archaic period burials have been identified; subaqueous pond burials and interments in shell and sand mounds. With the exception of the Windover site in Brevard County, no subaqueous burials are known in close proximity to the St. Johns River basin. Otherwise subaqueous pond burials are found in south-central and southwest Florida, occurring no farther north than Windover. While some researchers believe that there was a transition from mortuary practices focused on the interment of the dead in sub-aqueous pond cemeteries to interment in sand and shell mounds (Aten 1999), it could also be interpreted as regional or subregional variation in mortuary practice. Indeed, there seems to be regional differences in the location of interments during the Middle and Late Archaic periods. Sites located along the St. Johns are overwhelmingly in mounded contexts of shell, sand, or some combination of the two. On the other hand, sites located in south-central and southwest Florida occur

in water related contexts as exemplified by pond burials at Republic Groves, Bay West, and Little Salt Spring, contrasting markedly with the pattern in the St. Johns area.

Temporal differences are registered in the record of the SJRV in the burial practices of Mount Taylor groups. Generally speaking, early-on in EMT groups buried their dead in contexts characterized by mounded shell such as at the Harris Creek site (Aten 1999; Moore 1893). It has been suggested that burials in the context of mounded shell represent intentional mortuary mounds (Beasley 2008). Although there is some precedent elsewhere in the southeast (Claassen 1992) for such practices these claims are viewed with skepticism and doubt (Milner and Jefferies 1998). In Florida specifically, apart from Bullen's (Jahn and Bullen 1978) work at Harris Creek and Aten's (1999) reassessment of that same work, no modern archaeological investigations have been undertaken to determine whether or not the emplacement of burials within mounded shell contexts indicates that these shell mounds were constructed for the explicit purpose of interring the dead. Later during the TLP burials were occurring in contexts of mounded sand as exemplified at Thornhill Lake, Tomoka Mound 6, and Bluffton Burial Mound (Moore 1894c, 1894d; Piatek 1994; Sears 1960). Shell zones also may be present in these sand mounds as capping layers. Regrettably too few mortuary sites of a mounded character have been dated and other known and suspected Mount Taylor period mortuary mounds are not easily attributed to either EMT or TLP. What differentiates the burial in monuments contexts between EMT and TLP are the deliberate construction of mortuary monuments during the TLP and the media of their construction – sand versus shell.

With the presence of regionally different patterns of mortuary behavior it is tempting to suggest that this is a reflection of different hunter-gatherer groups asserting ethnic identity and territorial claims through their burial practices. The interment of the dead in cemeteries carries with it implications regarding the level of social complexity and territorial behavior of social groups (Claassen 1996:246). According to Rowley-Conwy (2001:44) hunter-gatherers displaying territorial behavior “sometimes bury their dead in cemeteries where non-territorial hunter-gatherers do not.” Thus, finding cemeteries attributable to hunter-gatherer populations likely indicated a group or groups displaying territorial behavior. Additional support for territorial behavior may be found in the presence of violent trauma and death among Mount Taylor period skeletal populations. Numerous instances of such trauma has been observed for hunter-gatherers throughout the southeast and Florida (Aten 1999, Claassen 1996, Milanich 1994:82).

Ritual behavior associated with mortuary practices has been explored by Aten (1999) in his reexamination of Bullen’s 1961 Harris Creek (Tick Island) excavations. Six ritual behaviors are identified and include: indication of rank and status, correct behavior toward spirits, body preparation, feasting, burial, and beliefs about the near and long dead. Variation in burial practices between and within the two primary mortuary areas at Harris Creek, as well as the presence of artifacts with some burials, is interpreted as possible indications of rank (Aten 1999). While a slippery subject, correct behavior toward the spirits of the dead may be seen in the storage of bodies and special preparation of the graves themselves. Related to the previous point is the actual preparation of the bodies of the dead for burial which may have included defleshing and

storage in a charnel house prior to burial. Similarly, the tightly flexed bodies found in some graves may signal wrapping, drying, and storage prior to burial. Bullen (Jahn and Bullen 1978) suggests the presence of a charnel house, and this is confirmed by Aten (1999:180) based on the presence of posthole patterns, flexed burials, and scorched bone in some burials, which further implies the storage of burials as well as defleshing or dehydration prior to burial. Although the evidence for feasting at Harris Creek is weak, there is some evidence which would seem to indicate ritual feasting associated with interment episodes. A black organic zone composed of shell, animal bone, charcoal, sand, and black residue was documented during Bullen's 1961 excavations and has been interpreted as being the possible location of feasting associated with interment ritual or else is the remains of food offered to the dead (Aten 1999). Burial practices at Harris Creek indicate possible status differences between members of the population as indicated in differences in burial preparation. While material evidence for status differences and the presence of status items is lacking, such evidence present in burials from the Thornhill Lake Complex where individuals excavated by Moore (1894d) were found with numerous shell and stone beads as well as several bannerstones. The presence of items such as these in mortuary contexts may be suggestive of some level of achieved status, especially when individuals without such items are also present in the same mounds. Food offerings and the ritual use of fire in burial pits is also viewed by Aten (1999) as evidence of ritual associated with burial.

Recent isotopic investigations by Bryan Tucker (2009) on burials from Harris Creek/Tick Island have provided new insight into Mount Taylor mobility, diet, and monument construction. Tucker's work has shown that the SJRV was occupied during

the winter and spring while the coast was occupied during the summer and fall, at least by a segment of the burial population. Regarding diet, carbon and nitrogen isotopes indicate that there is no evidence for an intense use of riverine resources but that a moderate amount of riverine resources were part of the overall diet. Such a conclusion is contrary to traditional views of riverine resource use, particularly shellfish. Tucker's data show that shellfish did not constitute a significant part of the Mount Taylor diet at Harris Creek/Tick Island. This, along with the presence of individuals in the Harris Creek/Tick Island mortuary who grew up outside the SJRV, call into question the interpretation of monuments as territorial markers. Tucker (2009:13) interprets these lines of data as indicating that monuments provided a place and context for contact between different groups in a wider network of connected groups.

In addition to mortuary mounds, monuments of shell also have been documented along the St. Johns River (Randall and Sassaman 2005). Research by the University of Florida at the Hontoon Dead Creek mound (8VO214) revealed evidence of the intentional construction of a ceremonial mound of shell, some of which was mined from older deposits located within a prograding cypress swamp, and included a number of large concretioned masses of shell which were used to shore up the slopes of the mound during construction. In addition to the utilization of older shell deposits as construction media, excavations also revealed that very little in the way of faunal remains or artifacts were present within this monument – exactly the opposite of what would be expected if it was the result of purely quotidian activities related to daily subsistence and maintenance activities. Additionally, work at Live Oak Mound indicates that it too is an intentional construction. Recent radiocarbon dates show that it was constructed over a

short period of time (Kenneth Sassaman, personal communication, 2010), exactly the opposite of what would be expected if it were the result of purely quotidian domestic subsistence remains, a fact supported by Tucker's (2009) research discussed above. Other such shell monument sites may well come to light with additional research within the SJRV.

Thornhill Lake Phase (5600-4500 cal. B.P.)

The TLP of Mount Taylor is marked by the appearance and persistence of a sand mortuary mound tradition in northeast Florida. Along the St. Johns River and Atlantic coast a number of monuments are known and have been suspected as being early and their true antiquity has come to light in recent years (Aten 1999; Endonino 2003, 2005, 2007a, 2008b; Mitchem 1999; Russo 1994a, 1996; Piatek 1994; Wheeler et al. 2000). Their recognition emerged in tandem with an acknowledgement of the existence of Archaic mounds and the resultant research in this area (Russo 1994a, 1994b). Of interest is the fact that John Goggin (1952:51-53) identified what essentially is the TLP when he described his Unclassified complex. Goggin's creation of an Unclassified complex is a result of the prevailing cultural-evolutionary paradigm holding sway at the time, which precluded the possibility of monument construction during the Archaic period. The presence of artifacts that Goggin knew were found in Archaic contexts elsewhere in the southeast was not sufficient evidence to convince him, nor was Moore's (1894a, 1894b) or Douglass' (1882) reports of a lack of pottery in mounds producing bannerstones and other ground stone artifacts. He interpreted them instead as heirlooms curated and buried by St. Johns I peoples.

Construction of mortuary monuments is the first of two primary criteria for defining the TLP. Evidence of this phase comes from several sites consisting of single mounds

and mound complexes. The chronological placement of these monuments has come to light through the several recent radiocarbon dates and have been used to establish the chronological thresholds for this phase. The TLP spans the transition from the end of Middle to Late Archaic, ending prior to the first appearance of fiber-tempered pottery. Several radiocarbon dates have been obtained from Thornhill Lake, Bluffton Burial Mound (8VO23), the Tomoka Complex (8VO81) and Harris Creek. Harris Creek/Tick Island (8VO24) may represent an ancestral form of what would later become the TLP. Monument construction at Thornhill Lake begins by approximately 5600 cal. B.P. at the earliest and ends at the latest by 4500 cal. B.P. These dates serve as a fairly good bracket for early mortuary mound construction. A recent date on human bone from the primary central burial at the base of the Bluffton Burial Mound (8VO23) produced a date of 4798 +/- 30 rcybp or 5660-5470 cal. B.P. (Bryan Tucker, personal communication, 2007) and fits well into the temporal framework for mound-building established at Thornhill Lake. Coastal Mount Taylor monument construction at the Tomoka Complex is the youngest of the known mound dates ranging between about 4800 cal. B.P. to 4450 cal B.P. Thus it would appear that, based on the dates from documented Mount Taylor mounds, this practice spans the time period from 5600-4500 cal. B.P. and is therefore a good indicator for the time range of the proposed TLP.

Supporting evidence for the temporal span of the TLP comes from the bannerstone types recovered by Moore (1894c, 1894d) at Thornhill Lake. A single Southern Humped bannerstone was found in Mound A. Southern Humped bannerstones date from 5500-5200 cal. B.P. and their temporal placement and association with mortuary contexts has been demonstrated by excavations at Stallings

Island, Georgia (Sassaman and Randall 2007). Three examples of Southern Ovate bannerstones have been recovered from Mound B at Thornhill Lake and indicate a slightly later date of construction for this mound which, based on the chronological position of this bannerstone type falls between 5200-4700 cal. B.P (Sassaman and Randall 2007). Similarly, the recovery of three Wisconsin Winged bannerstones from Mound A, which are contemporary with Southern Ovate types, also confirm the construction and use of both Mounds A and B from at least 5200-4700 cal. B.P. A.E. Douglass (1882) also recovered Wisconsin Winged and Southern Ovate bannerstones from Mound 6 at the Tomoka Complex, further corroborating the association of monument construction during the period from 5600-4500 cal. B.P.

Several other candidates for inclusion in the TLP have previously been identified in the SJRV and the Atlantic Coast. Among those in the St. Johns are Orange Mound, Persimmon/Baxter, DeLeon Springs, and North of Lake Monroe. One possible candidate along the Atlantic coast is Marineland Mound C. The presence of burials and alternating sand strata lacking pottery at Orange, Persimmon/Baxter, and DeLeon Springs make these three the best candidates of those listed. North Lake Monroe lacked burials but also produced no pottery or other artifacts to suggest its age and must therefore remain only a possibility at best. Marineland Mound C contained contact period and St. Johns period burials but a number of burials at the base of the mound were found without pottery and were buried on localized, intentionally prepared beds of oyster shell, a practice that sounds strikingly similar to what has been observed at Gauthier, where Archaic burials in the cemetery were placed in pits lined with freshwater snail shell. This site has since been destroyed and any possibility to

reevaluate or investigate the possibility that it represents an Archaic burial mound have long since past. Fortunately, the best candidates in the St. Johns River Valley are extant and may provide future researchers with an opportunity to evaluate them.

In addition to mound-building, there is an accompanying increase in exchange within and without Florida. Extraregional exchange is the second defining criterion for the TLP and is marked by the presence of exotic stone artifacts from other parts of the southeast and includes bannerstones, ground and polished stone beads, and pendants. Artifacts fashioned from exotic materials are found in the monuments and frequently are associated with burials. Two sites demonstrate this most convincingly: the Thornhill Lake Complex the Tomoka Complex. Similar items have been found at the Coontie Island site in St. Johns County south of St. Augustine and though there is no evidence of mounds or midden associated with this site, the presence of bannerstones and stone beads as well as over 100 Newnan points, some of unusually large size, demands its inclusion in the TLP.

An increase in the scale of biface production, an intensification of production for exchange within peninsular Florida, and perhaps without, rather than purely domestic use is registered in the archaeological record at this time. Exchange is indicated in the archaeological record by increased diversity in lithic raw material sources in assemblages from this period within the St. Johns River Valley (Endonino 2007b). Mobility too can result in assemblages with lithic raw material types and sources from numerous and disparate sources but this assumes that travel across the landscape to these sources is unrestricted. An increasingly populated and socially diverse landscape during the late Middle and early Late preceramic Archaic would have impinged on the

ability of groups or individuals to travel unfettered across the social and natural landscape. This fact along with other evidence suggestive of exchange within and without Florida during this period lends greater weight for exchange as the mechanism for bringing toolstone into the SJRV and eastern coastal Florida though direct procurement too likely occurred and was facilitated by affinal, consanguinial, or fictive kin and exchange relationships. Supporting evidence for this can again be seen in Tucker's (2009) isotopic studies documenting the presence of non-local individuals within the SRJV. The presence of these individuals shows that existing alliances facilitated the presence of people as well as items of material culture made from materials originating outside the SJRV.

Newnan bifaces from Coontie Island may represent a cache of items intended for exchange, an inference supported by the sheer number of bifaces and the fine craftsmanship and unusually large size of many specimens (Clausen 1964). Other caches of bifaces associated with this period have been found and likewise speak to production for purposes other than domestic use. Similar behaviors have been observed elsewhere in the southeast during the late Middle Archaic, notably the Benton Interaction Sphere of the Midsouth centering on the Tennessee River (Johnson and Brookes 1989).

Apart from the construction of mortuary monuments and the presence of increased exotic artifacts from outside of Florida, the basic lifeways and material culture of Mount Taylor people during the TLP appears on the face of things to be much the same as what preceded it and what came shortly afterward. The sudden emergence of sand mortuary monument construction and its equally rapid disappearance speaks to the fact

that this cultural elaboration is a punctuation in what seems to be a relatively stable adaptation to the riverine and marine/estuarine environments of the St. Johns River and coastal northeast Florida and speaks to the importance of local historical developments, trajectories, and histories of interactions between neighboring groups. Whereas the environment and lifeways appear stable, the fact that sand mound-building arose and declined against this backdrop of apparent stability speaks to the importance of historical developments in the transformation of hunter-gatherer lifeways during the preceramic Middle and Late Archaic in the northeast Florida and the SJRV.

Summary and Conclusions

The aim of this chapter is to introduce the SJRV and its inhabitants during the Mount Taylor period in order to provide a context for the chapters that follow. Beyond giving a basic familiarity with Mount Taylor, this chapter seeks to bring to the fore those aspects of Mount Taylor culture that are most relevant to this study, namely monument construction and ritual, exchange and interaction, and chronological issues that bear on the former. Mount Taylor culture was not static but did in fact witness change. A shift from mortuary and non-mortuary monumental architecture characterized by shell to a mortuary specific architecture mainly composed of sand is registered. This shift, in addition to an increase in the presence of non-local items of material culture, particularly those made from materials originating outside of peninsular Florida, are the two criteria for defining the TLP discussed above. Thornhill Lake in particular furnishes evidence that documents these changes and patterns. In the following chapters the archaeology of the Thornhill Lake Complex is introduced (Chapter 5), excavation results and interpretations are discussed (Chapter 6), and the materials recovered is presented (Chapter 7).

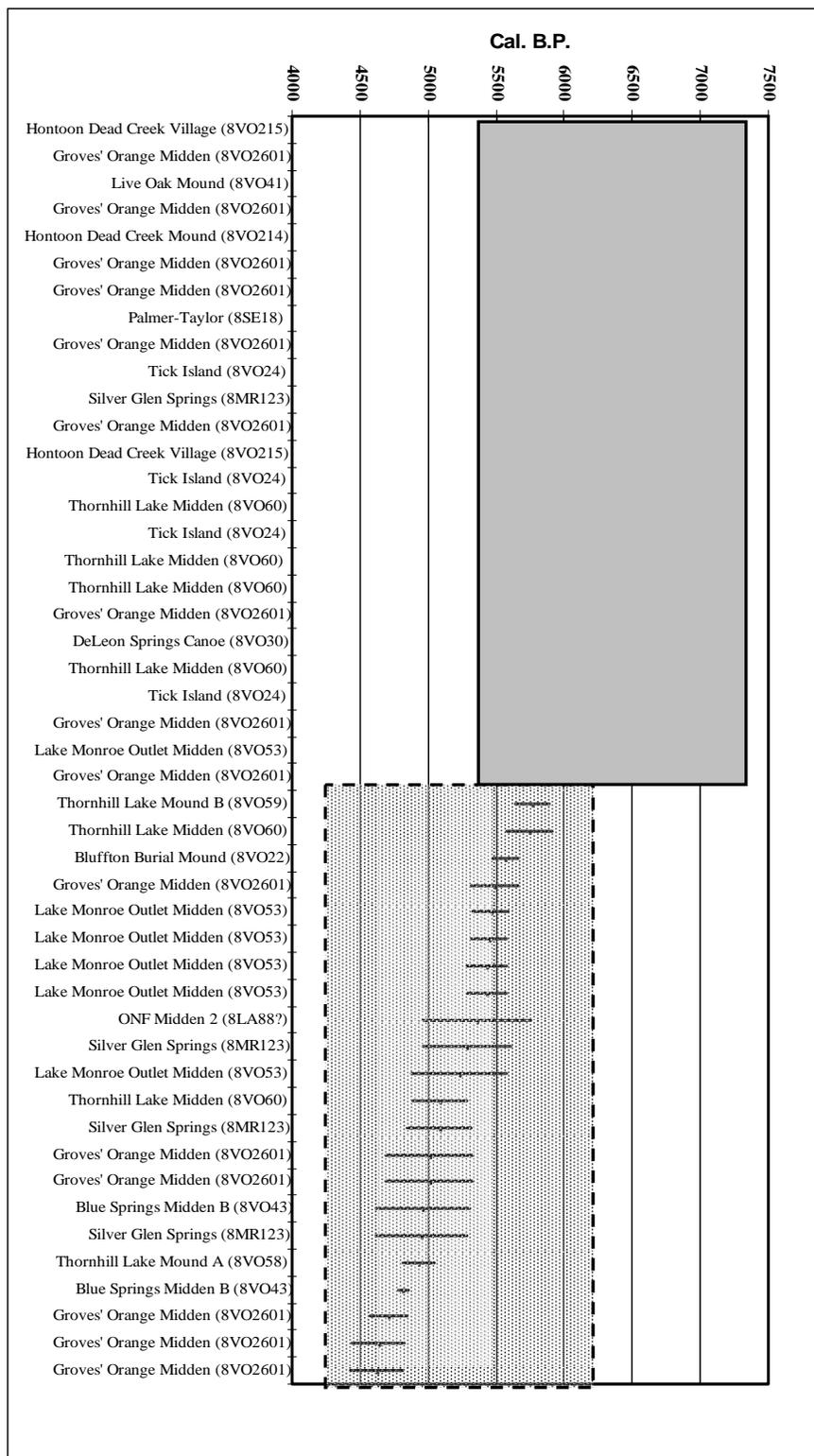


Figure 4-1. Mount Taylor radiocarbon chronology for the St. Johns River Valley. Solid line box represents Early Mount Taylor dates, dashed line box represents Thornhill Lake Phase dates.

CHAPTER 5 THORNHILL LAKE – HISTORICAL PERSPECTIVES AND PREVIOUS RESEARCH

Background information related to historic investigations at Thornhill Lake is offered in this chapter and serves to summarize and present the existing corpus of data for the site and provide context for future discussions. Moore's efforts are the most extensive prior to the current research and provide data and observations that are relevant and augment these efforts. Moore's work provides the only data and observations on the nature of burials, stratigraphic sequences for the mounds, and material culture associated with mortuary ritual. Four sections make up this chapter. The first provides a summary of the mid to late-nineteenth century investigators who visited or worked at Thornhill Lake. The second presents and discusses Clarence Moore's work. Included are a summary of his work, a description of site features, stratigraphy and chronology, an analysis of burials, and an accounting and analysis of the artifacts he recovered. The data for this section is derived from Moore's original field notes, drafts of his publications, and his published works. In the last two sections the history of archaeological investigations post-1900 and the place of Thornhill Lake in the archaeological literature are presented, respectively.

Early Investigations at Thornhill Lake

Unlike many of the more notable sites along the St. Johns River, the mounds and midden at Thornhill Lake are not mentioned in eighteenth century accounts of naturalist Daniel Brinton or in the writings of John or William Bartram. These ancient tumuli apparently went unnoticed or were deemed unworthy of comment and it was not until the last quarter of the nineteenth century that any mention or record of investigations of

any kind is available in the published literature. Below a brief review of the early visitors and investigators who came to Thornhill Lake is presented.

Captain Tom Reeves and Jefferies Wyman

The earliest published reference to Thornhill Lake comes from the April 23, 1873 edition of a New York newspaper called the "*Weekly Sun*." Although penned anonymously, the author's identity is likely the noted New York journalist and politician Amos Jay Cummings (Milanich 2002:363). The reference to Thornhill Lake appears in an article describing various mounds and middens in east-central Florida but focusing on Turtle Mound along the Atlantic Coast in southern Volusia County. Similar articles were published in the mid-nineteenth century describing Florida's untamed wilderness, its abundant wildlife, and the health benefits of its climate. Among the tales of old, wild Florida, Cummings provides descriptions of the middens and mounds of the St. Johns River. Milanich (2002:362) states that the shell and earthen mounds were thought of as "novelties to be marveled at" by the visitors and if an individual was so inclined "to be dug to find relics and human skeletal remains." Such was the case at Thornhill Lake.

Cummings refers to "two Indian mounds on the right bank of the St. Johns, just above Lake Monroe" (a description which bears a striking resemblance to Wyman's [1875] below), where Captain Tom Reeves of New York "has spent eighteen winters in Florida to avoid suffering from asthma." According to the article, Reeves had "dug over these mounds for hours" and recovered "[a]rrowheads and beads in profusion, but nothing else but bones." Based on descriptions of the site's location and the artifacts recovered, Milanich (2002:374) indicates in a footnote that the site described in the article is possibly Thornhill Lake.

Judging from the location of the site as described by Cummings, and considering Milanich's (2002) interpretation, it seems very likely that the site is Thornhill Lake. Further, Cummings description of the artifacts found by Reeves – beads and “arrowheads,” are in accord with the material culture recovered by Clarence Moore nearly two decades later. Moore (1892a:88-89) also describes the surfaces of the mounds as having been “scratched into superficially” and in all probability is the handiwork of Reeves.

The next reference to Thornhill Lake comes from Jefferies Wyman (1875:44). Wyman does not provide any discussion of the site, but it appears on a map of sites visited. Thornhill Lake is simply listed as “two mounds and midden below Black Hammock” (Wyman 1875:44). While this description is vague, it seems to agree with the primary physical features and geographic position of the site and, as noted above, is very similar to the location of the mounds described in Cummings' article. There is no clear evidence that Wyman conducted any excavations though it is possible that he did visit the site or, at the very least, was made aware of its presence by the areas residents. One tantalizing clue that Wyman did visit the site can be found in Goggin (1952:92). Goggin lists materials from this site in collections at the Peabody Museum at Harvard and provides their accession numbers. Although only speculation, Goggin's attribution of this site to the St. Johns I and II periods, in spite of the presence of Archaic period artifacts such as bannerstones and ground stone beads, is likely due to the presence of St. Johns Plain and Check-Stamped pottery which occurs frequently in the midden deposits nearest Thornhill Lake. Possibly St. Johns ceramics are present in the

Peabody Collections. Attempts to contact the Peabody have been made but were unsuccessful.

Clarence Bloomfield Moore

Clarence Bloomfield Moore conducted the first significant archaeological work at Thornhill Lake and made two visits. The first was in February 1892 and he devoted three days to excavating in both mounds and the midden deposits (Moore 1892a:88-92). The first episode of work was published in *Certain Sand Mounds of the St. Johns River Part I* (Moore 1894c:88-89). Several large trenches and pits were dug into both mounds. Five smaller pits were excavated into the shell deposits located to the west of the mounds at various locations (Moore 1892a:88-90). No mention of the excavations in the midden appears in either of the two publications dealing with the work at this site. Moore (1894a:89) did not feel that his effort during the first visit was sufficient to understand these mounds and he returned nearly two years later to conduct additional work.

During the second visit in January of 1894, Moore spent a total of eight days digging into Mounds A and B. He does not specify the location of his units or the extent of his work at the site except to say that his workmen “demolished” Mound A and that only the central part of Mound B was excavated (Moore 1894b:167). Much of Moore’s discussion of the second episode of field work concerns the burials he encountered and the artifacts that accompanied them.

Subsequent to Moore’s excavations there is no record in the published literature for additional work by archaeologists. Although the reasons why more illicit digging and professional excavations did not occur at Thornhill Lake may never be known, it may be due to Moore’s (1894d:167) claims of “total demolition” of Mound A. Such a statement

may indicate that he no longer felt that there was anything there worth digging up. He could also have been trying to deter further digging into the mounds by others and was known to look unfavorably on the practice of mining archaeological sites for artifacts to sell on the antiquities market (Milanich 2000).

Clarence B. Moore's Excavations at Thornhill Lake

Of all the explorers and investigators to visit Thornhill Lake in the nineteenth or twentieth centuries Clarence Moore's work at the site is the most substantial and has provided abundant information, both documentary and in material culture. Moore kept field notebooks containing the record of his work at sites throughout the southeastern United States. His original notebooks and microfilm copies formerly were in the collections of the Huntington Free Library, Bronx, New York. In 2006 they were acquired by Cornell University and are now part of the Cornell University Library's Rare Manuscripts Collection. Two sets of notebooks were kept by Moore. Field notes were written from in-field observations into "small" notebooks and drafts of his publications were written into "large" notebooks in an edited narrative form. The field notes contain important information that, in a few instances, is omitted in the draft versions, final publications, or both. Such differences between the field notes, draft manuscripts, and the final publications allow some insight into the evolution of Moore's thoughts regarding this site. In the remainder of this section Moore's work is summarized and reexamined in order to provide historical perspective, summarize the past work and findings, and present new insights - setting the stage for later discussions and providing a context for findings and interpretations presented in Chapter 6.

Description of Site Features

Moore provides a relatively complete and accurate description of Thornhill Lake and its primary features. The site is described generally as consisting of “shell deposits and two mounds of sand” (Moore 1892b:62). The shell-bearing deposits are described as “shell fields” with “eminences” (Moore 1892a:88). Although referred to as a shell field, implying a lack of relief, topography is apparent in Moore’s use of the terms “eminence”, “crescents”, “ridges”, and “crescent ridge” (Moore 1892a:88-89). Three shell ridges are discussed and described by Moore but he never fully articulates their spatial relationship. Two shell ridges are described as extending north of Mound B and running approximately 100 meters to the north north-west and measuring from 20 to 30 meters wide (Moore 1892a, 1892b; Newman 1998). West of the mound is a crescent-shaped ridge that has a number of “eminences” along its length (Moore 1892a). Both of the mounds and the two shell ridges north of Mound B are described as being in-line on a roughly north-south axis.

Mound A is the largest and southernmost of the two mounds. Moore (1894c:88) describes the mound as round, “symmetrical in shape” with “a circumference of approximately 425 feet” measuring “approximately 11 feet in height” with a “cone-shaped . . . flat, summit plateau.” Mound B is located 50 yards north of Mound A. It is smaller in size, measuring 8 feet, 10 inches in height with a circumference of 295 feet (Moore 1894c:89). Both mounds are built atop a shell base referred to as both a “mound” and “heap” by Moore (1892a:97, 1892b:64).

Fieldwork

Although outlined above, a more detailed consideration and accounting of Moore’s field work is presented here. All told, 11 days were spent working at the site. The initial

round of excavations was brief, lasting only three days. The first visit saw roughly equal effort excavating in the shell midden and both mounds. Upon returning to Thornhill Lake Moore spent the majority of his time “demolishing” Mound A and excavating the center of Mound B (Moore 1894b:167).

The first visit

Moore left the town of Sanford on the St. Johns at 1 PM Friday February 26th 1892 and headed south, turning east into “Thornhill Creek” about a half a mile below the entrance to Lake Jessup. Traveling about a mile up the creek Moore entered Thornhill Lake and tied up for the night (Moore 1892b:27, 29). Moore’s field notes indicate that he spent three days at the site, from Friday February 26th through Sunday February 28th (Moore 1892:88). The travel log indicates that they arrived late in the afternoon and tied up for the night on February 26th without having done any work (Moore 1892:27, 29). The following day, Saturday February 27th, was spent “at work on the shell heaps and mounds” (Moore 1892b:29). February 28th, was spent working on the “burial mound” which refers to Mound A. The weather was favorable, cool and bright in the morning and becoming overcast and remaining cool in the afternoon and evening and continuing on into the following day. He departed Thornhill Lake Monday February 29th and headed south to Black Hammock.

Moore’s attention first turned to the midden. He placed his first pit, Excavation 1, “on [the] mound in [the] center of [the] crescent” (Moore 1892a:88). This excavation measures 9 x 5.5 feet and 3 feet in depth, converging toward the bottom. A smaller pit within Excavation I was initiated at about 3’ below surface and reached water three feet further down. No indication is provided whether or not the bottom of the midden deposit was reached. Excavation likely halted upon reaching the water table and ended while

still in midden. Pottery was observed in the “first foot only” (Moore 1892a:88). A “stone core” was found one foot below surface and a bone awl, “unbroken,” was also found but no mention is made of its depth of recovery. Faunal bone was present as were thermal features such as hearths or “fireplaces” (Moore 1892b:63). Determining the location of Excavation 1 is somewhat problematic due to the lack of clarity in Moore’s description. When referring to the crescent-shaped midden west of the mounds it is not clear if he is referring to the crescent formed by the two ridges or something else. Should the latter be the case, Excavation 1 would be located somewhere in the vicinity of Mound B. Unfortunately, the evidence for Excavation 1 has not been confirmed and thus its whereabouts is currently unknown.

Excavation 2 was placed on the “western extremity of [the] ridge facing [the] lake and measured 5 x 5 feet and 6.5 feet deep “converging” and ending in shell deposits. The matrix in this excavation is described as being composed of approximately one foot of “loam and shell” underlain by shell deposits “with a loose mixture of sand” (Moore 1892a:89; 1892b:63). Faunal bone was infrequently observed by Moore and he notes the presence of “fecal matter.” Pottery is again reported to come from the first foot of the deposits and no other artifacts are indicated as having been recovered (Moore 1892a:89). It is worth mentioning that Moore omits the occurrence of pottery in this excavation in a draft of his first report though the reasoning behind it is not apparent (Moore 1892b:63). The location of Excavation 2 may be somewhere in the vicinity of the landing at the lake’s edge since this appears to be at the westernmost shell deposit and is a prominence with approximately two meters of relief. No evidence of Moore’s

excavation unit in this location has been observed and likely has been destroyed through shell mining operations during the twentieth century.

Excavation 3 was placed on a shell ridge southwest of Mound B. No dimensions are given for this excavation and only a brief description of the general stratigraphy is provided. The first six inches is composed entirely of sand. This is underlain by shell mixed with a “large percentage of sand” (Moore 1892b:63). No pottery or other artifacts are reported from this excavation and is the first area dug by Moore in the shell ridge that lacked pottery altogether. An in-filled depression to the southwest of TU-F on the South Ridge may be the location of this excavation.

Excavation 4 was placed in the “lowest level of [a] depression N. of [the] same ridge” to which Moore is referring to the ridge where Excavation 3 was placed (Moore 1892b:63). A low trough-like feature is created by the two shell ridges and closely matches Moore’s description in both topography and direction. He describes the stratigraphy in this unit as consisting of 15 inches of pure sand which is underlain by “hard shell conglomerate” (Moore 1894b: 63). Apparently excavation did not proceed any further beyond the concreted shell deposits as no description of strata or artifacts is provided. An auger test in the trough between the two ridges confirm this general stratigraphic sequence and lends further support to the location of Excavation 4 in this vicinity.

Excavation 5 was placed on the apex of the shell heap west of Mound B. This excavation measures 6 x 3.5 feet and 4.5 feet in depth, “converging” and ending “still in shell” (Moore 1892a:90). Moore (1892a:90; 1892b:63) describes the stratigraphy as consisting of “15 in. [of] pure sand” followed by “paludinas loosely mixed with sand and

[a] few ampullarias.” No pottery was observed during excavation but a “shell gouge” was found at a depth of five feet and an “arrowhead” was also recovered at a depth of 1.25 feet in contact with and lying atop the shell deposits (Moore 1892b:63). Moore’s reported recovery for the “shell gouge” (actually an adze) at a depth of five feet is at odds with the total depth reached in this excavation unit. In spite of this small difference in the reported depths, the “shell gouge” in all probability came from 4.5 to 5.0 feet below the ground surface. The Faunal bone and thermal features, possibly hearths, are also noted. Evidence for this excavation is possibly extant and consists of an area of disturbance somewhat northwest of Mound B. It can not be conclusively demonstrated that this disturbance is in fact Moore’s old excavation and may actually be of recent origin considering the agricultural activities reported to have occurred at the site, namely citrus and cattle.

Whether subsequent to, or concurrent with, excavations in the midden Moore also dug into both mounds. Mound B is the first discussed in the field notes and publications. Excavation in Mound B consisted of a trench placed on the “west” side of the mound measuring 22 feet by 7 feet in length and ranging in depth from three to five feet, terminating when the “shell base” was reached (Moore 1892a:91). The composition of the mound is described as consisting of “brown sand with a sprinkling of shell” (Moore 1894a:89). The mound itself is constructed on a “shell mound” (Moore 1892a:91; 1892b:64). No human remains were encountered and only three items are reported: an alligator tooth, a single lithic flake, and a quartz pebble. Pottery was not found in the mound but Moore does report that a single sherd was found on “the immediate surface” (Moore 1892a:91). The absence of human remains in the trench

lead Moore (1892b:64) to conclude that Mound B was “used for the residence of the chief.” Scarcely more than two paragraphs are dedicated to discussing Mound B in all of Moore’s work. Mound A received significantly more consideration in comparison.

Excavations in Mound A consisted of a unit at the mound’s apex and a trench up its northern slope. The “southern” end of the trench converges with the pit on top of the mound (Moore 1892a:91). Originally Moore (1892a:91, 93) discusses two excavations in Mound A in his field notes. Later in draft manuscripts and published accounts, he discusses his units in Mound A as a single entity. The unit on the mound’s summit measured 10 by 8 feet and reached a depth of 10 feet, converging toward the bottom and terminating at the top of the shell base. On the northern slope of this mound, beginning approximately 30 feet from the margin of the base and extending upslope, connecting to the unit at the mound’s summit, a trench measuring 20 feet in length and ranging in width from 7.5 feet to 10 feet was dug. Depth in the trench varied, ranging from 4.5 feet to 10 feet also ending on the shell base. A maximum depth of 10 feet was reached in the trench where it met with the unit on top of the mound. Moore reports excavating into the shell platform in several locations along the length of the trench (Moore 1892b:92). In contrast to Mound B, Moore observed distinct strata and encountered burials in Mound A. These are discussed in greater detail below.

The second visit

Returning in early 1894, Moore spent a total of eight days from January 16th through January 23rd dedicated “to the total demolition of Mound A and the excavation of the central portion” of Mound B (Moore 1894d:167). Moore does not provide any information on the number of excavations he placed in Mound A stating only that it was “demolished.” Work in Mound B consisted of a single excavation placed at the mound

apex. Seven burials were encountered and prompted Moore to alter his interpretation of Mound B. In the first draft of his report Moore interprets Mound B as a “Chief’s residence” due to the lack of burials encountered during the first visit. After finding burials during the second visit he rightly reinterprets Mound B as a burial mound.

Stratigraphy and chronology

Moore’s description of the stratification of Mound A is the best of all the excavations he made at Thornhill Lake and is essentially unchanged from his field notes through final publication (Moore 1894a:88, 1892b:65). An idealized profile for the stratigraphy in Mound A is presented in Figure 5-1. The stratification is described as follows: 6 inches of brown sand, one and one-half feet of white sand, five feet of brown sand with a minor amount of shell, and three feet of pure white sand. Burials were encountered in the lowermost brown and white sand strata. Underlying the alternating sand strata is a basal stratum composed of shell. The surface of the shell stratum is a conglomerate of calcined shell, sand, and charcoal indicating a surface that has been burned (Moore 1892a:96). Underlying the shell conglomerate is what Moore (1894c:88) describes as “the ordinary debris of the shell-heap” which I interpret as unconsolidated shell midden. The stratification observed in Mound A is one of the best examples of the kind of stratification present in the Archaic period burial mounds along the St. Johns although others bear similarities in composition.

Moore’s thoughts on the stratification of Mound A appear to have changed from the draft of his first article (Moore 1892b) to the publication of the first article (1894c), specifically the nature of the white sand strata. He is not clear about which white sand stratum in Mound A is referred to since there are two, possibly the first stratum superior

to the shell base. This first sand stratum, appearing to be a layer in the first article (Moore 1894c:88), is characterized as a ridge with a north-south orientation in the draft because, as Moore (1892b:65) puts it “the dip on either side was abrupt.” Moore (1892b:65) observed similar mound stratigraphy in the Tick Island burial mound and refers the reader to his article on that site.

Moore’s trench and pits into Mound B did not reveal the stratification that was observed in Mound A. Mound B’s matrix is composed of brown sand and minor amounts of shell and, like Mound A, is constructed on top of a shell base referred to as both a “mound” and “heap” (Moore 1892a:97, 1892b:64). The lack of stratification and absence of white sand strata is curious given its presence in Mound A and frequent occurrence in other Archaic mortuary mounds along the St. Johns (Aten 1999; Endonino 2003; Jahn and Bullen 1978; Moore 1893). What, if anything, this means is uncertain.

Chronologically the placement of this mound complex into the Mount Taylor period of the preceramic Archaic is justifiable based on Moore’s stratigraphic observations in both the midden and mounds. Clearly Orange and later St. Johns period deposits are suggested by the presence of ceramics at the site as revealed by Moore’s excavations in the shell midden. Ceramic period occupation and the relatively thin deposits are indicating the infrequent use of the site during post-Archaic times and a substantial Mount Taylor presence. This is borne out by the presence of pottery within 1.5 feet of the ground surface with all underlying deposits dating to the Mount Taylor period. The virtual lack of ceramics in either of the mounds consisting only of a single sherd from near the surface of Mound B and two sherds from Mound A likewise points to a

preceramic Mount Taylor temporal placement for the site. The latter two sherds come from a somewhat dubious context though Moore ultimately believes them to be from approximately four feet below the ground surface. He does highlight the fact that the dearth of ceramics encountered during excavation of the two mounds is out of character for burial mounds along the St. Johns. So too are the occurrence of bannerstones in the mounds recognized by Moore as unusual and it does not seem that he was cognizant of the fact that these items are of considerable antiquity, predating pottery throughout eastern North America.

Burial Analysis

Through a reading of Moore's publications and field notes it is possible to gain some insight into the burial practices of the site's inhabitants. Moreover, it is possible to identify a total of 18 specific burials and associated grave goods, affording a rare opportunity to investigate the interment type, grave lots, and in two cases, the sex of the burial. Although far from being a detailed and formal analysis of the skeletal population from Thornhill Lake, the following discussion summarizes, presents, and discusses the nature of the burials recovered, the artifacts found in association with some of the burials, and explores possible behaviors and their meanings.

Mode of interment

During his excavation in Mounds A and B Moore (1894b; 1894c:88; 1894d:170) encountered a total of 56 burials: seven in Mound A during his first visit, seven from Mound B during his second visit, and an additional 42 from Mound A during the second visit. He reports that the burials were "in anatomical order" and that most of them were found lying on their backs with the hands across the abdomen (Moore 1894c:88). One unusual example was found lying upon its back with the legs drawn up and stretched

widely apart. Yet another was found lying on their back with the legs flexed to the side. Flexed burials were infrequently observed although no counts or descriptions are provided. Considering the relative rarity that flexed burials are mentioned, it seems reasonable to assume that the burials lying on their backs are supine or extended. Based only on Moore's description of the burials being in "anatomical order" it also seems reasonable to conclude that they are also primary interments.

Secondary burial was apparently not practiced and is indicated when Moore (1894d:168) states that "no case of the bunched burial" was found during his work. Based on the information provided Moore's field notes and publications it appears that burials were primary in-flesh inhumations in a supine position with the hands placed on the abdomen. Considering this fact it appears likely that burial occurred relatively soon after death in most cases and the use of a charnel house or some other means of storing corpses apparently was not practiced by the inhabitants of Thornhill Lake. With a few of the burials artifacts that might be termed grave goods were found but the impression given by Moore is that generally burials were without accompaniments.

Grave lots

The inclusion of grave goods with some burials was practiced, but precisely how widespread it was cannot accurately be determined. However, based on Moore's field notes and publications some data related to material culture accompanying burials can be gleaned. The available data on burials from Mounds A and B are presented in Table 5-1. Of the 52 burials reported by Moore eighteen are discussed by him in either his field notes or publications (Moore 1892a-b; 1894a-d) and of these, twelve are reported as having artifacts in association. The remaining six are discussed but

lack associated artifacts. The balance of the burials reported (N=34) apparently possessed no artifacts and received no discussion.

Four burials (Burials 8, 12-14) are accompanied by bannerstones and also were provided with a varying number of polished stone and shell beads. Of the burials with bannerstones in association, Burial 8 stands alone whereas the other three, all of which came from Mound B, had only a few shell and stone beads in addition. Burial 8 was furnished with copious amounts of shell beads and judging from Moore's (1894d:168) description also had the majority of the stone beads as well. Burial 9 is accompanied by a stone pendant and a "few" shell beads. The remaining burials with associated grave goods have beads of both stone and shell. Five stone beads were found with Burial 10 and four tubular shell beads accompanied Burial 11. Burials 15-18 are indicated as having small shell beads in association but no mention of their number is provided.

Each of the seven burials in Mound B was provided with grave goods. All burials were furnished with shell beads, small marine shell beads but also possibly tubular varieties, but only the three burials with bannerstones had stone beads. The high frequency of burials with grave goods in Mound B contrasts with Mound A where only a small number of all burials possess any accompaniments. Most of the grave goods recovered from Thornhill Lake generally, and Mound A specifically, was found with Burial 8. Three of the seven bannerstones from the site, one of the stone pendants, the missing "stone ceremonial," most of the polished stone beads, the majority of the small and tubular shell beads, all three shell rings, and the shark tooth pendant were with this individual. The remaining burials in Mound A, as well as those in Mound B, are quite

impoverished by comparison and likely lead Moore (1894d:168) to speculate that that “he” was “presumably a person of rank.”

Among the burials at Thornhill Lake there appears to be some patterning regarding grave goods. Three categories are apparent: 1) burials with bannerstones and pendants, 2) burials with beads only, and 3) burials lacking artifacts altogether. Caution needs to be exercised here and it should be remembered that Moore did not excavate the mounds in their entirety and did not use methods that measure up to modern practice. That being said, the information that he has provided, coarse grained though it is, can still be useful in outlining differences in mortuary treatments at this site. Based on the available data it is noteworthy that burials furnished with groundstone artifacts (i.e. bannerstones and pendants made from broken bannerstones) are found with a restricted number of individuals. Those with beads of shell and/or stone beads occur more frequently, but are still relatively restricted in terms of the total population. Lastly, the majority of burials at the site, all from Mound A, apparently lack any artifacts whatsoever. Exactly how many burials lacking beads or other artifacts can not be known. Moore (1894d:168) does indicate that “small” and “tubular” shell beads are found “occasionally” with burials and would seem to imply that overall, and with the exceptions noted, burials lacked grave goods. Based on the available data it appears, at least on the face of things, that there is some differentiation in the burials in the Thornhill Lake mounds. Again caution should exercised given the limitations of the data Moore provides as well as preservation factors; it could very well be that organic burial goods for which there were no traces when Moore excavated were placed with burials and these too perhaps signaled differences between individuals. At this point it appears

that there is limited evidence to suggest some internal differentiation among the people buried in the Thornhill Lake mounds and its nature is open to debate.

Artifacts

Artifacts recovered by Moore, while modest in number, are exceptional in nature. Among these are examples of what can be considered commonplace such as stone, bone, and shell tools. Others rare and exotic in form and material, being made of stone not native to Florida and include the bannerstones, pendants, and stone beads. Exotic and rare items came without exception from the mounds and in direct association with burials in most cases. Commonplace artifacts that would have been part of daily activities (stone, bone, and shell tools) were recovered from both mound and the midden contexts.

Artifacts found in the midden by Moore (Moore 1892a:88-90) include tools of stone, bone, and shell in addition to pottery. No descriptions of the pottery types are provided but almost certainly included St. Johns and Orange wares, both plain and decorated. Tools of stone, bone, and shell reported from the midden include a stone core, a lithic biface, one undamaged bone “awl”, and a shell “gouge” (Moore 1892a:88-90). These items are exactly what might be expected in midden deposits typical of the Mount Taylor period. That so few were recovered is somewhat surprising considering the size and number of excavations Moore made. However, in light of the fact that modern recovery techniques were not used this is understandable. Considerably more specimens of material culture of a sharply contrasting nature to that found in the midden was recovered from the mounds.

Artifacts from the mounds not recovered in direct association with burials are few. Among those from Mound A include lithic bifaces and debitage (Moore 1894c:89;

1894d:168). During his first visit he reports that “[u]nassociated at a depth of 6.5 feet rude three-sided lance or arrow point of chert, 3 inches in length.” Later, during the second visit he states that “[s]uperficially, was a beautifully wrought arrowhead” and that an additional “[t]wo fragments of projectile points” were also found (Moore 1894d:168). A single lithic waste flake was found in one of the white sand layers (Moore 1892b:67). A fragmentary bannerstone made of limestone unassociated with a burial, was found five feet below the surface of Mound A (Moore 1894d:168). Also found in Mound A are two sherds “with the ordinary stamped decoration” (1894d:172). Possibly this is St. Johns Check-Stamped though it could also be Deptford Check-Stamped. Moore (1894d:173) seems conflicted about their presence in the mound stating on the one hand that he “was present at their discovery” and is “convinced of their position” while in the next sentence reasoning that they are “doubtless of accidental introduction” based on the absence of any other sherds in the mound.

During his second round of work at Thornhill Lake Moore recovered considerably more artifacts from Mound A and as noted above, most were associated with Burial 8. Mound B produced few artifacts not in direct association with burials. Items found in the trench include an alligator tooth with cut marks at the root, a lithic flake, and a quartz pebble; the latter two were found about a foot below the ground surface while the quartz pebble was found at 2 feet (Moore 1892a:88). A single sherd of pottery was found on the surface of Mound B, but none was reported below the surface (Moore 1892b:64). Below the artifacts recovered from the mounds and midden at Thornhill Lake are discussed in greater detail.

Collections inventory

Artifacts collected by Moore during his travels throughout the southeastern U were originally housed at the Philadelphia Academy of Sciences. Some of the artifacts were gifted to other institutions such as the Peabody Museum at Harvard; the Chicago Field Museum; the Wagner Free Institute of Science; and the Museum of the American Indian, Heye Foundation, and a number of other institutions in Europe and South America (Aten and Milanich 2003). The majority of Moore's collections were kept at the Philadelphia Academy of Sciences. While at the Philadelphia Academy of Sciences, Moore himself bore the costs associated with curation and oversaw their placement and safety. The reorientation of the academy's mission to focus on natural science in the mid-1920s lead Moore to suspect that the collections would receive inadequate treatment following his death and in the spring of 1929 he contacted George Heye to ascertain if he had an interest in acquiring the collection. He did, and purchased it for \$10,000 in 1929, quickly transferring the collection from Philadelphia to the Museum of the American Indian in New York (Aten and Milanich 2003). Today the collection is part of the Smithsonian Institution's Museum of the American Indian. Formerly located in New York, the collections were moved to the Cultural Resource Center (CRC) in Suitland, Maryland in 2003.

Smithsonian accession records indicate that there are 60 items from Thornhill Lake in their possession. In actuality, there are significantly more due to a cataloging inconsistency that recorded approximately 2100 small shell beads as a single bead. Given the packaging of the beads, it seems likely that it was intended to mean one bag of beads, and not an individual bead. All of the more notable artifacts from Thornhill Lake are present in the Smithsonian collections. Some items mentioned both in

Moore's field notes and published accounts are absent and their whereabouts are unknown. One shell bead in the collection was adhering to a piece of human bone and was not available for study in compliance with the Native American Graves Protection and Repatriation Act (NAGPRA). The remaining 58 specimens were made available for study.

No information is provided in the Smithsonian catalog indicating whether artifacts were recovered from Mound A, Mound B, or the midden. A comparison of the artifacts in the Smithsonian Collections and Moore's publications resulted in the attribution of the bannerstones, pendants, and some of the beads to a particular mound, and, in a few instances, a specific burial. The artifacts in the Smithsonian collections and their provenience are presented in Table 5-2.

Although all of the more "interesting" artifacts recovered by Moore from Thornhill Lake are present in the Smithsonian collections, a number of artifacts mentioned by him in both his field notes and publications were not. It is possible that these were not kept or, alternatively, they were given to landowners, friends, acquaintances, and other museums and institutions, leaving no record of these transactions. Moore was known to give artifacts as gifts to landowners (Tom Evans, personal communication, May 2006). Among the missing artifacts are a number of bifaces, a chert core, several pieces of debitage, and the two ceramic sherds he found in Mound A. One item mentioned in Moore's first publication (Moore 1894a) is the end of a human femur displaying evidence of burning. This specimen is present in the collections at the Wagner Free Institute of Science (Robbins-Schell 1997). Artifacts mentioned in Moore's publications and field notes but not present in the Smithsonian collections or

available at other museums and institutions are relatively few in number. Objects found in the midden but not in the collections include a stone core, a lithic biface, and any of a number of ceramic sherds reported to have been present. From Mound A four lithic bifaces, the two sherds of “stamped” pottery, and the badly degraded “stone ceremonial” were notably absent. Mound B artifacts include a lithic flake, an alligator tooth, and the ceramic sherd found on or near the mound’s surface. The remaining items accounted for are considered below.

Analysis

Analysis of the Thornhill Lake collections sought to assemble all available and relevant data categories possible. Among these are morphological descriptions, damage, metric attributes, raw material types, manufacturing data, repair and maintenance, and any other relevant observations. Summary data for the analysis of these artifacts is presented in Table 5-3.

Seven bannerstones were recovered from Thornhill Lake: four from Mound A (Figure 5-2; b, d-f) and three from Mound B (Figure 5-2, g-i). Three of the four specimens from Mound A (Figure 5-2; b, d, e) were found in association with Burial 8 in the northern slope of the mound. The fourth bannerstone was found within the mound fill and apparently not in association with a burial. Each of the three bannerstones from Mound B was found associated with an individual burial.

The largest of the three bannerstones accompanying Burial 8 (Figure 5-2, b) is assignable to the Wisconsin Winged type and is made from a dark greenstone. Wisconsin Winged bannerstones have a shape that is similar to a “bow tie.” Damage to this artifact consists of a longitudinal fracture along the central perforation (Moore 1894d:Figure 38). Subsequently this damage has been repaired, possibly by Moore or

George Heye. Temporally Wisconsin Winged bannerstones date to Phase II of Sassaman and Randall's (2007) chronology for bannerstones in the Savannah River Valley, from 5200-4700 cal. B.P. Both of the miniature bannerstones (Figure 5-2; d, f) found with Burial 8 are Wisconsin Winged varieties. The raw materials used to produce these diminutive artifacts include a grain supported stone, likely volcanic or metamorphic and having a brecciated or clastic appearance and greenstone. Both of the smaller specimens are undamaged. The final bannerstone from Mound A was found "unassociated" within the mound. Typologically it is classifiable as a Southern Humped (Sassaman and Randall 2007). Damage is present on both ends of this artifact and includes a small notch at the top on one end and the removal of an entire corner of the opposite end, amounting to just over one-quarter of the total artifact. Southern Humped bannerstones date to Phase I in Sassaman and Randall's (2007) chronology, from 5500 to 5200 cal. B.P.

Each of the three bannerstones found by Moore in Mound B was recovered in direct association with an individual burial. All of the bannerstones are Southern Ovale forms. Two of the three specimens are a soft limestone that exhibits substantial pitting or erosion on much of the surface of both and each appears to have been "restored" or "repaired" by coating them with plaster. While it is possible that the limestone used to produce these two artifacts originates within the Florida peninsula, the presence of what appears to be ferrous inclusions suggests that they originate elsewhere as ferrous material is typically not present in the primary surface exposures of limestone in Florida. Steatite was used to manufacture the third bannerstone (Figure 5-2, g) from Mound B. This artifact is complete and the only damage observed is thermally induced cracks on

the surface. Southern Ovate bannerstones fall into Phase II of Sassaman and Randall's (2007) chronology.

Four pendants were found by Moore during his excavations in Mound A. Three are available for study: two of stone (Figure 5-2, a and c) and one shark tooth (Figure 5-2, j). The fourth pendant, although commented on by Moore (1894d:168), apparently was so badly degraded that it was not retained or, as with the other missing artifacts, was given to an unknown individual or institution and is not available for study. The stone pendants are both made from non-local material and have a "shield" or "badge" morphology. The first (Figure 5-2, a) of these was found in association with Burial 8, near the neck with shell beads "in great profusion" including tubular shell and polished stone specimens (Moore 1894d:168-170). Both pendants are made from the "wings" or broken bannerstones and Moore (1894:170) comments that it was A. E. Douglass who brought this fact to his attention, having found one himself in Mound 6 at the Tomoka Mound Complex. At the distal end of this specimen there is a remnant of what was the central perforation of the original bannerstone that curves inward and upward (Moore 1894:170). Greenstone was used to produce this pendant and suspension holes were drilled at either corner of the proximal end. The holes were bidirectionally drilled and no evidence of "string wear" was observed in either perforation nor was any other sort of damage present.

A second stone pendant (Figure 5-2, c) was found on the sternum of Burial 9 (Moore 1894d:170). Like the first pendant, remnants of the central perforation of the original bannerstone are visible. A fine grained dark gray volcanic stone with small crystal inclusions is the raw material used to produce this item. Two bidirectionally

drilled suspension holes are present in either corner of the proximal end. String wear and polish are present at the top of the perforations, clear evidence supporting its use as an ornament, possibly over an extended period of time. Temporally these pendants likely are associated with the bannerstones from this site and in all probability date to Phase II of Sassaman and Randall's (2007) chronology.

The shark tooth pendant (Figure 5-2, k) was encountered in a context that clearly speaks to its function as an ornament as opposed to a cutting or perforating tool: among the shell beads on the chest of Burial 8. A tiger shark (*Galeocerdo cuvier*) tooth was chosen to produce this item and the perforations are bidirectionally drilled. No striations, polish, or other use-related wear was observed and, in fact, the serrations are quite sharp and have not been dulled or damaged in any fashion as might be expected if it was used in some functional capacity. Frequently perforated shark teeth are interpreted as tools and display wear patterns in of support this (ACI/Janus 2001, Wheeler and McGee1994a).

Ground and polished stone beads were found in association with burials in Mounds A and B (Figure 5-2, j). Possibly the majority of them came from Burial 8 as Moore (1894d:168) reports them found among shell beads along both lower arms and on the chest. Thirty-one stone beads are present in the Thornhill Lake collection. One bead was misidentified in the NMAI inventory as a tubular shell bead, likely due to its white coloration, when in fact it is made from white jasper with light red mottling. Specimens are typically tubular in form and, with the exception of the one specimen just noted, red-colored jasper is the only raw material type observed. Some variability in

size is present among the stone beads from Thornhill Lake. Specimens frequently are tubular and others short with equal lengths and widths.

Discernible production techniques consist of grinding, drilling, and cutting. Drilling is primarily bidirectional and 21 specimens exhibited clear evidence of this technique. An additional five beads are possibly bidirectionally drilled and four are indeterminate. One specimen is unidirectionally drilled and exhibits evidence of having been cut on both ends. Many beads have been cut at one or both ends as evidenced by relatively flat surfaces with striations suggestive of sawing although grinding is also possible. Other beads show faceting and rounding on their ends. Grinding appears to be the principal method of shaping and polishing these artifacts and is indicated by the presence of longitudinally oriented striations and multiple facets on some specimens. A number of beads also display asymmetry in thickness at their ends with one generally thicker than the other. This is possibly due to one end of the beads being used for prehension during the grinding process, resulting in the greater thickness of this end as opposed to the other. Five stone beads have been damaged by uncontrolled exposure to fire as indicated by potlidding and crenulated fractures and contrast noticeably with the specimens that have not been exposed. Two specimens have thermal damage only half of their surface whereas the remaining three are damaged on the entire surface.

Several varieties of shell beads were observed or analyzed in the Smithsonian collections. Bead types from this site include tubular marine shell beads that are both long and short, marine shell "rings" and freshwater mussel disc beads. Small marine shell beads are the most abundant type recovered from Thornhill Lake. No accurate

count for this type is currently available but an estimate of 2100 specimens is offered. These small marine shell beads have a truncated yet tubular appearance as they are longer than they are wide in most cases. Shell clearly was used for their manufacture and in all probability the columellae and possibly whorl fragments of *Busycon spp.* shells supplied the raw material.

Disc-shaped freshwater shell beads, likely made from *Unionidae* sp. mussel, were occasionally observed among the estimated 2100 specimens of small shell beads in the collection. The freshwater specimens stand out from the small marine shell beads in that they are markedly thinner and flatter and the shell itself is more friable and iridescent (Figure 5-3).

Twelve tubular beads made from *Busycon spp.* columellae are present and represent a minority type in this collection (Figure 5-2, m). All twelve are of an uncertain provenience as Moore (1894b) reports tubular shell beads accompanying several burials from Mounds A and Mound B. Evidence for the techniques used to produce these artifacts is still evident on them. Many of the beads appear to have come from relatively small *Busycon spp.* shells judging from their diminutive size and the presence of relatively deep grooves on the siphonal canal. Grinding appears to have been the principal means of shaping these artifacts and many have been extensively ground reducing the prominence of the grooves. Evidence of faceting is observable on many of the specimens

Three rather interesting shell beads best described as “rings” (Figure 5-2, l) were among the many beads accompanying the richly endowed Burial 8 in the north slope of Mound B. All three appear to be made from the same *Busycon spp.* columella blank

and each was subsequently shaped through grinding/abrasion. Some faceting is apparent on the exterior surfaces as well as the interior. Rounding and polish are present along the edges of all three of these artifacts and could be indicative of either production related activities or perhaps use – i.e. string wear. All three seem to be cut from the same tubular *Busycon spp.* columella blank and display a striking degree of similarity. No beads similar to these have been reported from any context along the St. Johns River or eastern Florida by Moore or any subsequent investigators.

In addition to the bannerstones, pendants made from broken bannerstones, ground stone beads, and the multitude of shell beads, two artifacts that are different from the rest were also recovered. These include a bone awl and a shell celt. The bone awl (Figure 5-4, a) came from Excavation 1 in the midden. It is made from the long bone of a deer although it is misidentified as “shell” in the NMAI catalog. A combination of carving and grinding was employed to shape and form this tool. No discernible damage is evident on this tool although rotary wear resulting in a concentric, circular step at one end. A light polish is also present at this same end. Temporally this artifact is not diagnostic but, based on Moore’s (1892a) description, it appears that it was recovered from a preceramic context. A shell celt from Excavation 5 in the midden approximately 6 feet below ground surface in a preceramic Archaic context (Figure 5-4, b). A relatively thick lip portion of a queen conch (*Strombus gigas*) shell was used to produce this tool and it displays evidence of grinding and possibly pecking. In form this tool has an expanded distal/bit end and a contracting mid-section and proximal end. The bit is noticeably wider than the proximal end and steeply beveled, having a somewhat hatchet-like appearance. It appears truncated, probably as a result of

resharpening and maintenance. The bit is sharp and was well-maintained. No use-related wear such as battering and stepping were present and may suggest that this tool was discarded shortly after being resharpened.

Discussion of Collections

Several aspects of the collections from Thornhill Lake are worthy of note. Materials used to make five of the seven bannerstones and both of the stone pendants from the mounds did not originate in Florida and is suspected to have come from Mississippi and perhaps the piedmont of Georgia and South Carolina. Without exception all of the ground and polished stone beads are made from jasper and with a single exception all are red in color. Mississippi or Louisiana are likely sources for these artifacts as Middle and Late Archaic sites from these states have produced compelling evidence for ground and polished stone bead production, perhaps even part-time specialists (Brookes 2004). Similar artifacts were found at the Coontie Island site (8SJ13) south of St. Augustine. Among the artifacts from this site three bannerstones, over fifty ground and polished stone beads, and over one hundred Newnan and Newnan-like bifaces. The last of the artifacts just mentioned bridges the area of bead production and the Florida peninsula. Brookes (1999) discusses the occurrence of Newnan points possibly made from lithic materials native to Florida and effigy Newnan points made from slate and other stone materials originating in the Ouachita Mountains in Arkansas at the Slate site in Mississippi. Should the Newnan points found at this site prove to be made from Florida lithic materials, a convincing link between the two areas, between the lower south and Florida, a strong case for their origin in the former can be made. The mechanism for their movement was established during the Middle Archaic

and exchange networks moved finished goods and raw materials throughout the southeast and mid-western U.S. (Goad 1980; Jefferies 1996; Sassaman 2004).

Owing to the rarity of bannerstones, pendants, ground and polished stone beads and the fact that they are recovered principally from mortuary contexts we they are found in Florida (Douglass 1882; Russo 1991), it is my belief that they functioned in the realm of mortuary ritual and symbolism in the context of Mount Taylor mounds. Bannerstones have been interpreted historically in functional terms as part of composite atlatl's or spear throwers at Indian Knoll (Webb 1974). Such does not appear to be the case in Florida and is the product of local histories of interaction with neighboring groups and those more distant. In the context of the Thornhill Lake Mounds, the restricted distribution of these artifacts with a limited number of individuals is signaling the emergence of differences in status among members of the local community and is used in death, possibly in life, to mark those differences.

A few of the artifacts from Thornhill Lake are reported by Moore as being damaged or broken and these display evidence of nineteenth century repair and conservation efforts. Among these is the large Wisconsin Winged bannerstone found with Burial 8 and two bannerstones from Mound B made of soft limestone. Moore's illustration of the bannerstone from Burial 8 shows a longitudinal segment of the central perforation as missing. The sample artifact has been restored with an unknown substance (resin?) and matched to color. Moore describes the two bannerstones from Mound B made from soft limestone as being badly degraded. In an apparent effort to consolidate these artifacts what appears to be plaster and this material contrasts noticeably with the natural material in both texture and color.

During analysis it became clear that several of the ground and polished stone beads and on a steatite bannerstone from Mound B had been burned. Moore mentions evidence for burning at the base of the mounds and on human humerus from Mound A (Moore 1894c:89). Fire damage to the stone beads is unmistakable, causing extensive pitting and thermal fracturing. Bullen (Jahn and Bullen 1978) and Aten (1999) both report that some of the burials from Harris Creek had been exposed to fire. Combined, these different lines of evidence – burned sub-mound shell surfaces, human remains displaying evidence of exposure to fire, and burned artifacts in mortuary contexts – point convincingly to the use of fire in mortuary ritual associated with mounds.

Thornhill Lake Archaeology Post-1900

Very little archaeology has occurred at Thornhill Lake since Moore's work there in 1892 and 1894. No evidence exists to indicate that John Goggin or Ripley Bullen, nor any other archaeologist in the first three-quarters of the twentieth century, visited this site. Not until the late 1990s did any professional archaeological investigations occur. Reports of looting and vandalism at Thornhill Lake prompted a field visit by Christine L. Newman of the Florida Bureau of Archaeological Research in March 1998 to assess the damage done to the mounds and evaluate their integrity (Newman 1998). Upon visiting the site it was observed that the vandalism and looting was somewhat recent, probably within a year prior to the visit, but that it was not actively being looted. Newman (1998) observed that the mounds were in fairly good shape, relatively undisturbed, and much as Moore described them. Importantly, Newman indicates that Mound A was not "demolished" as Moore (1894d) claims, but is, rather, in a relatively good state of preservation considering the extent of Moore's work. No artifacts were collected from this site during this visit. A local informant indicated that there are additional mounds in

the vicinity of the site but did not specify whether or not these were shell mounds/middens or sand burial mounds. According to Newman (1998) the mounds, and the site in general, are in good shape, noting that the mounds likely contain undisturbed burials and artifacts and that there has been “very little disturbance to the midden area.” Among the recommendations made for this site are continued monitoring on a bi-weekly or monthly basis and appropriate signage at the main access point. Further survey level work at the site and vicinity to locate additional midden areas and/or mounds is also suggested.

Several field visits were made by the author in 2003-2004 in order to assess the site’s condition and to determine if the mounds and midden retained sufficient integrity to be a worthwhile study topic. Beginning in the fall of 2005 a program of topographic mapping, site discovery survey was initiated as part of the research for this study. Excavation was carried out from December 2006 through July 2008 (Endonino 2007a; 2008b) and occurred concurrently with topographic mapping and other subsurface testing methods. The results of this field work form the core of this study and are presented in Chapter 6.

Thornhill Lake in the Archaeological Literature

Whereas Thornhill Lake has been neglected for over a century where field work is concerned, the site has received some attention in the archaeological literature. Much of it has come as a result of a growing interest on the part of archaeologists in the southeastern U.S. in Archaic periods mounds since the early 1990s (Russo 1994a). In this section the place of Thornhill Lake in the archaeological literature is reviewed.

No mention of the Thornhill Lake site is made for more than 50 years following Moore’s work until the publication of Goggin’s (1952) pioneering work on the

archaeology of northeast Florida. He discusses Thornhill Lake Mounds A and B at some length in an exploration of his “*Unclassified complex (?)*” (1952:51-53). Goggin describes both of the mounds at Thornhill Lake and their contents. Later he goes on to grapple with the issue of artifact assemblages apparently associated with the Archaic period in mound contexts. Goggin is aware that the bannerstones and jasper beads in the Thornhill Lake mounds and at Coontie Island, as well as the bannerstones from “Mt. Oswald” mound (Mound 6, Tomoka Complex) in northern coastal Volusia County, are typical Archaic period artifacts (1952:53). He does not appear willing, however, to accept that the presence of these kinds of artifacts in mound contexts are, even in those lacking pottery, anything other than St. Johns I and later in age because, as he states, “the concept of sand burial mounds is apparently post-Archaic” (Goggin 1952:53). This should not be surprising given the progressive, cultural evolutionary framework *en vogue* at the time. It was not even until early 1990s that southeastern archaeologists have been willing to accept the existence of Archaic period monument construction as an activity that Archaic peoples were capable of (Russo 1994a). To explain this phenomenon Goggin suggests that Archaic artifact forms in the mounds represents some sort of holdover from earlier times. While we have the benefit of hindsight and it would be easy to fault him for being unwilling to recognize these mounds as Archaic, Goggin was right in one respect when he says: “[t]his represents one of the most striking problems in the region”, echoing Moore’s sentiments regarding Thornhill Lake and presaging modern archaeological interest in Archaic mounds (Goggin 1952:53; Moore 1894d:170).

It was mentioned briefly in the foregoing paragraph that Archaic mounds and Archaic mound-building in the southeast has not been an established or accepted fact until fairly recently (Russo 1994a). In discussing the presence of and evidence for Archaic mounds in the southeast and Florida Russo (1994b) and Piatek (1994) both mention Thornhill Lake Mounds A and B briefly as part of a litany of mound sites that are known throughout the region. While the treatment of the Thornhill Lake Mounds both authors is brief and cursory, it is still significant in so far as it acknowledges the place of these mounds in contemporary archaeological discourse which has only increased during the late 1990s and early 2000s.

Jeffrey Mitchem (1999) discusses Moore's work at the Thornhill Lake mounds and goes into detail regarding the items found there by him. Mitchem lists the groundstone items found in the mounds by Moore and notes that Moore's original identification of the materials from which the stone beads are made as being Catlinite as incorrect and indicates that they are actually made from jasper. Goggin (1952) too indicates that the ground stone beads are made from jasper and the raw material identification for these artifacts was confirmed by the author during analysis presented above. Mitchem (1999:33) notes that jasper beads have been found in Late Archaic contexts elsewhere in the southeast and that the bannerstones found by Moore probably date from about 6000 B.C. to 1500 B.C. The early dates based on the groundstone artifact assemblage from the mounds coupled with a lack of evidence for habitation at the site dating to the St. Johns II period lead Mitchem to the conclusion that the mounds at Thornhill Lake primarily date to the Mount Taylor period and that Mound A has a minor St. Johns II component, overturning Goggin's St. Johns I designation for this site. Mitchem is

correct to assign both the mounds to the Mount Taylor period but Moore's (1892a) original field notes indicate that pottery, in all likelihood St. Johns Plain and Check-Stamped, was found in the midden associated with the mounds. Though not substantial, a St. Johns component is present at the site and may account in part for Goggin's placement of the mounds and site within the St. Johns culture period. Mitchem, with his treatment of the Thornhill Lake mounds, succeeds in temporally re-situating this site, and rightly so.

More recently Thornhill Lake has surfaced in the published archaeological literature in Wheeler et al.'s (2000) article on Mount Taylor. The larger of the two burial mounds at Thornhill Lake, Mound A is listed in a figure of sites with Mount Taylor period components. A more extensive discussion, though still relatively brief, is presented later in section in the article discussing mound building during the Mount Taylor period (Wheeler et al. 2000:154). The authors acknowledge that there is increasing evidence for the construction of sand burial mounds during Mount Taylor citing Moore's work at the site and noting the association of burials with groundstone objects. This reference to Thornhill Lake, as well as to the earthen burial mounds at the Tomoka Mound Complex, clearly illustrates that there is growing recognition and acceptance of the idea of Archaic period sand burial mounds in Florida.

The most recent appearance of the Thornhill Lake mounds and midden in the published archaeological literature comes courtesy of Samuel Brookes (2004). In arguing for alternative explanations for the function of bannerstones, Brookes cites the occurrence of bannerstones in burial mound contexts in Florida, citing Douglass (1882) and Moore (1894d). While not specifically named or discussed by Brookes, his

reference to bannerstones in mounded contexts and associated with burials excavated by Moore in Florida clearly points to the Thornhill Lake mounds as no other mounds that Moore excavated along the St. Johns contained bannerstones in unmistakable association with interments.

Heretofore, Thornhill Lake has played a minor supporting role in the discourse of Archaic period mounds in the southeastern U.S. Its role, though minor, adds additional support to the arguments of other researchers. However, though its contributions to date have been minor, the current investigations will provide substantially more data and move this site and the topic of Archaic period mortuary mounds in the southeastern U.S. a more prominent place in the archaeological literature.

Summary

Presenting and summarizing previous research at Thornhill Lake was the primary goal of this chapter. Much of the effort was focused on the work of Clarence Moore as he conducted the only excavations at the site for which there is any published record, thus, it is the only source of data on several key aspects of this site, namely deep stratigraphic profiles for Mounds A and B, burial data, and a mortuary-related artifact assemblage. Other early appearances of Thornhill Lake in the published literature are reviewed as well for additional historical perspective. Finally the role that Thornhill Lake has played in the modern literature post-1990 is reviewed and serves to situate this site within the current discourse regarding Archaic period mounds and cultural complexity in the southeastern U.S. These reviews and the analyses of data from Moore's field notes, publications, and collections have allowed several insights into the areas of stratigraphy, chronology, burials, and material culture that would not otherwise have been available, contributing substantially to the goals of this research and setting the

stage for contextualizing and interpreting the excavation data and analyses carried out during the research for this study and presented in Chapter 6.

Table 5-1. Burials and grave lots from Thornhill Lake Mounds A and B.

Burial	Sex	Mound	Provenience	Mode of Interment	Artifacts	Number	Reference
1	Indet.	A	Under apex, 7 ft. b.s.	primary, flexed burial	none	-	Moore 1892a:92
2	Indet.	A	Under apex, 8 ft. b.s.	primary, flexed burial	none	-	Moore 1892a:92
3	F	A	Trench N. Side of Md. 1, 5.5 ft. b.s.	primary, supine, hands folded on abdomen, legs flexed to the side	shell beads flint flake faunal bone	indet. 1 indet.	Moore 1892a:94; 1892b:67
4	Indet.	A	Trench N Side of Md. in brown sand	Not Specified	none	-	Moore 1892a:94
5	Indet.	A	Trench N Side of Md. 8' in and 6' down, in brown sand	Not Specified	none	-	Moore 1892a:95
6	Indet.	A	Trench N Side of Md. 8' in and 6' down, in brown sand	Not Specified	none	-	Moore 1892a:95
7	Indet.	A	Trench N Side of Md. 9' in and 6' 4" b.s.	Not Specified	none	-	Moore 1892a:95
8	M	A	N. Slope in shell, 4 ft. b.s.	Primary, supine	bannerstones stone pendant stone beads shell beads shark tooth pendant small stone "ceremonial"	3 1 21 2100+/- 1 1	Moore 1894b:73-74 Moore 1894b:73-74 Moore 1894b:73-74 Moore 1894b:73-74 Moore 1894b:73-74
9	Indet.	A	light sand layer, 6 ft. b.s.	unspecified	stone pendant small shell beads	1 few	Moore 1894b:73-74 Moore 1894b:73-74
10	Indet.	A	4' ft 6" b.s.	unspecified	stone beads shell beads	5 indet.	Moore 1894b:73-74
11	Indet.	A	10 ft b.s.		tube shell beads	4	Moore 1894b:73-74
12	Indet.	B	center of mound	"anatomical order"	bannerstone shell beads	1 indet.	Moore 1894a:73

Table 5-1. Continued.

13	Indet. B	center of mound	"anatomical order"	bannerstone shell beads	1 indet.	Moore 1894a:73
14	Indet. B	center of mound	"anatomical order"	bannerstone shell beads	1 indet.	Moore 1894a:73
15	Indet. B	center of mound	"anatomical order"	shell beads	indet.	Moore 1894a:73
16	Indet. B	center of mound	"anatomical order"	shell beads	indet.	Moore 1894a:73
17	Indet. B	center of mound	"anatomical order"	shell beads	indet.	Moore 1894a:73
18	Indet. B	center of mound	"anatomical order"	shell beads	indet.	Moore 1894a:73

Table 5-2. Thornhill Lake Artifacts in the Smithsonian Institution collections.

Accession#	Provenience	Artifact	Count
172183.000	Mound A	Bannerstone	1
170535.000	Midden	Awl	1
172178.000	Mound B	Bannerstone	1
172179.000	Mound B	Bannerstone	1
172180.000	Mound B	Bannerstone	1
172181.000	Mound A	Bannerstone	1
172182.000	Mound A	Bannerstone	1
172184.000	Mound A	Bannerstone	1
172185.000	Mound A	Pendant	1
172186.000	Mound A	Pendant	1
172187.000	Midden	Celt	1
172188.000	Indet.	human remains w/bead*	1
172189.000	Indet.	Beads**	1
172190.000	Indet.	Beads	13
172191.000	Mound A	Shell Rings	3
172192.000	Indet.	Beads	21
172193.000	Indet.	Bead	2
172194.000	Indet.	Beads	7
172195.000	Mound A	Pendant	1
Total			60

*not available for study, **Cataloging inconsistency records one bag of beads as a single bead.

Table 5-3. Summary data for Thornhill Lake Artifacts in Smithsonian collections.

Accession #	Provenience	Item	Material	Count	Lngh. mm	Wdth. mm	Thick. mm	Wt. g.
172183.000	A	bannerstone	greenstone	1	23.6	32.5	10.1	7.5
170535.000	Midden	awl	bone	1	78.3	9.1	7.5	5.0
172178.000	B	bannerstone	limestone	1	56.0	85.5	18.2	111.9
172179.000	B	bannerstone	limestone	1	44.1	76.6	24.4	110.1
172180.000	B	bannerstone	steatite	1	60.9	67.2	20.6	105.9
172181.000	A	bannerstone	limestone	1	61.8	45.2	22.3	61.0
172182.000	A	bannerstone	greenstone	1	54.4	88.2	17.7	46.3
172184.000	A	bannerstone	metavolcanic	1	18.6	33.9	8.1	4.3
172185.000	A	pendant	greenstone	1	37.6	43.3	4.2	14.9
172186.000	A	pendant	greenstone	1	50.2	57.2	5.2	31.1
172187.000	Midden	adze	shell	1	44.0	47.6	11.2	36.7
172188.000	A or B	skeletal frag. w/bead	shell, human bone	1	-	-	-	-
172189.000	A and/or B	beads, small	shell, marine and freshwater	2100*	-	-	-	262.8
172190.000	A and/or B	bead, tubular	jasper	1	21.0	8.2	-	1.3
172190.000	A and/or B	bead, tubular	shell, marine	1	36.5	9.6	-	4.7
172190.000	A and/or B	bead, tubular	shell, marine	1	28.8	9.8	-	4.2
172190.000	A and/or B	bead, tubular	shell, marine	1	28.8	8.5	-	3.1
172190.000	A and/or B	bead, tubular	shell, marine	1	30.7	8.8	-	3.6
172190.000	A and/or B	bead, tubular	shell, marine	1	32.9	6.3	-	3.1
172190.000	A and/or B	bead, tubular	shell, marine	1	23.4	6.5	-	1.2
172190.000	A and/or B	bead, tubular	shell, marine	1	21.8	5.4	-	1.0
172190.000	A and/or B	bead, tubular	shell, marine	1	24.2	5.8	-	1.0
172190.000	A and/or B	bead, tubular	shell, marine	1	24.8	6.6	-	0.9
172190.000	A and/or B	bead, tubular	shell, marine	1	22.1	5.8	-	1.2
172190.000	A and/or B	bead, tubular	shell, marine	1	25.6	6.6	-	1.0
172190.000	A and/or B	bead, tubular	shell, marine	1	19.1	6.2	-	0.7

* estimated count based on the weight of 300 beads divided by the total weight of all beads.

Table 5-3. Continued.

172191.000	A and/or B	bead, ring	shell, marine	1	-	15.4	4.3	0.7
172191.000	A and/or B	bead, ring	shell, marine	1	-	16.6	4.5	1.2
172191.000	A and/or B	bead, ring	shell, marine	1	-	15.8	3.9	0.9
172192.000	A and/or B	bead, tubular	jasper	1	20.7	8.8	-	2.5
172192.000	A and/or B	bead, tubular	jasper	1	10.1	7.6	-	0.9
172192.000	A and/or B	bead, tubular	jasper	1	22.4	7.8	-	1.5
172192.000	A and/or B	bead, tubular	jasper	1	13.5	7.3	-	0.9
172192.000	A and/or B	bead, tubular	jasper	1	14.0	7.4	-	1.3
172192.000	A and/or B	bead, tubular	jasper	1	16.4	7.6	-	1.4
172192.000	A and/or B	bead, tubular	jasper	1	12.2	7.3	-	0.9
172192.000	A and/or B	bead, tubular	jasper	1	11.5	7.7	-	0.9
172192.000	A and/or B	bead, tubular	jasper	1	13.1	7.1	-	0.7
172192.000	A and/or B	bead, tubular	jasper	1	14.7	6.6	-	1.0
172192.000	A and/or B	bead, tubular	jasper	1	10.7	7.7	-	0.8
172192.000	A and/or B	bead, tubular	jasper	1	10.9	6.9	-	0.5
172192.000	A and/or B	bead, tubular	jasper	1	10.6	6.5	-	0.6
172192.000	A and/or B	bead, tubular	jasper	1	8.8	7.4	-	0.7
172192.000	A and/or B	bead, tubular	jasper	1	6.6	8.0	-	0.6
172192.000	A and/or B	bead, tubular	jasper	1	8.0	9.7	-	1.1
172192.000	A and/or B	bead, tubular	jasper	1	5.6	7.7	-	0.3
172192.000	A and/or B	bead, tubular	jasper	1	6.4	7.2	-	0.3
172192.000	A and/or B	bead, tubular	jasper	1	9.0	6.4	-	0.3
172192.000	A and/or B	bead, tubular	jasper	1	7.2	6.4	-	0.4
172192.000	A and/or B	bead, tubular	jasper	1	13.2	7.6	-	1.4
172193.000	A and/or B	bead, tubular	jasper	1	16.6	9.9	-	1.2
172193.000	A and/or B	bead, tubular	jasper	1	8.3	6.8	-	0.3
172194.000	A and/or B	bead, tubular	jasper	1	31.7	7.3	-	2.6
172194.000	A and/or B	bead, tubular	jasper	1	16.8	7.3	-	1.5
172194.000	A and/or B	bead, tubular	jasper	1	25.8	6.8	-	2.2
172194.000	A and/or B	bead, tubular	jasper	1	32.7	7.0	-	2.6
172194.000	A and/or B	bead, tubular	jasper	1	27.1	6.2	-	1.7
172194.000	A and/or B	bead, tubular	jasper	1	15.5	7.1	-	0.7
172194.000	A and/or B	bead, tubular	jasper	1	18.5	5.9	-	0.5
172195.000	A	pendant	shark tooth	1	14.6	20.3	4	0.8

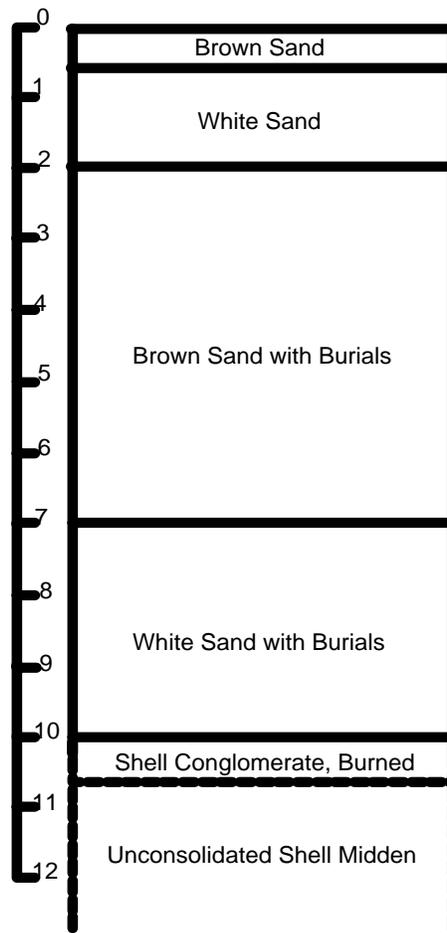


Figure 5-1. Moore's stratigraphic profile for Mound A. Scale in feet.

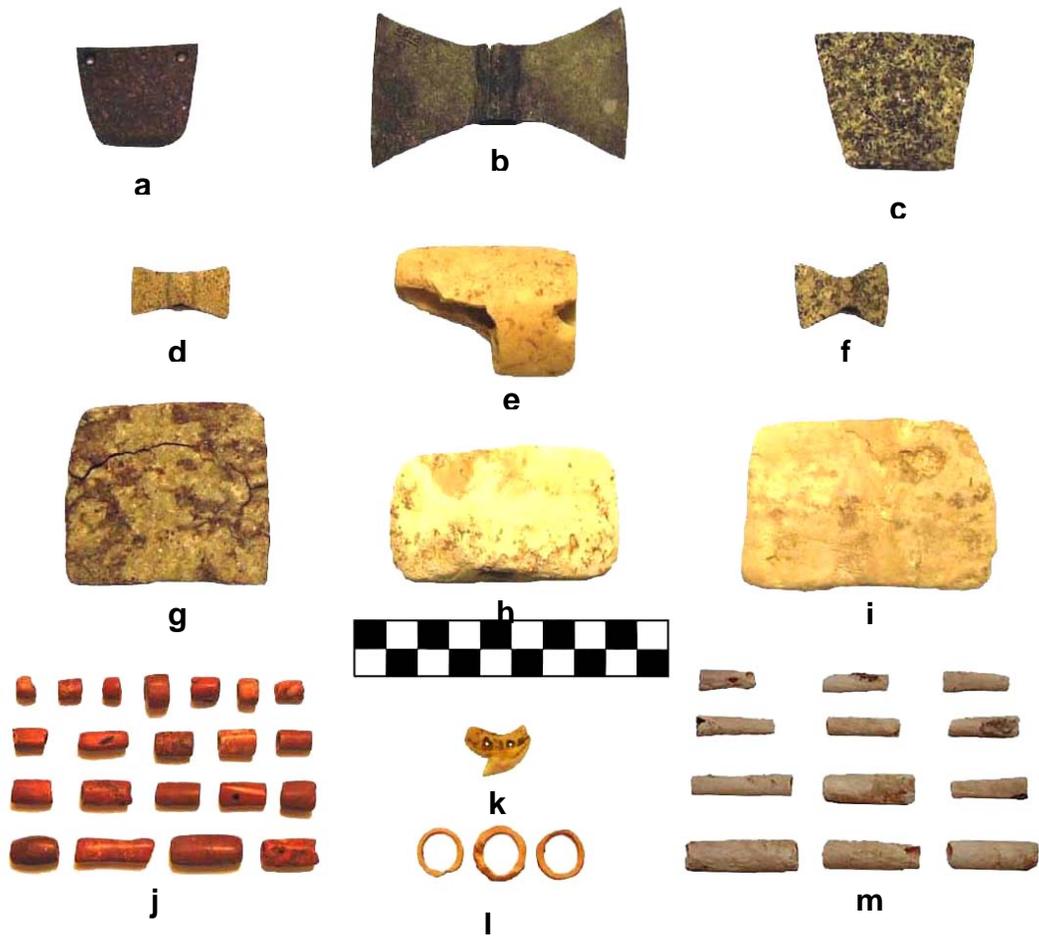


Figure 5-2. Bannerstones, pendants, stone beads, and shell beads from the Thornhill Lake Mounds, 8VO58 and 8VO59.

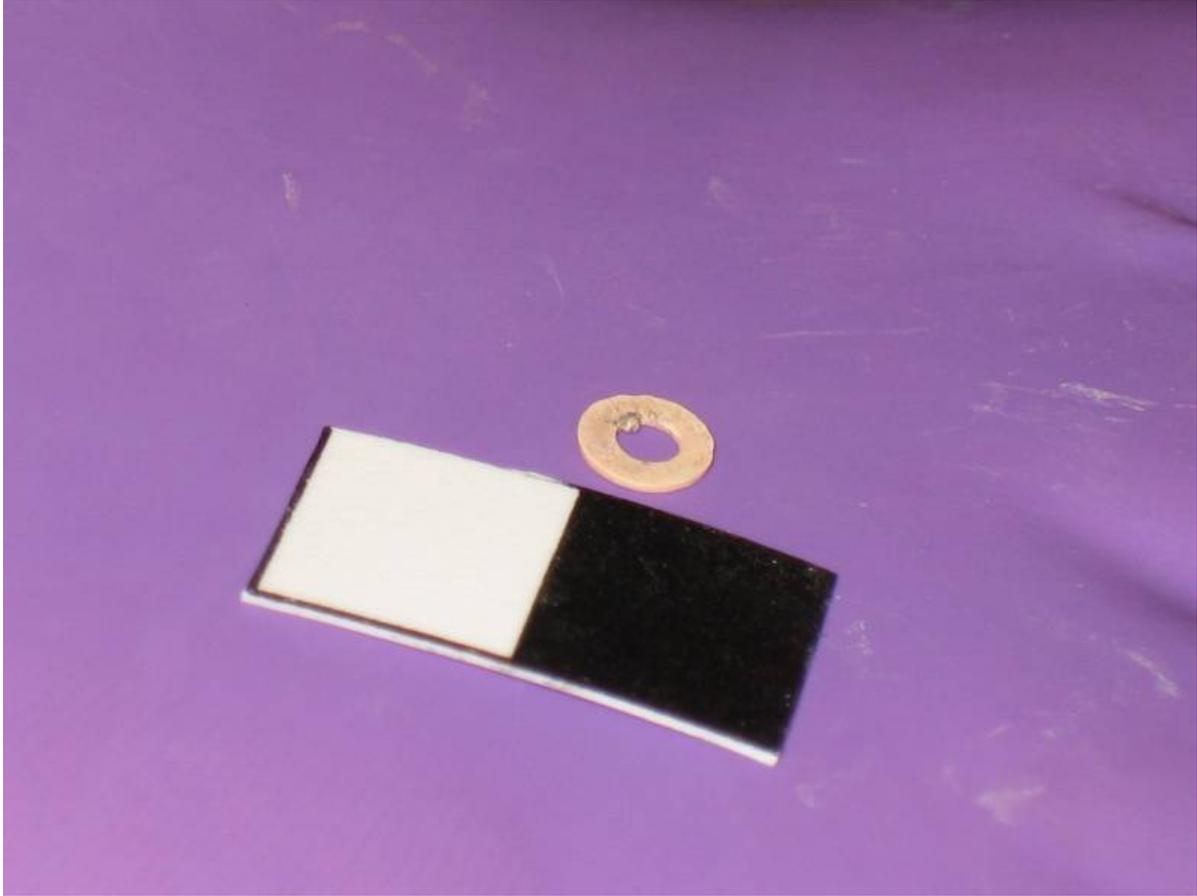


Figure 5-3. Freshwater mussel shell bead, 8VO58.



a



b

Figure 5-4. Bone awl (a) and shell adze (b) from Moore's excavations in the Thornhill Lake Midden.

CHAPTER 6 THORNHILL LAKE – EXCAVATIONS AT AN ARCHAIC MORTUARY MOUND COMPLEX

Work at the Thornhill Lake Complex began in earnest in October 2005 with the establishment of a baseline and several permanent data points. In the following years numerous field sessions to map and test topographic features in the midden were undertaken. Actual excavation in the mounds, ridges, and midden deposits took place in December 2006 and January 2007 and again in March 2007. Additional field work was carried out from August 2007 through December 2008 on weekends with volunteers. In this chapter the results of a program of mapping and excavations intended to illuminate the nature of Archaic Mount Taylor period mortuary monument construction is presented. Discussions are organized by their location within the site, i.e. Mound A, Mound B, South Ridge, etc. Following the presentation of the excavation results are discussions of the built landscape, stratigraphy, and chronology.

Field Investigations

The overall aim of field work was to obtain data that would reveal evidence for the intentional construction of the topographic other features by exposing stratigraphic profiles; gathering organic samples for radiometric dating; collecting samples of material culture and exposing features that would aid in determinations of site function in order to come to some understanding of what occurred at this place during the Mount Taylor period and how it changed, if at all, through time. Basic brass tacks archaeology must come before any meaningful discussion of monumentality and commemoration can take place. Specific field activities that produced data for this study include detailed topographic mapping of the site and its features; auger tests; shovel test units (STUs), and stratigraphic excavations of all the site's principal features.

Topographic Mapping

Topographic mapping began in October of 2005 with the assistance of University of Florida students and volunteers and continued periodically throughout the duration of field work. The result of this work is a detailed topographic map of the Thornhill Lake Complex and is the first map of an Archaic period mortuary mound complex within the SJRV and northeast Florida (Figure 6-1). Mapping was done using a Nikon DTM-310 total station. A baseline was established by setting two datum points (Datum A and Datum B) oriented north-south starting on the western slope of Mound A (Datum A) and ending approximately 10 m to the southeast of Mound B (Datum B). Using these two data points as anchors, additional data points were set across the western side of the site between the mounds and Thornhill Lake. Additional data points were set as needed. A total of 1424 points were taken and used to generate the topographic maps used in this study. Maps were generated using ArcGIS9.1™ and Surfer8™ software packages.

Clarence Moore never produced a map of Thornhill Lake. He describes the complex as consisting of two earth and shell mounds oriented in a north-south fashion, spaced about 50 yards from one another. At the northern end of the smaller of the two mounds, he indicates that two parallel shell ridges converge and that these, too, are oriented north-south. West of the mounds and ridges Moore (1892a) describes a crescent-shaped midden deposit with its “horns” pointing toward Thornhill Lake. Lying between the mounds and Thornhill Lake to the west are shell fields and “eminences.” Below a discussion of the results of the topographic mapping at the Thornhill Lake Complex is presented and includes descriptions of the principal site features, the

naming and renaming of features, and a comparison of Moore's site description to the features documented during this research.

Topographic feature descriptions

Mound A. Mound A is the southernmost and largest of the two mortuary mounds. Moore described it as symmetrical in form, presumably round in plan, and having a circular platform at its top. He indicates that this mound is the larger of the two and measures by his estimate 11 feet (3.4 m) in height with a circumference of 425 feet (129.5 m). Compared to Mound B, Mound A does in fact have a greater circumference. However, Mound B is now taller by virtue of the fact that Moore dug extensively into the center of Mound A, reducing its height considerably. Evidence of Moore's excavation is clearly visible in both the center of Mound A and on its northwestern slope. A depression is visible at the southern end of the mound summit and on the northwestern side of the mound, where it reaches its greatest height, is a spoil pile that resulted either from excavations in the mound center or its northern slope, possibly both. The remnants of the in-filled trench Moore dug up the "northern slope" can be seen as a somewhat broader, flatter area on the northwestern side of the mound. This indicates that Moore was not entirely accurate in his reckoning of direction and this point will be returned to later.

Mound B. Moore described Mound B as measuring 8 feet 10 inches (2.7 m) high and having a 295 foot (89.9 m) circumference. Currently this mound has a conical shape and its summit is more or less flat, but is still relatively small and not as flat as Moore describes for Mound A. No evidence of Moore's excavation in the center of the mound or the trench on its western slope are discernible, standing in marked contrast to Mound A. As a result of topographic mapping an interesting feature not described by

Moore was recognized. A ramp is present on the northwest side of Mound B and aligns nicely with the southeast end of the North Ridge. The ramp is distinct from the North Ridge itself, however, and this is clearly visible in the congruity of the contour lines of the ramp and their contrast with the topography of the North Ridge barring the two small knolls on its crest.

North Ridge. The North Ridge begins at the northwest side of Mound B. Initially the North Ridge takes a generally southeast-northwest orientation and aligns with the ramp on the northwest side of Mound B. At the northwest end of the southeastern segment there is a small shell knoll, and at this point it reorients and takes on a west-northwest heading. Approximately 25 m west-northwest of the first knoll is a second one. The second shell knoll is about the same size as the first and situated near the western end of the ridge. To the north and northeast is a low terrace edge which is visible both on the topographic map as well as on the ground. Beyond this low terrace no midden deposits are to be found (discussed below) and the vegetation indicates a transition to a wetlands environment.

South Ridge. Beginning on the southwest side of Mound B the South Ridge runs in a southwesterly fashion and appears to be aligned with the mounded midden deposits (West Shell Knoll) at its westernmost end and bordering Thornhill Lake. In comparison to the North Ridge, the South Ridge appears somewhat wider and has a crest that seems to taper from the northeastern end near its juncture with Mound B toward the southwest. About midway between Mound B and Thornhill Lake the ridge becomes narrower and lower in elevation but still maintaining its general southwestern orientation. Approximately where the ridge narrows an in-filled depression is present

and may possibly be one of Moore's pits. This can not be proven conclusively and other causes are certainly possible, both cultural and natural. At its terminus near the mounded shell deposits south of the Borrow Pit the South Ridge loses its topographic distinction and merges with the mounded midden deposits adjacent to Thornhill Lake (West Shell Knoll). It is possible that prior to shell mining operations at this location the ridge was more distinct.

East Ridge. Clarence Moore did not specifically note the presence of a shell ridge connecting Mounds A and B. He may not have considered this ridge to be a distinct feature and thought of it only as part of the "shell heap" that the mounds were built upon (Moore 1891a). This topographic feature has been named the East Ridge and it has a southeast-northwest orientation. On either side of this ridge there is a clearly discernible drop in elevation which contributes to its overall form and prominence. The depression immediately to the east of the East Ridge appears to be a prehistoric borrow pit that may have been the source of sand used in the construction of one or both of the mounds. Whether or not the East Ridge represents a distinct and purposefully construction linking Mounds A and B it is here designated a specific site feature due to its distinctiveness as well as for purposes of general discussion.

West Shell Knoll/Shell Mining Pit. Another site feature is a relatively large mounded midden deposits on the far western edge of the site bordering Thornhill Lake and is referred to as the West Shell Knoll. The West Shell Knoll reaches a height of approximately two meters in relation to the mean water level of Thornhill Lake. A shell mining pit has been dug into this feature. This concavity is a more or less circular pit dug down into the midden deposits. An apron of intact midden surrounds it and is most

easily discerned on the north and west sides. To the south and east are remnants of the South Ridge. A breach in the apron is discernible to the southwest and might be attributed to the use of a dragline during mining operations. The shell mining pit and the location where the dragline cut through the apron were clear and distinct shortly after the hurricanes of 2004 when elevated water levels caused Thornhill Lake to rise and filled the borrow pit and the dragline trench, giving the impression of a “keyhole.” Concreted midden is present at the bottom of this feature and is visible in several places. Currently it is not clear who mined the shell or when. Bill Dreggers (personal communication, July 2007), a local Volusia County historian, has indicated that Volusia County may have been responsible as they had mined several other sites on the east bank of the St. Johns for road fill during the early- to mid-twentieth century. Another possibility is that Reed Ellis, who once owned the land that now makes up the LMCA, or other Ellis family members, mined the shell after they had acquired the land and used it as fill.

East Shell Knoll. Located to the northeast of Mound A and due east of the East Ridge, the East Shell Knoll escaped notice owing to the dense vegetation covering all of the Thornhill Lake Complex and the fact that it is located away from the principal site features. However, during topographic mapping of the Orange Grove a survey transect crossed this feature and made visible for the first time this slightly elevated shell knoll. In size this feature measures approximately 20 m in diameter and reaches a maximum height of approximately 50 cm. When viewed from the west the height of the East Knoll is exaggerated due to the presence of a borrow pit located immediately west.

Borrow Pit. An oval-shaped depression is present due north of Mound A. This feature is interpreted as a prehistoric borrow pit. Moore (1894c) describes a similar feature on the south side of Mound A. However, considering the results of the topographic mapping of this site complex, no such feature currently exists. A plausible explanation for this discrepancy is that Moore, again, got his bearings wrong and that this feature is actually on the north side of the mound as demonstrated through this research. The sand used to construct both Mounds A and B may have come from this feature. Supporting this conclusion is the fact that grayish brown sand containing artifacts and faunal bone occurs across the site overlying the shell midden deposits save for where topographic features (excepting the mounds) are present. This sandy material entirely composes Mound B and the brown sand strata of Mound A as described by Moore (1894c). Considering this, I conclude that this feature is indeed a prehistoric borrow pit which provided the materials for constructing Mound A and/or B.

South Shell Knoll. Located to the southeast of the Western Shell Knoll and southwest of Mound A on the southwestern edge of the site, is another notable topographic feature. Currently this feature is ring-shaped. Originally it was not known whether or not this feature is the result of purposeful human agency in prehistory or if it is the result of historic shell mining operations. Limited testing in this location (discussed below) has made a case for the latter. Such a topographic feature would likely not have gone unnoticed by Moore. More than likely this feature is the remnants of a mounded shell deposit that was mined for its shell in the twentieth century. This feature's proximity to Thornhill Lake would have facilitated its destruction. The ring-shaped feature will now be called the South Shell Knoll.

Discussion

As a result of mapping several noteworthy aspects of this site's topographic features were revealed, especially where Moore's descriptions are concerned. Much of what Moore describes regarding the layout and spatial relationship of the various site features is accurate to a certain degree. However, there are a few discrepancies in their orientation and these have been revealed most clearly through the topographic mapping. Regarding the site's orientation, Moore consistently mistakes northwest for north. Mound B is located slightly to the northwest of Mound A, not directly north. The North and South ridges are described as converging at the north end of Mound B but are actually on the northwest and west/southwest sides. The trench he excavated into Mound A during his first visit is actually on the northwestern slope and, as noted previously, is visible on the topographic map of that mound. Although it could not be discerned through topographic mapping or a visual inspection of the mound's surface, it is likely that the trench through the western side of Mound B may have been on the southwest side. If nothing else Moore was consistent in confusing northwest for north. This fact may render his description of the spatial relationships of topographic features and the location of excavation units comprehensible.

Moore notes that the mounds were built upon a "shell mound." This observation has been confirmed through topographic mapping of the site as well as stratigraphic excavations (see below). The low, mounded shell platforms are discernible from the ridges by their broader and more amorphous form. Similarly, they contrast with the abruptly ascending slopes of both Mounds A and B. It could be argued that the East Ridge is part of this platform and it is probable that shell deposits in this area are

contemporary with those underlying both of the mounds, but this feature is clearly of a defined linear form and ought to be considered a distinct feature.

Lastly, the Western Shell Knoll/Shell Mining Pit and the South Shell Knoll/Ring-shaped shell deposits on the western side of the site formerly were mounded shell deposits that have been impacted by shell mining in the recent past. The fact that Moore never discussed shell pits or rings would indicate that these features are of relatively recent origin. The demonstration of these facts facilitates the reconstruction of the site's original configuration (see Chronology and Site Development below).

Excavations

Excavations at the Thornhill Lake Complex were undertaken and guided by several goals. Principal among these were exposing stratigraphic profiles, recovering samples of material culture for purposes of establishing relative site chronology and function, and obtaining organic materials for radiometric dating. This holds true for all excavation units placed across the site although not all were radiocarbon dated. Test units were placed on the major topographic features of the site as well as locations in areas displaying little to no topographic relief (Figure 6-2). Units A and B were placed on the south and north sides of Mound A respectively and Units C and D are on the southern and northwestern slopes of Mound B. By placing test units on the fringes of the mounds it was hoped that stratigraphic profiles for the mounds would be exposed and produce evidence demonstrating their temporal affiliation. Units E and J were placed on the North Ridge to explore the nature of the two shell nodes discerned through mapping. Test Unit F is situated more or less on the midpoint of the South Ridge and was the only test excavation unit placed in this feature. Units G and H were placed to the southern side of the South Ridge in a relatively flat area in order to

document and date the unmounded midden deposits in this location. One test unit, TU-I, was placed along the south edge of the West Shell Knoll bordering Thornhill Lake. A three meter long trench, Test Unit K, was placed in a slightly elevated hammock with orange trees to the east of Mound B. Previous auger testing in this location determined that shell deposits were present and seemed to be localized and mounded and TU-K, it was hoped, would produce stratigraphic evidence of this. Test Unit L was placed between Mounds A and B on the East Ridge and sought to determine if this feature was intentionally constructed. Lastly, Test Unit M was placed on the eastern side of the ring-shaped shell deposits of the South Shell Knoll south of Mound A in order to determine definitively whether or not it was a purposefully constructed or the product of early twentieth century shell mining.

Five of the 13 test units excavated at the Thornhill Lake site were terminated prematurely due to the presence of human remains and, in most cases, did not reach sufficient depths to achieve the goals that determined their placement. In an effort to gain at least some of the information that the units were hoped to provide bucket augers and Oakfield cores were put into the floors of the units A, E, and G. Below the results for all subsurface testing at the Thornhill Lake Complex are presented and discussed.

Mound A

Excavations into Mound A consisted of two 1-x-2 m units that were placed on the lower slopes of the mound near to where its slopes meet the shell platform. This was done in the hopes of avoiding burials and disarticulated human remains while at the same time documenting the strata that compose the lower edges of the mound. Test Unit A (TU-A) was placed very near the juncture of the mound deposits and the shell platform on the south side of Mound A. Test Unit B (TU-B) is located to the north-

northeast of TU-A on the north side of the mound at the approximate location where Mound A, the East Ridge, and the borrow pit/depression to the east of the East Ridge converge.

Test Unit A. Excavations revealed the presence of four strata within TU-A, three of which appear primarily to represent disturbance to the mound in this location (Figure 6-3). The fourth stratum may potentially be undisturbed and is observable in the northwest corner of the unit as well as in the floor. Stratum descriptions for TU-A are presented in Table 6-1. Due to the presence of disarticulated human remains in the disturbed strata, excavation of this unit was terminated at 50 centimeters below surface (cmbs). A bucket auger was placed in the northwest corner of the unit in order to reveal the stratigraphy beneath the unit floor and to recover material to date the mound strata not reached through excavation. The contents of each bucket full of matrix from the auger was 1/8" screened and bagged, the depth recovery for each increment of the auger was recorded, and the stratigraphic units encountered were recorded in a field notebook.

Stratum I is a disturbed sand zone with abundant organic material intermixed. Fragmented shell, bone, and artifacts are present within this stratum. Its loose, homogenous, and mixed character is no doubt the result of bioturbative processes. Cattle were once ranged on the property and feral pigs are a current nuisance in the conservation area and have been observed at the site. Clarence Moore's excavations into this mound may also have contributed to the disturbance observed in this stratum as well. Stratum II likewise is the product of disturbance and consists of a relatively thin stratum present throughout much of the unit profile save for the extreme southern end.

Possibly this represents Moore's excavation spoil washed down slope through erosion. Moore (1894a) describes strata composed of mixed shell and brown sand within the mound as well as the presence of shell deposits at its base. Considering the latter point, it is likely that Stratum II and its shell content represent displaced matrix from within the mound core. Stratum IV is represented in all of the unit walls and its loose, unconsolidated nature suggests that it too is disturbed. Only Stratum III appears to represent an undisturbed deposit, probably a mound construction episode. The more compact nature of the matrix as well as its orientation as observed in the western wall seem to support this interpretation and bears similarities to Moore's description of the brown sand and shell strata he encountered (Moore 1894c).

Additional stratigraphic information related to the sub-mound deposits was obtained through the bucket auger placed in the northwest corner of this unit. The strata encountered are presented in Table 6-2 and, in addition to Stratum III deposits identical to those observed in the walls of TU-A, three new strata were identified. Forty additional centimeters of Stratum III deposits were present below the floor of TU-A. Near the bottom of this stratum minor fragmented *Viviparous* shell was encountered. One interesting find in this stratum was a single sherd of Orange Plain pottery. Its presence might be taken as an indicator that these deposits date to the Orange period. Another interpretation, and the one preferred, is that it represents the limited and/or intermittent use of the site during the Orange period and that its vertical position is the result of bioturbation. A St. Johns Plain sherd was also recovered but this specimen was determined to have fallen out of the wall of the auger while lowering it into the hole. It was during auger insertion that the walls were bumped and the sherd fell out between

151-164 cmbs. The occurrence of these pottery fragments within an apparently Mount Taylor period deposit is puzzling. However, it likely was also introduced into the matrix of the mound in much the same way as the Orange Plain sherd. Strata V-VII represent pre-mound midden deposits and are the “mounded” midden deposits Moore describes as forming the base upon which the mounds are built.

A number of artifacts and bone were recovered from the excavation of TU-A and the auger in its northwest corner (Table 6-3). Generally speaking, cultural material is relatively infrequent in Stratum I and increases moderately in Stratum II and IIa only to decrease in Stratum III/IV. A marked increase in pottery and lithic debitage is seen in Stratum III/IV at 40-50 cmbs. St. Johns Plain and Check Stamped pottery are the most frequent types. Lesser amounts of Orange Plain and St. Johns Incised also were recovered. Lithic debitage appears primarily to be late-stage biface thinning and maintenance flakes. Many are thermally altered chert although a few specimens of silicified coral were also present. Marine shell is infrequent and no worked bone was recovered.

The stratigraphy revealed in TU-A is generally concordant with what was expected insofar as strata associated with mound building were revealed and lie atop a basal platform of shell midden. What was not entirely expected was the level of disturbance observed in the mound deposits excavated. Neither was the frequency of ceramics in these deposits anticipated considering Moore's (1894d) indications that this mound was lacking in pottery save for the two sherds he found in his excavation. Their presence and position are no doubt attributable to the limited use of this part of the site by Orange and St. Johns peoples as well as the activities of Clarence Moore which covered them

with spoil from his excavation, thus explaining their deeper than expected occurrence. The vertical distribution of artifacts appears to confirm this. The relatively low frequencies of artifacts observed in superior strata are interpreted as representing the redeposition of post-Archaic deposits containing pottery from higher up the mound slope by Moore. Diminishing artifact counts in the lower strata may indicate the mound surface prior to Moore's activities and other bioturbative processes. Termination of this unit at only 50 cmbs is regrettable as further excavation would have potentially provided a clearer picture of the stratification present as well as distributional data on artifacts which may have also rendered clear the presence, or not, of pre-pottery sand deposits related to Archaic period mound-building. Apparent pre-pottery Mount Taylor deposits are found in the mounded shell midden beneath the sand strata and, except for the one sherd of St. Johns Plain, which was seen to fall from the wall during excavation of the auger, no ceramics came from the shell deposits.

Orange and St. Johns period deposits on the surface of Mound A is, as noted above, a departure from the expectations developed based on a reading of Moore's reports on the site and Mound A in particular. The presence of post-Mount Taylor deposits at 8VO60 is discussed by Moore (1891a) in his field notes and was revealed by bucket augers and Shovel Test Units dug during this work. In both cases the presence of pottery is limited to within a short depth below the ground surface, generally between 40-50 cm. Considering this, it might not be unreasonable to assume that the post- Mount Taylor deposits encountered within Mound A are also limited to the upper 40-50 cm. The location of TU-A at the lower slope of the mound near the edge of the sand deposits associated with mound construction, deposits that are expectedly

shallower than those further up the slopes of the mounds, likely rendered them susceptible to the intrusion of post-Mount Taylor material through human agency and natural processes.

Test Unit B. Five strata were observed in TU-B (Figure 6-4, Table 6-4). A single human tooth was recovered from 35-41 cm and further work in this test unit was terminated. Strata recognized during excavation differ from those seen in profile and, like TU-A, seem to indicate some level of disturbance to this part of the mound associated with Moore's work. Deposits are at times undulating, appearing in one part of the unit, and absent in another, leaving an uneven unit floor. These undulations are largely the reason for the seeming erratic nature of the depths presented in Table 6-4 for the strata in this unit. Depths recorded for each stratum are the minimum and the maximum depth where it occurred. Stratigraphic levels excavated do not neatly coincide with actual strata. Hence, the depths of recovery for artifacts from this unit are more consistent and serial and, as a result, contain materials from several strata within them. Because of this discussions of the vertical distribution of artifacts within this unit will rely on its depth below ground surface rather than its stratum although the two are sometimes the same.

On the whole the deposits encountered in this test unit appear largely disturbed. Unfortunately a more detailed picture of the strata in this location is not possible due to the cessation of work in this unit subsequent to the discovery of a single human tooth. No auger was placed in this unit and therefore we have no real idea of just what the overall stratigraphic sequence on the north side of Mound A looks like. Only Stratum V appears to possibly represent an intact deposit. Judging from its composition and

compaction it may possibly be an original buried ground surface or “A” horizon.

Alternatively it could also represent mounding evidence at the toe of the north slope of the mound. In either case the dark and compact matrix suggests that it is an intact deposit, especially when compared to the overlying strata.

Artifact density was relatively low in TU-B and the types recovered, their frequency, and depth of recovery are presented in Table 6-5. Ceramics were recovered from 0-23 cmbs and the types identified consist of only St. Johns Plain and St. Johns Check-Stamped. In addition a single sherd of UID fired clay/ceramic was also recovered. Lithic debitage was present in every level in small amounts. Worked bone was fairly common. Marine shell was present in small amounts. Faunal remains were recovered in all levels.

As was observed in TU-A, some of the strata in TU-B may be disturbed soils redeposited from higher up the mound slope as a result of Moore’s work. Evidence supporting this interpretation are the relatively loose and mixed sand and shell deposits overlying what might be an intact deposit, perhaps a buried “A” horizon as represented by Stratum V. It may also be the case that the deposits encountered in TU-B are additional shell and soil deposits subsequent to the cessation of mound construction and Stratum V represents an old buried mound surface. The absence of ceramics in the lowest level of this unit seems to support this but it must be pointed out that this level was excavated from the center of the unit beginning about 50 cm in from the north and south walls and extended down only six centimeters. Regrettably the nature of the deposits in TU-B must necessarily remain ambiguous due to premature termination of this unit.

In spite of the disturbed soil strata encountered and the presence of mixed deposits containing pottery, much of the mound is likely of pre-ceramic Archaic origin. While no definitive evidence of this was produced during excavation of TU-A, the recovery of no less than four bannerstones in direct association with burials in Mound A, as well as pendants made from broken bannerstones and ground stone beads, stand as strong evidence in favor of an Archaic temporal assignment. Samples of charcoal were recovered from near the top of the shell deposits during augering provide a conventional radiocarbon age of 4170+/-50 B.P. (Beta-231047) or 4840-4530 cal. B.P. This general age for the construction of Mound A is supported by Sassaman and Randall's (2007) bannerstone chronology which places the Wisconsin Winged bannerstones from this mound in the Type II category, from 5200-4700 cal. B.P.

Mound B

Two 1-x-2 m test excavation units were placed on the lower slopes of Mound B. Test Unit C (TU-C) was placed at the southeastern slope of Mound B just above the juncture of the mounded shell deposits the mound is built on. Test Unit D (TU-D) was placed on the ramp feature observed on the northwestern slope of the mound in order to examine the nature of this feature. Both of these units were laid out in a northwest-southeast orientation in order to align more closely to the slope of the mound.

Test Unit C. During excavation of TU-C four strata (Figure 6-5, Table 6-6) and two archaeological features were identified. Strata I-III are more or less horizontally superimposed and appear very regular. Stratum IV is somewhat different and visible only in the east wall profile. It appears to extend up through Stratum III and into Stratum II to within 5 cm of the base of Stratum I, disrupting the otherwise regular stratigraphy of this unit. Very little shell was present in any of the strata exposed in TU-C and only a

very small amount of fragmented UID shell was present in Stratum II. Disturbance within TU-C appears primarily to be confined to Stratum I and in this case it is likely associated with bioturbation or other more recent origin. Strata II-IV seem to be intact and is attested to by the presence of Features 1 and 2 at the interface of Stratum II and III.

Artifacts are limited in Stratum I and Stratum III, Level 2 and the majority of the artifacts from this unit were recovered from Stratum II and Stratum III, Level 1 10-40 cmbs (Table 6-7). Faunal bone was more or less constant throughout with the exception of Stratum I and Stratum III, Level 1 where they were infrequent and slightly more abundant respectively. Ceramics were concentrated in Stratum II; limited in Stratum I and Stratum III, Level 1; and absent in Stratum III, Level 2. St. Johns Check-Stamped pottery dominates the assemblage and only a few sherds of St. Johns Plain are present. Lithic debitage was fairly common in all levels but is most frequent in Stratum III, Level 1 and, in addition to the waste flakes, a single biface edge fragment and a microlithic tool were also present. The microlith is similar to those from the Lake Monroe Outlet Midden (8VO53) and are strongly associated with the Mount Taylor occupation of that site (ACI/Janus 2001). Marine shell is rare and worked bone absent in this test unit.

Two features were identified in the southern half of TU-C at the bottom of Stratum II and top of Stratum III (Figure 6-6). Both were found in an undisturbed context and neither appears to be the result of animal burrowing, tree root activity, or some other natural process. They are designated Feature 1 and Feature 2.

Feature 1 is the larger of the two features identified in TU-2. This feature has a more or less elliptical plan shape and is somewhat cone to funnel-shaped in cross-section. It measures 59 cm along its north-south axis and 47 cm east-west and has a total depth of 42 cm. It was initially encountered at 64 cm below unit datum (cmbud) and reaches a maximum depth of 106 cmbud. Feature fill consisted of 10YR3/2 very dark grayish brown sand with sparse whole and fragmented shell. It was moderately compact and became looser toward the bottom. Color near the bottom of this feature changes to 10YR4/3 and signaled the bottom of the feature at its base and along its edges. Excavation proceeded by bulk sampling the entire east half of the unit and processing the western half through 1/8" screen and retaining the entire contents of the 1/8" fraction for analysis. Neither the bulk feature fill nor the 1/8" screened fractions have been analyzed. Based on its form and the nature of the fill removed it appears that Feature 1 is a steep sided pit. Judging from its stratigraphic placement this feature could possibly be attributable to the St. Johns II period. The stratum and level where Feature 1 was identified is immediately below the densest deposits of St. Johns Check-Stamped pottery.

Feature 2 is a relatively small feature round in plan with a cross-section resembling a truncated cone with a somewhat bluntly pointed base. This feature has a 21 cm diameter and measures 13 cm deep. Feature 2 was initially encountered at 71 cmbud at the base of Stratum II at its interface with Stratum III. Feature fill excavated consists of 10YR2/1 black fine sand that is lightly to moderately compact. Both the color and texture of the fill are consistent throughout and its base and sides have clearly discernible edges. The entire fill from this feature was bulk sampled and retained for

future analysis. Because of its relatively small diameter and cone-shaped cross-section it is possible that Feature 2 represents the remains of a posthole. Although it is somewhat shallow it is still within the appropriate size range and has a suitable shape for a posthole. Fill color may be due to the presence of particulate charcoal or other organic staining associated with the decay of a wooden post or its infilling with more organically enriched sediments. Functional interpretations should be considered tentative. Temporally this feature is probably associated with the St. Johns II period given its occurrence in the same stratigraphic position as Feature 1 and their immediate association with strata containing frequent St. Johns Check Stamped pottery.

The matrix composing the four strata encountered in TU-C are, by and large, devoid of shell and represent a deposit of sand containing evidence for at least two cultural occupations. The one for which the greatest evidence in terms of material culture has been recovered appear to be related to the St. Johns II occupation of this site. Strata I-III, Level 1 contain diagnostic St. Johns Check Stamped pottery and strongly support a post-A.D. 750 date for these deposits (Milanich 1994:247). Both Features 1 and 2 can be attributed to this occupation based on their stratigraphic position. The striking decrease in pottery in Stratum III, Level 1 and its absence in Stratum III, Level 2 are taken to signal the beginning of the demonstrably preceramic Mount Taylor mound deposits into which Features 1 and 2 penetrated to some degree. A similar pattern for the vertical distribution of pottery and presence of aceramic strata in Mound B was encountered in TU-D.

Test Unit D. Test Unit D was excavated initially as a 1-x-2 m unit but was reduced to a 1-x-1 m unit in the east half in order to achieve greater excavated depth in

the limited time available beginning with Stratum IV, Level 2 at 81 cmbs. Reducing the unit size allowed for more rapid excavation with the hope of reaching sub-mound shell midden deposits and this change in strategy was successful. Six major strata and three sub-strata are present within TU-D (Figure 6-7, Table 6-8). With the exception of Strata V and VI, the strata are composed mainly of sand with minor to moderate concretions. Minor Viviparous and bivalve shell was present in Stratum II but did not constitute a major component of the matrix.

Stratum I is the current "A/O" horizon and contains significant organic matter and has been substantially disturbed. This stratum is not extensive and was removed in a single 10 cm level. Stratum II may represent the first stratum of mound fill. The majority of the pottery recovered from TU-D came from this stratum. Two sub-strata are recognized within Stratum II; both characterized by loose, brown fine sand but otherwise are lacking in distinctive characteristics (there are no perceptible differences in inclusions, texture, or artifact content). Stratum III marks the first zone of aceramic mound fill encountered. Two sherds of St. Johns Plain were recovered from this stratum and both of these came from what appears to be a rotted palm root/stump and was seen to come from this location during excavation. Doubtless these two artifacts were introduced into Stratum III from the overlying Stratum II fill. Stratum IV also represent a mound fill of more organically enriched sand, perhaps due to the deposition or greater amounts of organics (faunal refuse) or due to the downward leaching of organics from Stratum III. Some minor shell is present in Stratum IV at its interface with Stratum V in the center of the eastern half of the unit.

Stratum V stands in contrast to all of the overlying mound strata in that a significant portion of it is composed of freshwater shell. Because of its slightly darker coloration, Stratum V may represent the original midden surface, the "A" horizon that was covered by the mounding of sand to form this tumulus. Stratum VI is the shell midden deposits Moore describes as forming the base of Mound B. Regrettably only three levels were excavated into Stratum VI and the depth and nature of the midden below the floor of TU-D remains unknown as does the position of the original ground surface.

Artifacts, exclusive of bone, are not frequent in TU-D and are vertically distributed throughout deposits (Table 6-9). Lithic artifacts are most abundant followed by worked bone. Marine shell is not very frequent and, with the exception of a shell pendant, consists only of small fragments of various species. The pendant was recovered from Stratum VI, Level 3 and is similar in form to the two specimens made from broken bannerstone wings excavated by Moore from Mound A. Lithic artifacts consist primarily of debitage but tool fragments and a complete biface were also found. The complete biface is a UID Florida Archaic Stemmed type and the fragments consist of two biface edges and a stem. A single distal fragment of a unifacial tool was found as well. Notable among the worked bone are two beads. One of the beads is exceedingly thin, fragile, and apparently produced through grinding as evidenced by the faceting observed over much of its surface. The remaining worked bone fragments are medial and distal fragments of pin/points.

Of the four test units excavated at 8VO58 and 8VO59 TU-D has produced the most convincing evidence for Archaic Mount Taylor period mound construction.

Ceramics are limited to the upper two strata and do not occur below a maximum depth of 46 cmbs, leaving a minimum of 86 cm of preceramic deposits and 42 cm of Archaic period mound fill. Likely this entire monument is Archaic in age and what little pottery is present was introduced by later St. Johns II peoples some time after A.D. 750 (Milanich 1994:247).

The recovery of abundant faunal material, lithic waste flakes, and other presumably domestic debris raises the question of what their presence in the mound fill represents. Is it the result of using shell-free Archaic midden as mound fill? Was it feasting atop the mound as a part of the mound-building/mortuary ritual? It is not certain. If these deposits are the result of mining older shell-free midden then dating organics from the aceramic mound fill could well produce an age that is too early, predating the at construction of the mound. If the result of later St. Johns peoples then the date could be well after the construction of this mound. However, should it have been introduced as a result of on-site activities by the people who actually built this mound it would go a long way toward making the case that Mound B is a Middle to Late Archaic construction. Considering that it is not presently possible to discern the origin of the mound fill, it seems best to date the basal shell platform as *terminus ante quem* for Mound B. At any rate, relative dating indicates that Mound B is an Archaic period construction, a fact supported by the recovery of three bannerstones in direct association with burials from within its core (Moore 1894d). Radiometric dating provides a beginning date for this monument and more accurately places it within the Archaic.

A charcoal sample collected from Stratum VI during excavation provides a terminal date for shell mound accumulation and the beginning of mound construction. A

conventional radiocarbon age of 4970 +/- 40 (Beta-231048) or 5860-5600 years cal. B.P. was obtained from charred material recovered from the lowest level of Test Unit D. Based on this radiocarbon age and the absence of fiber-tempered pottery in Mound B, it appears that mound construction occurred between 5860 and 4500 cal. B.P. Additional data confirming this general time frame comes from Sassaman and Randall's (2007) bannerstone chronology for the Savannah River Valley in Georgia, the likely origin for the bannerstones recovered from Mound B. According to Sassaman and Randall, the Type II bannerstones recovered from Mound B date between 5200-4700 cal. B.P., a date range well within that suggested above, falling between the initiation of mound construction and the introduction of fiber-tempered pottery. Regrettably no other dates are available for the charcoal collected from the aceramic mound fill from Mound B owing to the fact that it is not certain what is being dated since the sand used to construct the mound was brought in from elsewhere and do not represent *in situ* deposits, contrasting with the *in situ* midden deposits producing the date discussed above. While the date range suggested for the construction and use of Mound B is considerable, some 1660 years, it is nevertheless sufficient to demonstrate that this mound was constructed during the preceramic Archaic and, considering Sassaman and Randall's (2007) bannerstone chronology, likely occurred between 5860 and 4700 years cal. B.P.

Thornhill Lake Midden

Although all units not placed into Mounds A and B are technically in the Thornhill Lake Midden, only those *not* placed on topographic features such as the North, South, and East ridges are discussed here. Excavation units placed on the latter features are

discussed in sections below. Work discussed here includes excavation of Test Units G and H as well as close-interval augers tests to the west of Mound A.

Test Unit G. Test Unit G was placed within a flat area to the south of the South Ridge. Excavation was terminated after three complete levels and half of a fourth, where human remains were found in the south half of this unit. Three teeth, all molars, and a mandible fragment with a premolar still in its socket, were encountered. Upon their discovery excavation within this unit ceased. All of the human remains originated along the western side of the southern half of the unit and, with one exception, came from the southwest corner. Prior to reburying the remains in their original locations a bucket auger was dug into the southern half of the unit in order to gain stratigraphic information for the underlying strata that could not be reached in this unit due to its termination. Upon completion of the auger the remains were returned to their original location and the unit was backfilled.

Only two strata were exposed in TU-G (Table 6-10) and both are interpreted as shell-free midden. Stratum I contained minor amounts of faunal bone and prehistoric artifacts. Stratum II is a relatively undisturbed midden deposit lacking shell and containing abundant faunal bone. Artifacts, notably pottery and lithic debitage, occur in moderate frequencies (Table 6-11). A few examples of worked bone and a single piece of green historic bottle glass were also found. The ceramic sequence observed is consistent with conventional ceramic chronologies for the SJRV although some mixing is evident. Waste flakes recovered are generally small in size and measure less than 3 cm². A single microlith is the only formal tool recovered in this unit. Similar tools to this one have been identified at two sites on Lake Apopka in Orange (8OR487/507) and

Lake Counties (8LA243) (Austin et al. 2006; Endonino et al. 2007). At these sites microliths like the one came from St. Johns II and St. Johns I contexts respectively, possibly ceramic Late Archaic as well although this is yet to be determined conclusively. While the microlithic tools found along the St. Johns have to date been associated with Mount Taylor peoples (ACI/Janus 2001; Austin et al. 2006; Endonino et al. 2007), there are discernible morphological differences between these and those made by St. Johns I and II groups around Lake Apopka. Given its context of recovery, its association with St. Johns Plain and Check-Stamped pottery, and its similarity to forms identified around Lake Apopka, this particular artifacts is believed to be attributable to the St. Johns I or II periods.

The auger test placed in the center of the southern end of TU-G revealed a complete stratigraphic sequence beginning at the base of Stratum II, Level 3 at 30 cmbs and reaching 33 cm below the primary midden deposit (Table 6-12). Strata III through VI are the principal shell midden deposits. At a depth of 165 cmbs Stratum VII was reached. Shell midden deposits are nearly absent and the matrix is characterized by dark gray wet sand with a clearly discernible organic content and appearing somewhat mucky. A minor amount of highly fragmented and scattered shell is present. The dark coloration and organic nature strongly suggest that it is the buried original ground surface prior to the deposition of midden by Mount Taylor groups. Underlying this original ground surface is a light gray sand zone, completely saturated, and lacking shell. No artifacts indicating a pre-midden occupation were recovered.

While it is regrettable that TU-G was not able to be excavated as a 1-x-2 m unit from the ground surface to sub-midden sand, the auger placed in its south half has

provided important information on the composition of the midden deposits at this site as well as the nature of the original ground surface below the midden. Nuanced descriptions of the strata and their relationships to each other are not possible using the bucket auger but it did reveal, in a coarse-grained fashion, the general stratigraphic units present and their character. Clearly several episodes of shell deposition occurred and all apparently during the Mount Taylor period. It is impossible to tell whether or not there was any mounding activity, now obscured and buried, occurring in the non-mounded shell midden deposits with a single auger. If the nature of the terrain in the vicinity of TU-G is any indicator, particularly to the south and southwest, shell deposition in this vicinity was done in a more or less horizontal manner. The effect of this behavior, however, was to raise the elevation of the ground some 1.16 meters above its original surface through the accumulation of shell over a large area.

Test Unit H. Test Unit H is a 1-x-1 m unit placed on the south side of the South Ridge approximately 20 m south-southeast of TU-F following the termination of TU-G in a second attempt to investigate the nature of the non-mounded midden deposits in this part of the site. A total of six strata, three sub-strata, and one feature were encountered (Figure 6-8, Table 6-13). Excavation in this unit reached a total depth of 134 cmbs. A bucket auger was excavated into the unit floor prior to backfilling and revealed the total depth of the midden deposits, the height of the water table, and a buried A horizon representing the old ground surface.

Deposits in TU-H were anticipated somewhat based on the previous results of the STU's located a short distance to the east, most notably STU-1 (discussed later). Expectations of shell-free midden overlying dense, concreted midden were met. Shell-

free midden deposits consisting of loose gray and brown sands characterize Strata I-III. Stratum IV marks the beginning of the shell midden deposits and measure approximately 1.6 m in thickness. From the beginning of this stratum the midden deposits were concreted, very dense, and difficult to excavate. Excavation with trowels was time consuming but a pickaxe was used to break up these concreted deposits and made excavation possible, if challenging. Three sub-strata are present within Stratum IV. Stratum IVa and Stratum IVb are thin lenses of gray sand with minor amounts of fragmented shell that stand in marked contrast to the typical Stratum IV material. These thin lenses are frequently flecked with charcoal and seem to possess laminar banding suggestive of colluvial or perhaps alluvial activity related to periods of high water and inundation. Stratum IVc is a sandier zone with minor shell and abundant charcoal inclusions. Midden deposits in Stratum V are of a significantly different character than Stratum IV, becoming substantially less concreted, looser, and easier to excavate. More whole shell was evident and there was an increase in *Pomacea* as well. Excavation terminated at 134 cmbs after only two levels into Stratum V due to time constraints. A bucket auger was placed into the floor of the unit and revealed that an additional 74 cm of Stratum V below. After only 18 cm, water was reached in the auger. Beginning at a depth of 208 cmbs a black sand zone containing fragmented shell was reached and is interpreted as a buried A horizon representing the original ground surface. Shortly after reaching this point further excavation with the bucket auger became impossible due to slumping of the walls as a result of being below the water table.

Cultural materials were not very frequent in TU-H and consist principally of faunal bone, lithic debitage, and marine shell fragments (Table 6-14). Pottery is confined entirely to the shell-free midden within Strata I-III. St. Johns Plain is most common with St. Johns Check-Stamped and Orange Incised coming in a distant second and third respectively. Lithic artifacts recovered consist of debitage and a distal biface fragment and it is most abundant in Strata II and III. Marine shell appears suddenly in the lower levels of Stratum IV and persists into Stratum V whereas it was completely absent in all strata and levels prior to Stratum IV, Level 6. Bone increases consistently and rapidly from Stratum I through Stratum III. Within Stratum IV the recovery of faunal bone was hampered by the fact that the deposits are concreted and thus makes recognition of bone extremely difficult except for the largest pieces, usually deer and turtle. For this reason faunal bone is noticeably sparse in Stratum IV. Near the bottom of Stratum IV and faunal bone begins to become more visible with reduced concretion within the midden deposits. In Stratum V faunal bone is more readily identified and collected, again due to a decrease in concretion.

Feature 4 (Figure 6-9) is the only archaeological feature encountered in TU-H and was identified within 5 cm of the top of Stratum IV at a depth of 51 cmbs. In plan this feature is elliptical and has a basin-shaped cross-section. As excavated it measures 76 cm N-S along the western wall, 47 cm E-W at its widest point, and has a total depth of 14 cm. Feature fill is composed of two distinct zones. Zone 1 is dense, concreted pale brown (10YR6/3) shell and sand. Zone 2 underlies Zone 1 and is slightly compact very dark gray (10YR3/1) ashy shell and sand that becomes very dense and concreted toward the bottom and it is this extremely dense concreted midden that marks the

bottom and edges of this feature. Charcoal flecks and fragments are common throughout. Shell within the feature fill is extensively burned and calcined, consisting principally of *Viviparous* and bivalve that is both whole and fragmented. Feature 4 was excavated and sampled by zone. All fill from Zone 1 was 1/8" screened in the field and retained for later analysis. Zone 2 underlying Zone 1 was sub-sampled. A gallon sample of Zone 2 fill was 1/8" screened in the field and saved. The remainder was 1/4" screened in the field and also kept for analysis. Based on the abundance of burned shell and charcoal within Feature 4 it is interpreted as a thermal feature of some kind, probably a hearth. A sample of charred material from this feature was submitted for analysis (discussed below) and returned a date that is clearly Mount Taylor in age.

The stratigraphy exposed in TU-H exhibits clear horizontality in its accumulation. The horizontal nature of the deposits in combination with the presence of a hearth feature, clear evidence of domestic activities, as well as the relatively homogenous nature of the deposits, suggest that midden formation off of the South Ridge in this location was one most closely related to domestic activities. The unexceptional nature of these deposits is further supported by the identification of only two major shell midden strata, Stratum IV and Stratum IV. The fact that the shell deposits are lacking entirely in pottery is telling and indicates a Mount Taylor affiliation. Here again, as has been the case in all of the units excavated so far, the entire prehistoric ceramic sequence of the SJRV and east Florida is contained within the shell-free midden, generally in the upper 50 cm of the deposits.

Two radiocarbon dates were obtained from deposits from TU-H, one from charcoal fragments recovered from Zone 1 in Feature 4 that returned a conventional radiocarbon

assay of 5190 \pm 40 B.P. (Beta 231052) or 6000-5900 cal. B.P. A second conventional radiocarbon age of 5130 \pm 50 B.P. (Beta 231053) or 5990-5740 cal. B.P. was obtained from charcoal recovered from Stratum V, Level 1, consisting largely of apple snail. These dates appear inverted but are penoncemporaneous and overlap thirty years at one sigma. What they appear to reveal is that the midden deposits in this location accumulated in a relatively short period of time and seems to have occurred prior to the construction of Mounds A and B and are associated with the earlier occupation of this site.

Close-Interval Auger Testing. Auger tests at close intervals (10 m) across 8VO60 are intended to reveal the nature of the shell-free midden, shell midden, and culturally sterile sub-midden soils. Only a short, partial transect of augers was excavated beginning 10 m west of Datum A at 1000N-990E and ending at 1000N-950E (Figure 6-10). While not very extensive and decidedly incomplete, a few observations regarding the nature of the deposits in this part of the site can be offered.

A midden deposit relatively free of shell and containing frequent to abundant bone and artifacts is present and generally increases in thickness from east to west. The only exception is 1000N-990E where this stratum measures 61 cm deep. Color for this stratum is typically gray to dark gray and contains occasional fragmented shell. Thickness ranges from a minimum of 32 cm at 1000N-980E to a maximum of 52 cm at 1000N-950E. The only artifact recovered from this stratum is a single chert flake recovered between 25-61 cmbs in auger 1000N-990E. Bone was recovered from this stratum in all of the augers.

Shell midden deposits between 1000N-990E and 1000N-970E are moderate in density and composed principally of whole and lightly fragmented *Viviparous* and both whole and crushed bivalve with lesser amounts of highly fragmented *Pomacea* in a light gray, ashy sand matrix. With increasing depth *Pomacea* becomes more frequent and is become brown and wet. Concreted midden was reached in all but one of the augers (1000N-970E). At 1000N-990E concreted both whole and fragmented and overlying midden. Sands in the lower midden deposit as are both *Viviparous* and bivalve although the latter two occur in lesser frequencies than in midden was encountered at 120 cmbs. Concreted midden in the remaining augers was reached between 60-63 cmbs with the exception, as noted above, of 1000N-970E. Minor to moderate amounts of bone were recovered from the shell midden deposits but no other artifacts were recovered. Sub-midden soil was reached at 197 cmbs at 1000N-970E. This stratum was very wet and reached the water table. Gray sand with common to frequent concretions characterizes this stratum and is in all probability the pre-midden horizon. No artifacts were present nor was bone.

North Ridge

North Ridge Augers. Testing of the North Ridge began at what appeared to be the top and center of this topographic feature (Figure 6-11). Transects of augers were dug at 10 m intervals as near as possible in all four cardinal directions. This was not always accomplished given the presence of several large live oaks and a number of cabbage palms. An auger (BA-1) at the apex of the easternmost shell knoll on the North Ridge encountered shell deposits immediately underneath the humus and persisted to a depth greater than 2 m below ground surface. Auger transects were anchored to this central point and extended outward in all cardinal directions. The

northern transect revealed that midden deposits are absent at distances greater than 10 m. Similarly, the eastern transect demonstrated that shell deposits were very diffuse to absent beyond about 15 m. The southern transect produced shell deposits but these were situated beneath a shell-free midden composed largely of sand and bone. Along the western transect which follows the North Ridge for approximately 50 m, midden deposits were also present and, like the southern transect, was overlain by 50-70 cm of sand.

Augers on the North Ridge show that it is a mounded shell deposit with clearly discernible edges to the north and east. To the west and south sand deposits overlie the midden and ranges in depth from 40-70 cm. Shell deposits appear to be preceramic in age as none of the augers in the shell produced any ceramics. St. Johns pottery was recovered from a few of the augers but only from the sand stratum overlying the shell. The westernmost auger on the North Ridge, BA-9, revealed the sand-overlying-shell stratigraphy and within it encountered St. Johns Plain pottery, three human teeth, and a mandible fragment with a molar still in the socket. BA-9 was terminated immediately in this area and no additional augering or other testing was conducted in the vicinity.

An interesting pattern is revealed by the east-west auger transect on the North Ridge (Figure 6-11). Two areas characterized by slight rises in the surface topography (shell knolls) correspond to the presence of peaks in the sub-surface shell deposits. Troughs between the two peaks on the North Ridge have shell deposits that are more deeply buried and covered by deeper sand deposits. To the extent to which it is currently understood, it appears that at least two low shell mounds were created by Mount Taylor peoples along the North Ridge and are separated by a distance of

approximately 25 m. A pattern similar to this was observed by Randall and Sassaman (2005) at 8VO215 on Hontoon Island where a series of low, mounded shell deposits were arranged in a linear fashion to the southwest of a large, apparently ceremonial shell monument (8VO214).

It is uncertain whether or not the sand stratum overlying the Mount Taylor period shell deposits on the North Ridge are the result of human agency or natural processes. Moreover, it has not been adequately resolved whether or not the sand deposits, if the product of human action, were deposited by Mount Taylor peoples or those of the later St. Johns groups. The presence of St. Johns pottery in the sand stratum seems to suggest that it was added to the pre-existing Mount Taylor midden ridge by St. Johns period people. However, the relative infrequency of sherds present in the sand stratum, coupled with its generally shallow vertical distribution (within the upper 50 cm), indicates that the post-Archaic use of this feature, and the site in general, was not substantial. Bioturbation as much as cultural deposition may explain the presence of St. Johns pottery, even at a depth as great as 50 cm. If the sand deposits overlying the midden on the North Ridge are the product of St. Johns peoples, it is no less intriguing than if it was the handiwork of Mount Taylor groups.

Test Unit E. Test Unit E was placed on the northern slope of the westernmost shell node on the North Ridge and northwest of Mound B. A series of augers in this vicinity (discussed above) indicated that midden deposits rapidly drop-off to the north of this topographic feature and are absent by 10 m north of BA-1. Test Unit E was placed about midway between BA-1 and BA-2 on this mounded deposit in the hopes of exposing its internal structure and allowing for a determination of whether or not it was

intentionally mounded or accumulated gradually. Work in this unit was terminated after excavating only a single 10 cm level due to the presence of disarticulated human remains. Specific elements identified include several teeth (molars), a possible carpal (hand bone), a cranial fragment, and a possible clavicle (collar bone). All of the human bone was reburied and the unit backfilled.

Deposits encountered consist primarily of 10YR3/2 very dark grayish brown fine sand with abundant roots and grades to a 7.5YR3/1 with a subtle red hue and was designated Zone B (Figure 6-12). Ferruginous concretions were commonly encountered but did not constitute a significant component of the matrix in this zone. A second deposit was present in the southwest corner of this unit and was designated Zone A. Zone A is characterized by 10YR2/2 very dark brown medium sand with abundant crushed *Viviparous* shell. Its edges are poorly defined and it is not a feature. Zone A is the top of the shell stratum underlying Zone B and dips to the south with the slope of the current ground surface.

Two Oakfield cores confirm the nature of the subsurface topography. Oakfield Core 1 (OF-1) in the southern half of TU-E showed that abundant whole and crushed *Viviparous* shell was present immediately below the floor of Level 1 (see Figure 6-12). Oakfield Core 2 (OF-2) located in the north half of the unit showed that within the span of approximately 116 cm from south to north the shell stratum dips approximately 20 cm, a fairly significant drop in such a short distance. Taken together, the emergence of the shell midden in this unit in the southwest very near to the ground surface and the presence of shell midden deposits buried by approximately 20 cm of shell-free soil confirms the mounded nature of this deposit.

Only two artifacts were recovered from TU-E and include a single fragment of worked bone and a distal biface fragment made of thermally altered chert. No ceramics were recovered from this unit and this is consonant with the results of augering in the vicinity. An estimated 200 fragments of faunal bone was recovered from TU-E and these were reburied along with the human remains.

In spite of the very limited nature of the work in TU-E it has supported the findings of the bucket augers in this location and shown that this topographic feature on the North Ridge is in fact a mounded deposit of shell overlain by a relatively shell-free sand zone. Test Unit-E, while not providing the insights into the nature of subsurface midden deposits in this location, as was hoped, it did provide additional evidence in support of this feature being a mounded shell deposit with strongly sloping edges that is masked to some degree by an overlying sand stratum which, in and of itself, may represent additional evidence for the purposeful construction on the North Ridge. This proposition is not unreasonable considering that both Mound A and Mound B are constructed principally from sand and are situated atop an older shell midden deposit. Given the lack of ceramics in this test unit and BA-1 nearby, it is probable that the deposits are Mount Taylor in age.

Test Unit J. Test Unit J was excavated on the knoll at the western end of the North Ridge and is approximately 25 m west of TU-E. Excavation in this unit extended through the entire midden deposit and reached sub-midden soils. Six major stratigraphic zones are recognized in TU-J (Figure 6-13, Table 6-15). Two of these, Stratum IV and Stratum V, are further divided into four substrata: Stratum IVa and IVb

and Stratum Va and Vb. Both of these subdivisions are based on changes in the shell content and condition and the degree of concretion observed.

Stratum I is a thin horizon composed largely of sand representing the disturbed upper organic zone and containing abundant small roots, leaf litter, and minimum amounts of fragmented shell. Stratum II is slightly more compact and contains considerably more shell, most of which is fragmented, as well as a few small roots. Stratum III is also composed largely of sand with minor shell inclusions. Clear disturbance was present in the south wall and appears to be associated with natural bioturbative processes such as a tree fall or animal burrow. Taken together, Strata I-III represents various zones of disturbance to the upper deposits of the North Ridge. Aside from the burrowing and tree falls mentioned above, cattle ranching may also have contributed to this disturbance as this land was historically used for rangeland. Beginning with Stratum IV midden deposits appear to be more intact although some disturbance associated with that described for Stratum III also impacted this stratum as well but in a less significant fashion.

Deposits in Stratum IV are extensively burned and calcined. Sand within this stratum is very ashy and dry with abundant charcoal flecks and fragments. Differences in the amount of crushing and shell content are discernible. Stratum IVa is more heavily burned and fragmented whereas Stratum IVb is less extensively fragmented although still burned. Like Stratum IV, Stratum V also has two subdivisions: Strata Va and Vb. Deposits in Stratum Va are lightly concreted and those of Stratum Vb are significantly concreted with large masses of midden and sand. Stratum VI represents a transition

from shell midden deposits to a matrix characterized mostly by sand although some shell is still present. It is probably the original ground surface below the North Ridge.

Overall cultural materials are not very abundant in TU-J (Table 6-16). Faunal bone accounts for the majority of recovered. Worked bone was found occasionally and consists only of medial and distal pin/point fragments. Marine shell too was recovered, consisting of several fragments of *Dinocardium spp.* (cockle), *Busycon*, and *Mercenaria*. Pottery is limited within TU-J and most abundant in Strata I-III. Ceramics are both St. Johns Plain and Check-Stamped. Lithic artifacts are distributed from near the top of the deposits to the bottom. Below Stratum V, Level 6 lithic artifacts occur more consistently and include both lithic debitage and biface fragments. Two distal biface fragments were found in Stratum VI, Level 1 and one of these was during wall clean-up. Subsequently during further wall cleaning the proximal end of the first wall cleaning biface fragment was found and the two mend to form a small reworked Newnan point. The presence a Newnan point in Stratum VI indicates that this stratum is at least as old as the average age of several radiocarbon dates associated with these points, some time between 6000-5460 B.P. (Milanich 1994:76). Debitage accounts for the balance of the lithic artifacts. Most are small and are probably the result of tool maintenance.

A column sample was excavated from the east wall of TU-J. Excavation was by arbitrary 10 cm levels within the observed strata. Strata I-III were 1/8" screened in the field and the entire contents bagged for analysis. The remainder of the material was returned unprocessed to the Laboratory of Southeastern Archaeology for future processing.

Within TU-J pottery is present only within the upper 50 cm of the deposits and suggests a post-Orange temporal affiliation for Strata I-III. Below 50 cm in TU-J shell midden measuring approximately 110 cm in thickness are preceramic and attributable to the Mount Taylor period. This interpretation is bolstered by the recovery of a Newnan point in Stratum VI, Level 1 at 129 cmbs. Abundant charcoal was present throughout this unit in all strata. Charcoal samples were submitted for AMS dating and the results are discussed below. Limited domestic activities are indicated by the presence of bone and small amounts of the lithic tools and debitage, bone tools, and marine shell fragments discussed above.

Strata exposed within this test unit have a relatively horizontal orientation and may be as much a function of the size of the test unit as it is the nature of the deposits. The extensively burned and crushed shell and ashy sand of Stratum IV are a curious departure from the mixed shell and sand deposits encountered throughout the rest of the site. Extensive burning and crushing are clear but whether or not this was an *in situ* occurrence or the result of dumping will require additional testing. Concreted midden within this test unit is consistent with what has been observed elsewhere within 8VO60 but it does differ somewhat in that it was not as hardened as that seen in TU-H. While difficult to excavate, it was still more readily broken up and removed than TU-H.

Exposing a complete stratigraphic profile in the North Ridge is among the most important contributions of this unit to an understanding of this topographic feature and the formation of this site complex generally. The thickness of Strata V and VI and their relative homogenous nature suggest that they were deposited over a relatively short period of time. Differences between these are only in the quantities and shell types

present, the color of the sand in the matrix, and degree of concretion. Lenses of crushed sand and dark, organically enriched earth suggestive of a living surface are not present. Strata observed in TU-J are interpreted as the use of subsistence remains as construction media. It was piled up over a relatively short period of time and the fact that much of the shell, especially *Viviparous*, is whole also suggests that it was not exposed for a sufficient period of time to undergo trampling and breakage through other natural and mechanical processes. Pockets of whole *Pomacea* also point to this same conclusion and perhaps make the point better considering how easily these shells are broken. Most of the fragmented shell observed was bivalve and *Pomacea*.

Two AMS dates were obtained from charcoal fragments from TU-J. The first comes from the demonstrably preceramic deposits in Stratum V and the second from the sub-midden sand deposits in Stratum VI. The youngest sample came from Stratum V, Level 1 and dates to 5170 \pm 40 (Beta 231050) rcybp or 5990-5900 cal. B.P. A date of 5420 \pm 40 rcybp (Beta 231051) or 6290-6180 cal. B.P. was returned for the sample from Stratum VI, Level 2. These dates indicate that the deposits of Strata IV-VI accumulated over a period of approximately 400 years cal. B.P. at the two sigma range. Additional Mount Taylor deposits above Stratum V are possible but, although the ceramics in Strata I-IV could have been introduced through bioturbation, a more conservative and cautious approach was taken and charcoal samples from these strata were not dated.

South Ridge

Testing on the South Ridge consisted of three Shovel Test Units and one 1-x-2 m test unit, TU-F. The Shovel Test Units (STU 1-3) measured 50-x-50 cm square and were excavated across the South Ridge at the point where it narrows (see Figure 6-2).

All of the STUs were laid out on a 310° azimuth at 10 m intervals. STUs were placed so that one unit was on the south side of the South Ridge, one was on the crest, and one was on its north side. The purpose of these STUs was to reveal the stratification present within the South Ridge and the un-mounded midden deposits on its north and south sides and to recover samples of material culture that would allow for an assessment of the age of the components represented in this location.

STU-1. STU-1 is located to the south of the South Ridge in a relatively flat area. Both shell-free and shell-bearing midden is present. Five strata were observed in the profile of this test and two major stratigraphic divisions are evident: a shell-free midden and a shell-bearing midden (Figure 6-14, Table 6-17). Bone is very abundant in the shell-free midden and rapidly diminishes in abundance within the shell midden. In the shell midden several zones of alternating concreted, burned shell and sand matrix separated by less concreted shell and sand is present within Strata IV and only variations in sand color differentiate them. Evidence of burning in the form of burned shell and charcoal was commonly observed. Artifacts generally were not recovered in STU-1. Pottery was present only in the shell-free midden and no pottery was present within the shell midden deposits. Lithic debitage was recovered from the shell-free midden only and a single biface stem was present within the shell midden. The only other artifact recovered from the shell midden deposits is the *Busycon* adze. In terms of the temporal periods represented by these deposits, it seems apparent based on the distribution of pottery that Strata I-III represent the entire ceramic sequence in the St. Johns whereas Strata IV-V are preceramic Archaic Mount Taylor period deposits.

STU-2. STU-2 is located near the crest of the South Ridge 10 m northwest of STU-1. Five strata are recognized in this unit (Figure 6-14, Table 6-18). Several alternating zones of burned *Viviparous* and bivalve shell are present in Strata IV and V and these are separated by relatively loose zones composed of sand and midden material which is occasionally concreted into small masses. These may represent several superimposed episodes of *in situ* burning or deposition of burned sand, shell, and ash deposits, possibly the results of hearth cleaning and dumping although other activities related to the mortuary rituals carried out the site are also possible. Similar strata were also observed in STU-3 and Stratum IV in STU-3 may correlate with Stratum IV or V in this unit.

Pottery again is confined to the upper three strata, between 0-53 cmbs, and below deposits are lacking ceramics. Artifacts and faunal bone typically decrease with depth and the presence of extensive concretion in the lower strata inhibits the recovery of faunal bone by making it difficult to discern or obscuring it entirely. The presence of such extensively concreted midden deposits makes the recovery of a representative sample of faunal bone difficult. Like STU-1, STU-2 has an abbreviated ceramic bearing sequence spanning Orange, St. Johns I, and St. Johns II. Evidence of these occupations is confined to Strata I-III, below which no pottery is present. Unfortunately no positive Mount Taylor attribution was obtained. However, Strata IV and V are likely Mount Taylor period deposits based on the absence of pottery.

STU-3. STU-3 is located 10 m northwest of STU-2 on flat ground on the northern side of the South Ridge. Four strata were present within the unit (Table 6-19). Ceramics and bone are concentrated in the upper three strata between the ground

surface and 53 cmbs. Midden deposits are generally loose in the upper strata and it was not until Stratum IV that concretion became prevalent. The recovery of pottery from the upper three strata within 53 cm of the ground surface is very much in agreement with the findings of STU-1 and STU-2. Deposits below 53 cmbs did not contain any pottery or other artifacts. Like the two previous units, the ceramic-bearing Strata I-III is attributable to the St. Johns I and possibly II periods whereas Stratum IV appears to date to Mount Taylor times.

A number of common features are recognizable in the strata exposed in these STUs and the vertical distribution of artifacts and faunal bone within them. Relatively loose to lightly compacted shell midden deposits are typically found in the upper two to three strata. Beneath these loose strata and beginning at depths ranging from 26 to 53 cmbs, but always by 55 cmbs, are stratigraphic units characterized by evidence of burning in the form of burned shell, charcoal, and concreted midden. An interesting variation is the presence of alternating zones of concreted midden and somewhat loose gray-brown sand and shell. Another common feature observed in all three of the STUs is the co-occurrence of abundant bone and pottery in the loose, unburned, and concretion-less midden. Similarly the dramatic decrease in all artifacts and bone in the underlying concreted deposits was observed in all of the STUs. Judging by these patterns it appears that the lower, concreted strata lacking pottery are attributable to Mount Taylor hunter-gatherers who first began to deposit shell at this site and the upper 50 or so centimeters of pottery-bearing midden was laid down by Orange and later St. Johns I and II peoples.

Test Unit F. Test Unit F was placed at the crest of the South Ridge near the point where it narrows and takes on a more south-southwesterly orientation. Excavation of TU-F proceeded as a 1-x-2 m unit but was reduced to a 1-x-1 m unit beginning in Stratum IV, Level 4. This unit did not reach the sub-midden soil horizon during excavation. However, a bucket auger was placed in the southern end of the unit and reached sub-midden deposits.

Five strata, four sub-strata, and four archaeological features were encountered during excavation of TU-F (Figure 6-15, Table 6-20). The strata encountered in this unit are complex and strongly suggestive of intentional mounding activity at this part of the South Ridge. Apparent domestic activities at this location are amply evidenced by the presence of three hearths, a cluster of paleofeces, and a high frequency of finished and broken worked bone tools as well as numerous segments of cut, snapped, and scored deer long bones.

Strata in TU-F are some of the more interesting encountered during excavations at the Thornhill Lake Complex and stand as the best evidence for the intentional mounding of sand and shell deposits during the Mount Taylor period with the exception of Mounds A and B. Stratum I is a relatively horizontal deposit composed of dark organic sand and decomposing plant material, representing the modern O/A horizon. Stratum II is widely distributed both horizontally and vertically within TU-F, extending below Strata III and IV down to the base of the unit in the entire north wall and northernmost section of the west wall. Part of what makes this stratum interesting is not so much what it contains, but what it covers. Strata III, IIIa, IV, IVa, IVb, and Va are interpreted as intentionally mounded shell and sand deposits that are covered by, and encapsulated within,

Stratum II. Clearly discernible slopes are present at the interface of Strata II and III in the east and west walls, but especially in the west. All of the sub-strata designated appear to be fairly discrete depositional episodes as judged by differences between them and Stratum II, as well as each other, in terms of their discreteness, color, and matrix components (sand and shell). The mounded deposits are underlain by the relatively horizontal shell midden of Stratum V. This stratum was the lowest reached during excavation of TU-F. Prior to backfilling, and after rendering the stratigraphic profiles for each of the unit walls, a bucket auger was placed into the floor at the southern end of the unit. Augering provided coarse-grained stratigraphic information for deposits that could not be reached during unit excavation. The auger penetrated the remaining cultural deposits at this location, reached sterile sand, and terminated at the clay substrate (Table 6-21).

Artifacts were fairly common in TU-F and the types present as well as their vertical distribution are shown in Table 6-22. Relatively speaking ceramics are infrequent in TU-F and their limited vertical distribution follows the same general pattern observed elsewhere at 8VO60. Worked bone is concentrated in Stratum II, Levels 2-4 and consists of bone pin fragments, pin/point fragments, and numerous pieces of deer long bone displaying slotting, scoring, grooving, and snapping; all related to the production of bone tools. Marine shell shares a distribution similar to the lithics and ceramics and is most common in Stratum II, Level 1 to Stratum III, Level 2. For the most part they consist of small fragments of shell debitage representing a number of species including *Busycon*, *Mercenaria*, and *Dinocardium spp.* (cockle). A gouge or chisel made from the columnella of a horse conch was also found. This artifact may have been used in

woodworking activities and displays a beveled distal end with a sharp cutting edge and a heavily battered proximal end.

Lithic artifacts have two concentrations, one in the upper ceramic-bearing levels and another below in the preceramic strata. Debitage accounts for most of the lithic artifacts recovered although a few biface fragments and a flake tool were also found. Among the second concentration are a complete Florida Archaic Stemmed biface, a biface stem, and a flake tool. During bucket augering in the south half of the unit a complete Newnan point was recovered and further supports a Mount Taylor period temporal placement for the deposits in Stratum VI and below.

Features were frequent in TU-F compared to other units excavated at the Thornhill Lake Complex. With one exception all of the features appear to be shallow hearths as evidenced by the abundance of burned shell and charcoal present within their fill. Perhaps the most unusual of all the features found at the site is a discrete deposit of paleofeces. The presence of these features provides valuable clues to the activities occurring on the South Ridge.

Feature 3 is a small, shallow concentration of burned shell, possibly a hearth or deposit related to hearth cleaning and maintenance, in the southern end of TU-F within Stratum II, Level 1 at 25 cmbs. This feature is adjacent to the southern wall and measures 49 cm N-S and 49 cm E-W. Maximum feature depth is 5 cm. In plan-view Feature 3 is somewhat ovoid with a basin-shaped cross-section and a NE-SW orientation. Feature fill consists primarily of burned shell, bivalve and *Viviparous*, and very dark gray (10YR3/1) sand and, in terms of the color of the sand component of the matrix, differs little from the rest of the unit. The burned and calcined shell is what give

this feature a somewhat lighter color and aided in its identification. The entire feature was excavated as a single unit, 1/8" screened in the field, and the entire 1/8" fraction retained. No diagnostic artifacts were recovered but based on the presence of St. Johns Plain pottery at this depth it may be attributable to a post-Archaic use of this site although this should be viewed with caution considering the growing recognition that St. Johns (read sponge spicule-tempered) pottery is as old as Orange pottery (Russo and Heide 2004; Austin et al. n.d.).

Feature 5 was discovered in the center of TU-F, at the bottom of Stratum II, Level 2 at 35 cmbs and consists of a discrete deposit of paleofeces. Additional paleofeces were found in Stratum I, Level 1; Stratum II, Level 4; and Stratum III, Level 1. At present it can not be said with any certainty if the paleofeces from Feature 5 are human, canine, or other. Temporally this feature itself is not diagnostic. St. Johns Plain pottery was recovered from the same stratum this feature was found in and a post-Archaic St. Johns period temporal designation is tentatively offered for the same reason indicated above for Feature 3.

Feature 6 is a possible hearth identified within Stratum IV, Level 3 at a depth of 106 cmbs. In plan this feature is irregular and is has a shallow, basin-shaped cross-section. It measures 70 cm E-W, 66 cm N-S, and has a maximum depth of 7 cm. Feature orientation is generally E-W. Fill consists of very dark gray (10YR3/1) sand with compact burned shell and abundant charcoal. Shell is primarily *Viviparous* and bivalve, both highly fragmented. Much of the shell within this feature is burned and pockets of burnt bivalve were discernible and correspond to two areas of very dark grayish brown (10YR3/2) coloration within the center of the feature and have charcoal

and bone in close association around their periphery. These two areas most closely resemble the color of the general Stratum IV matrix except for the fact that they are surrounded by dark gray (10YR3/1) sand and midden which is itself distinctive from the rest of the midden deposits. Feature fill was ¼” screened in the field. Artifacts recovered include three lithic waste flakes, a bone pin fragment, approximately 50 bones, and a sample of the concreted feature matrix. Due to the presence of abundant charcoal in combination with burned shell Feature 6 can be classified as a hearth. Given its position within preceramic deposits in TU-F, Feature 6 is associated with the Mount Taylor occupation.

Feature 7 is a hearth located in the southwest corner of TU-F within Stratum IV, Level 5 at a depth of 122 cmbs (Figure 6-16). Plan shape for this feature is uncertain due to the fact that it is only partially exposed but may be either elliptical or ovoid considering the form of the portion exposed. Feature 7 measures 56 cm N-S, 30 cm E-W, and has a total depth of 14 cm as excavated. Fill consists of loose dark gray (10YR4/1) ashy sand with abundant charcoal throughout. *Viviparous*, *Pomacea*, and bivalve shells, both whole and crushed, were also present within the dark gray ashy sand matrix. Dense concreted midden was present at the base of the feature and is consistent with the general Stratum IV matrix. A large carbonized log was present *in situ* along the northeastern edge and several relatively large fragments of charcoal are present at the base as well. The entire exposed portion of Feature 7 was excavated and all feature fill was 1/8” screened in the field and the contents retained. The burned log and the large charcoal fragments at the bottom of the feature were also collected and have been used to obtain an absolute date for this feature (see below).

The form and composition of the midden matrix excavated in TU-F and visible in the walls of this unit make a compelling argument for the purposeful and deliberate mounding of sand and shell deposits in this location. Artifacts recovered and their distribution show that pottery is once again limited to the upper 50-60 cm of the site whereas below no pottery is present. The absence of pottery within the mounded sand and shell indicate that they were laid down before 4500 cal. B.P. A standard radiocarbon date was obtained from a portion of the burned log associated with Feature 7. This sample returned a date of 4950+/-90 rcybp (Beta 231049) or 5910-5480 cal. B.P.

The intentionality of mounding can be seen in the stratigraphic position of the features identified. Features 3 and 5 are present within Stratum II and are associated with deposits apparently post-dating the deposition of mounded sand and shell on the South Ridge. Features 6 and 7 are present within the basal elements of the mounded deposits and below them respectively. The fact that no other features were encountered within the intervening space seems to argue for a rapid deposition of the mounded shell and sand represented by Strata III, IIIa, IV, IVa, IVb, and Va. Carbon from Feature 3, if present and sufficient funding is available, may be dated to provide the *terminus ante quem* for the mounding.

The picture emerging from the current data is that domestic activities were taking place in this location prior to mounding. This is evidenced by the presence of hearths and typical items of material culture such as stone tools and lithic debitage associated with tool use as well as maintenance and production. Then, some time before 4500 cal. B.P., sand and mixed sand and freshwater shell was piled up along the South Ridge

and, judging from the unit profiles, had an east-west orientation. Deposition may have occurred rapidly as there is no additional evidence for domestic activities in the form of features. What this might be signaling is that the nature of this location changed from one where it was permissible to build camp fires to one where it was appropriate to mound up sand and shell along an east-west axis, directly in line with a mortuary mound, Mound B. Later, this apparently changed as this sand and shell ridge was covered over by shell midden deposits. Some time after 4500 cal. B.P. people were again building campfires and as yet unidentified mammals defecated here. The changing nature of the use and modification of this location through time may be reflecting changing attitudes toward this place by the people inhabiting it.

West Shell Knoll

Test Unit I. Test Unit I is a 1-x-1 m unit placed on the southern side of the Western Shell Knoll/Borrow Pit in an area apparently not significantly disturbed by shell mining operations. Mounded midden deposits in this part of the site are thought to be the “westernmost extremity” of the crescent-shaped midden deposits adjacent to Thornhill Lake described by Moore (1892a). Five strata were encountered during excavation (Figure 6-17, Table 6-23). In addition to those encountered during excavation, additional strata were revealed in a bucket auger in the floor of TU-I at the bottom of Stratum V, Level 2. No definitive cultural features were identified although Stratum III possesses qualities similar to those observed for features in TU-F and TU-H.

Strata exposed within TU-I have a horizontal character to their deposition similar to that observed in TU-H. Stratum I is primarily an organic zone. Stratum II is the first stratum of midden deposits. Stratum III contrasts with Strata II and IV in both color and content. Above it was suggested that Stratum III bears greater similarity to the hearth

features found in TU-F and TU-H. However, its form and profile do not conclusively point to it being a feature. If anything it may represent a dumping episode, possibly hearth cleaning, rather than an *in situ* feature. Stratum IV represents the primary midden deposit encountered in TU-I and produced little in the way of cultural materials. Whereas *Viviparous* shell was the principal shell type present in the midden above Stratum V, *Pomacea* becomes the dominant species in this stratum. Like Stratum IV, Stratum V too has low frequencies for both faunal bone and artifacts.

A bucket auger was placed in the floor of TU- I in order to determine the total depth of midden deposits at this location. The water table was reached 10 cm below the unit floor within Stratum V at 175 cmbs. The auger revealed the presence of an additional 30 cm of shell midden deposits below the unit floor, indicating a total midden depth of 195 cmbs. Midden deposits were judged to end upon reaching very dark gray (10YR3/1) "muck" and sand at depths below 195 cmbs.

Artifacts (Table 6-24) are concentrated in Strata I and II and consist largely of bone and prehistoric pottery although lithic artifacts, worked bone, and marine shell were also recovered. Below Stratum II artifacts are scant and bone is the most abundant material recovered in all levels. Pottery was more abundant in this test unit than any other at the site and more pottery was recovered from Stratum I, Level 1 in TU-I than all of the other test units combined. Below Stratum III no lithic artifacts are present and only a very few examples of worked bone and marine shell fragments. Worked bone implements include a number of proximal, medial, and distal elements of points/pins. Marine shells recovered consist only of pieces of shell debitage from a

number of different species. Bone is relatively infrequent below Stratum III but increases somewhat in Stratum V.

A single radiometric date was obtained from TU-I. A sample of charred material from the "shell hash" of Stratum V, Level 2, from 155-165 cmbs was submitted and returned a conventional radiocarbon age of 4430 \pm 40 B.P. (Beta 231054) or 5280-4870 cal. B.P. Based on this radiocarbon date and the absence of pottery within Strata IV and V these two strata are the primary Mount Taylor deposits encountered at this location and predate 4500 cal. B.P. Strata I-III post-date 4500 cal. B.P. Fortunately the radiocarbon date from this unit came near the base of the midden deposits in Stratum V and, based on the results of the bucket auger discussed above, shows that, for the most part, midden deposits most proximate to Thornhill Lake are later than the midden deposits elsewhere at the site, dating after about 5300 cal. B.P. Apparently the site grew from east to west from the vicinity of Mounds A and B and the North and South Ridges toward the lake. Limited soil probing has shown that the midden deposits at the boat landing on Thornhill Lake extend no more than approximately five meters into the lake and that these are relatively thin, measuring no more than about 50 cm in depth. In fact, a well defined ledge was noted where the solid lake bottom characterized by shell midden ends and the soft muck of the lake begins. This boundary can be seen from shore and is identifiable as water lilies can not grow within the shell matrix and areas without lilies are characterized by midden.

East Ridge

Limited investigations were conducted on the East Ridge in order to ascertain the nature of the earth and shell deposits there. Because of its linear morphology and location between Mounds A and B it was suspected that this feature may be

intentionally constructed in order to link the two mounds. Alternatively this feature was thought to possibly be part of a continuous pre-mound shell ridge. Work in East Ridge consisted of a single 1-x-2 m excavation unit, TU-L, on the west side of the ridge just below its apex. Stratigraphy encountered within TU-L is grossly similar to that encountered elsewhere at the Thornhill Lake Complex in that it consists of a shell-free midden overlying dense and intermittently concreted shell midden. Within the shell midden deposits in TU-L there is considerable stratigraphic variability. This variability is most noticeable when comparing the north and south walls. The north wall possesses relatively little variability and the stratigraphy is straight forward whereas the south wall shows a fair amount of variability in the form of several sub-strata, some of which are discontinuous, isolated, or irregularly shaped.

Excavation within TU-L revealed the presence of four strata and six sub-strata. The stratigraphic profiles for this unit are presented in Figure 6-18 and described in Table 6-25. Stratum I represents the A/O horizon and contains abundant organic material. Stratum II is the first of the primary culture-bearing strata and it differs from the other strata in this unit in that it contains a relatively higher amount of both artifacts and fauna (exclusive of shellfish remains) than the underlying shell midden deposits. Within Stratum II a single sub-stratum, Stratum IIa, was identified. Stratum IIa is interpreted as an interface between Strata II and III. Stratum III is the first of the two shell-bearing strata. The upper levels of this stratum lack concretions and scattered concretions appear in Stratum III, Level 3 and persist in subsequent strata and levels. Burned shell is common and frequently associated with areas of concretion. Three sub-strata are present within Stratum III: IIIa, IIIb, and IIIc. Stratum IV is the second of the

shell-bearing strata and within it two sub-strata were recognized: IVa and IVb. Stratum IVa and IVb differ in that IVa contains very little shell whereas the latter contains appreciable amounts of shell.

The vertical distribution of artifacts and fauna within TU-L is presented in Table 6-26. Generally speaking, the majority of the cultural materials recovered from this excavation unit are concentrated within Stratum II with minimal representation in Strata I, III, and IV. One possible explanation for the greater occurrence of artifacts within Stratum II is the nature of this deposit. The absence of shell from Stratum II makes it easier to identify and recover artifacts, especially lithic waste flakes, which, along with fauna, account for the majority of the cultural material recovered from this stratum and the test unit generally. The possibility remains, however, that there are real stratigraphic differences in the distribution of artifact classes within TU-L. Much of the debitage recovered is thermally altered, taking on red, pink, and orange coloration which contrasts with the generally lighter color of the shell. Such a contrast in coloration of waste flakes and the shell matrix would have aided in their recovery, not hinder it. In this case the abundance of waste flakes in Stratum II and their infrequency in Strata III and IV is a result of cultural factors and not the nature of the matrix from which they were recovered.

Prehistoric pottery and historic artifacts are found within the upper 40 cm of deposits in TU-L. Historic artifacts are found in Stratum I and Stratum II. Prehistoric ceramics, primarily St. Johns Plain but also a few sherds of fiber-tempered Orange tradition ceramics, occur within Stratum I and Stratum II. The majority of the pottery present is found within Stratum II, Levels 1 and 2, with only a single sherd at greater

depths and could easily have occurred due to bioturbative processes and, if this is the case, then Stratum II, Level 3, marks the beginnings of the Mount Taylor period deposits. Stratum II, Level 4 lacks pottery altogether and along with Stratum II, Level 3 presents the best case for the lower half of Stratum II being Mount Taylor period deposits. However, the possibility remains that all of the shell-free midden deposits on the East Ridge are Mount Taylor in origin and that the relatively shallow distribution of historic artifacts and pottery is the result of later introduction and the subsequent vertical migration of artifacts within this matrix as a result of natural processes.

A single feature was identified within TU-L. Feature 10 was identified in Stratum III, Level 4 at a depth of 84 cmbs. It is located primarily in the eastern half of the unit along the southern wall (Figure 6-19). In form Feature 10 is elliptical in plan with a basin-shaped cross-section. It measures 46 cm north-south and 50 cm east-west with an east-west orientation. Depth ranges from 84-92 cmbs for a total feature depth of 8 cm. Two zones were identified within Feature 10, Zones A and B, and represent the core and periphery of this feature respectively. They are differentiated based on fill coloration and, in the case of Zone A, the presence of charcoal flecking. Zone A is located within the center of the feature and consists of moderately compact very dark grayish brown (10YR3/2) sand with whole and fragmented *Viviparous* and *Pomacea* shell with moderate amounts of burned bivalve. Zone B occupies the periphery of the feature and consists of lightly to moderately compact pinkish gray (7.5YR6/2) ashy fine sand with whole and fragmented *Viviparous* and *Pomacea* shell with moderate amounts of burned bivalve. Due to the differences in the matrix composing Feature 10 they were removed and bagged separately. The entire fill for this feature was bulk sampled. The

frequency of charcoal flecking makes Feature 10 a good candidate for future radiometric dating. In addition, the fact that it is not concreted also presents the possibility of zooarchaeological and botanical analysis. Feature 10 is interpreted as a shallow hearth based on the abundance of ash, charcoal, and burned shell present in the matrix. Temporally this feature is associated with the Mount Taylor occupation of the Thornhill Lake Complex. This determination is based on its stratigraphic position within the aceramic shell midden deposits. A more precise temporal positioning is possible given the frequency of charred material within the feature matrix and such a determination awaits future research.

Excavations within TU-L on the East Ridge were undertaken in order to gather information, stratigraphic or otherwise, that would aid in determining whether or not this topographic feature was intentionally constructed in order to connect Mounds A and B, or simply was part of an existing shell ridge onto which Mounds A and B were later emplaced. Morphologically the East Ridge is a localized and discrete topographic feature, rising above the surrounding terrain and maintaining its form along its length, similar to the North Ridge. This spatial specificity would seem to support its intentionality insofar as it contrasts with the generally flat and unmounded nature of shell midden deposits surrounding the East Ridge and Mounds A and B like those encountered in TU-G and TU-H. The top of Stratum III displays a pronounced slope from west to east in the south wall and presents fairly strong evidence for the mounded nature of the shell deposits on the East Ridge. This slope can also be seen in the north wall but is not as marked as in the south. In fact, the slope of the shell midden underlying Strata I and II is more pronounced than the ground surface.

Additional stratigraphic evidence supporting the intentional mounding of shell on the East Ridge includes the occurrence of isolated and contrasting deposits visible in the east wall of TU-L. Notable among these are Strata IIIb and IVa, which are contrasting deposits composed of concreted and burned shell, and sand with only minor amounts of shell, respectively. These two superimposed deposits are contiguous to a degree, overlapping, and forming a surface with an ascending slope from west to east. Additionally, the occurrence of spatially discrete shell deposits, notably *Pomacea*, is interpreted as basket loaded shell laid down during the course of building the East Ridge. This is exemplified by Stratum IIIc which has been observed separately in the north and west walls and in the south and east walls. Although not conclusive, there is some stratigraphic evidence to support the idea that the East Ridge is an intentional construction rather than the fortuitous results of the deposition of quotidian remains by unreflexive actors.

Further evidence supporting the intentional construction of the East Ridge is the occurrence of extensive areas of burned shell. Such areas of extensive burning have been observed in several locations across the Thornhill Lake Complex, notably in the STUs in the South Ridge and the East Knoll (discussed below) and TU-M (also discussed below). These areas of extensive burning, manifest by the occurrence of concreted tabular shell lenses, may represent intentionally prepared surfaces. Similar burning is described by Moore (1894a) on the surface of the shell mound that Mound A is built upon and by Sears (1960) underlying the Bluffton Burial Mound. In the case of the latter two examples this burning is likely associated with the preparation of ground

surfaces prior to the construction of these monuments. Similar preparations may also have been made prior to the construction of the East Ridge.

Two radiocarbon dates were submitted for analysis from TU-L. The first sample comes from Stratum III, Level 2 near the top of the shell deposits and returned an assay of 5060 \pm 40 (Beta 271085) or 5910-5710 cal. B.P. The second date from Stratum IV, Level 4 produced a date of 5420 \pm 40 (Beta 271086) or 6290-6180 cal. B.P. Additional shell deposits lay beneath Stratum IV, Level 4 and indicates that shell accumulation at this locus, and Thornhill Lake generally, occurred some time before 6290 cal. B.P. Considered together these two dates indicate that much of the shell deposits on the East Ridge accumulated over a period of approximately 580 years.

In view of the two radiocarbon dates obtained for deposit on the East Ridge within TU-L, it appears that this feature was not a separately constructed architectural element of this site, but is, in fact, part of a larger shell ridge that formed early-on in the site's development. Supporting evidence for this can be seen in the identical dates obtained from the sub-midden deposits in TU-J on the North Ridge and TU-L. Although additional shell deposits underlie the lowermost excavated level in TU-L, it confirms the general time frame for the beginnings of shell accumulation and site formation at Thornhill Lake. In view of the stratigraphic and radiometric evidence available, the East Ridge is interpreted as part of an initial crescent-shaped shell ridge, along with the North Ridge, that formed the initial site architecture upon which additions of both shell and sand mounds were later grafted.

Orange Grove

What appeared to be a low shell knoll was observed amid a stand of orange trees located to the east of Mound B. A diffuse scattering of shell on the ground surface was

observed in this location and was suspected to be a small, localized shell deposit or mound. Work in this location began with a series of auger tests that seemed to confirm that it was a shell knoll or mound with a limited horizontal extent. Close interval soil probes also seemed to attest to the presence of localized shell deposits, further confirming that the Orange Grove locus was a discrete mounded shell deposit. However, this perception was significantly altered during subsequent excavation in this locale.

Augers. A series of bucket auger tests were placed within the Orange Gove locus (Figure 6-20). On the western side of this location, approximately 15 m west of the shell scatter, a drop in elevation was discernible and resembled the low terrace edge much like that described previously to the north and northeast of the North Ridge. A single bucket auger, BA-17, was placed in what appeared to be the center of this shell knoll. Shell midden deposits were encountered within 10 cm of the surface and extended to a depth of approximately 1.63 meters below surface. Below a meter shell begins to diminish and is generally sparse between 122-163 cmbs. Clay was reached at 163 cm. Additional augers were placed in all four cardinal directions. Augers to the north indicate that midden deposits are not present at a distance greater than 10 meters. To the east of BA-17 no midden was present at 10 to 15 meters. West of BA-17, BA-18 and BA-24 encountered moderate density midden beneath a shell-free sand stratum. Shell midden was present from 58-121 cm and decreased in density with increasing depth. Sub-midden deposits consisted of gray-brown to light gray sand and produced only occasional pieces of fragmented shell. South of BA-17 diffuse shell was present in BA-21 and concreted midden was encountered at a depth of 43 cm below a shell-free

sand stratum in BA-25. Judging from the strata encountered in the bucket augers in this location it appeared to be a moderate density mounded shell midden deposit. The closeness of shell deposits to the ground surface in BA-17 when compared to the more deeply buried deposits in the other augers to the north, east, and south seemed to support this.

Very little in the way of material culture was recovered from the Orange Grove locus and include a few pieces of St. Johns Plain pottery and lithic waste flakes from the sand stratum above the midden. Bone was recovered from all of the augers in this location. Much like the North Ridge no pottery (or other artifacts) was found in the shell midden deposits and pottery was found only in the sand deposits overlying the shell. The preliminary conclusion based on the augers was that the Orange Grove locus represented a mounded shell deposit dating to the Mount Taylor period given the lack of pottery in the shell. It was decided that additional testing was needed to verify the initial findings. A series of soil probes were undertaken to determine as near as possible the edge of the shell deposits and based on the results of these probes a test unit (TU-K) was to be placed at the interface of the mounded shell midden and non-midden deposits.

Soil Probes. A series of soil probes were conducted within the Orange Grove with BA-17 as the anchor point (see Figure 6-20). Probes were placed at two meter intervals in all four cardinal directions from BA-17. Shell deposits were registered as being present in all probes to the south and west of BA-17. Within approximately five meters to the north and east of BA-17 shell deposits were not detected in the probes. Based on these results it was determined that a test unit should be centered at a

distance of five meters to the east of BA-17 as it ought to intersect the transition from the area containing subsurface shell midden and the point where it terminates.

Test Unit K. In order to evaluate the nature of the apparent mounded shell deposits an excavation unit measuring 1-m north-south and 3-m east-west was placed within the Orange Gove locus. Unit placement was based on the results of soil probes to the east of BA-17. Test Unit K was placed with its center at the approximate point where probes determined the shell deposits terminated. The unit was divided and excavated as three separate 1-x-1 m units designated, from east to west, TU-K1 through TU-K3. Excavations were revealing and indeed surprising. Rather than exposing a profile of mounded shell tapering eastward to shell free sand, excavation revealed the presence of a stratified shell-free midden with three discreet shell filled pit features (Features 8, 9, and 11). Five strata and four sub-strata, in addition to the three features mentioned above, were identified during excavation in TU-K. Strata are illustrated in Figure 6-21 and summarized in Table 6-27.

Stratum I represents an O/A horizon made up of leaf litter and sand mixed with decomposing organic matter. Strata II and III are anthropogenic midden deposits and represent the primary culture-bearing strata. Shell associated with the features is present but generally this stratum is free of shell. Two cavities were excavated into Stratum III and both are associated with Features 8 and 9. These cavities originated in Stratum II and extend downward into Stratum III. Both are filled with variably concreted shell masses. Stratum IV represents the sterile or nearly sterile sub-midden soil and contained very little in the way of cultural materials. Small isolated pockets of dark

brown spodic soils occur sporadically throughout Stratum IV but did not occur in profile and are nowhere extensive enough to warrant a separate stratum designation.

The vertical distribution and frequency of cultural materials recovered from TU-K is presented in Tables 6-28, 6-29, and 6-30. Because of differences in the depth of recovery for artifacts as a result of the stratigraphic variability and level thickness within the 1-x-1 m units within TU-K, the vertical distribution of artifacts for this unit are organized and presented by each of those 1-x-1 m units. Artifacts and fauna are concentrated in Strata II and III with the majority occurring between 10 and 80 cmbs and decreasing steadily thereafter, confirming that these are the primary culture-bearing strata in the Orange Grove locus. Cultural materials are present only in trace amounts within Stratum IV and when present consist of a few fragments of bone. The vertical distribution of other artifact classes also follow the trend observed for fauna. Lithic artifacts are concentrated between 20 to 70 cmbs in lower Stratum II levels and the upper half of Stratum III. Worked bone tends to occur above 50 cmbs and consists largely of pin/point fragments. Marine shell is rare and occurs sporadically in TU-K3 below 50 cmbs.

The vertical distribution of artifacts, notably historic artifacts and pottery, allow for the separation of differing cultural periods within TU-K. Unidentified flat ferrous metal accounts for the majority of historic artifacts from both TU-K2 and TU-K3. Of the 20 fragments of unidentified flat ferrous metal most were found above 35 cmbs. Where fragments of flat ferrous metal are found below 30 cmbs these likely were introduced to greater depths as a result of natural bioturbative processes. Prehistoric pottery found within TU-K was recovered in trace amounts from TU-K1 and TU-K3. St. Johns Plain is

the only type identified numbering three sherds in all. None of the sherds recovered were found below 50 cmbs in TU-K1 and 35 cmbs in TU-K3, conforming to the vertical distribution of pottery elsewhere across the Thornhill Lake Complex. The vertical position of these artifacts makes it possible to discern between deposits attributable to Mount Taylor peoples and later St. Johns groups. Safely, materials found below 50 cmbs are Mount Taylor in age although the cutoff could also be as shallow as 35 cmbs and the deeper occurrence (50 cmbs) may be the result of bioturbation. With this in mind materials found below 35 cmbs are attributed to the Mount Taylor period occupation of the site and those above, while potentially being Mount Taylor in age, are considered to date to the later St. Johns period.

The three features (Features 8, 9, and 11) identified within TU-K occurred within units TU-K2 and TU-K3 (Figure 6-22). All are shell-filled pits that have been concreted, possibly representing hearths given the abundance of burned and calcined shell. Feature 8 was identified in the southwest corner of TU-K3 beginning at a depth of 52 cmbs and reaching a maximum of 90 cmbs, extending from the approximate bottom of Stratum II into Stratum III and into the western and southern walls of the unit (see Figure 6-21 and Figure 6-22). Feature length measures 64 cm north-south, 42 cm east-west, and 38 cm in thickness. Plan shape is difficult to discern as it is only partially exposed, but may be elliptical or ovoid in shape with a north-south orientation. The cross-section is irregular but is generally flat and slopes downward toward the north and appears somewhat convex at its top, as though it were slightly mounded prior to capping by Stratum IIa deposits. Fill is composed of 10YR5/1 to 10YR7/1 gray to light gray concreted sand, shell, and ash. Shell content consisted largely of abundant whole

and fragmented *Viviparous* and bivalve shell with minor to moderate whole and fragmented *Pomacea*. Burning was pervasive among the bivalve shells associated with this feature. The degree of concretion is variable, ranging from very hard and dense to somewhat loosely consolidated and crumbly. Because of the concreted nature of the feature fill the analytical value is considered minimal. The majority was removed and discarded in the field. A sample was taken in order to extract organic materials (charcoal) for radiometric dating. Although no analysis was undertaken, faunal bone was observed and include the leg bone of a deer as well as what appeared to be the outline of an antler segment. Due to the abundance of burned shell in Feature 8, it may represent an *in situ* hearth or, alternatively, secondary deposits of a hearth resulting from cleaning and maintenance activities. Considering the depth that this feature was initially encountered and the distribution of pottery at or above 50 cmbs within TU-K, Feature 8 is associated with the Mount Taylor period occupation of this site.

Feature 9 was identified and partially exposed in the southern end of TU-K2 with the remaining portion of the feature extending into the southern wall of the unit. This feature was identified at the bottom of Stratum II beginning at a depth of 56 cmbd and extends downward into Stratum III to a maximum depth of 92 cmbd (Figure 6-22). A pit outline is visible in profile in the south wall of TU-K2 into which the fill composing this feature was deposited. Feature 9 measures 70 cm east-west, 35 cm north-south, and 36 cm in thickness. Based on the portion of the feature exposed within TU-K2, Feature 9 appears to have an approximately elliptical plan shape and a generally northeast-southwest orientation. The cross-section of this feature is unusual and is strongly bi-convex (Figure 6-21). Possibly the fill was deposited into a pit with a bowl-shaped

bottom excavated down into Stratum III (as indicated in the south wall profile for TU-K), and the fill then being deposited in a mounded fashion before being sealed by Stratum II. Fill is composed of 10YR5/1 gray sand with 10YR6/3 pale brown ash mottling, shell, and bone. Shell content consisted of abundant whole and crushed bivalve with a high incidence of burning, moderate whole and crushed *Viviparous*, and minor *Pomacea*. As with Feature 8, the analytical value of fill from Feature 9 was considered minimal owing to its concreted nature. A sample was retained in order to obtain materials for radiometric dating. The abundance of burned shell and ash indicate that Feature 9 is either an *in situ* hearth or a pit filled with materials originating from a hearth feature. Feature 9 is associated with the Mount Taylor period occupation of the Thornhill Lake Complex given its vertical position below ceramic-bearing deposits.

Feature 11 was encountered and fully exposed slightly north and east of the center of TU-K2 (see Figure 6-22). It was first identified at the top of Stratum III at a depth of 55 cmbd and extended to a maximum depth of 75 cmbd. This feature measures approximately 34 cm north-south, 39 cm east-west, and has a thickness of 20 cm. Plan shape is somewhat ovoid with an east northeast-west southwest orientation and a bowl to basin-shaped cross-section. Feature fill consists of lightly concreted 10YR5/1 gray sand with abundant shell, frequently burned, with some charcoal and bone content. Shell content consisted of moderate whole and crushed *Viviparous*, abundant crushed and whole bivalve (frequently burned) and minor *Pomacea*. Compared to Features 8 and 9 this feature is noticeably less concreted and appears to have a lesser shell content and more sand. An attempt was made to remove Feature 11 in one piece but it crumbled when moved, reflecting the lesser shell content and

therefore reduced concretion in comparison to Features 8 and 9. Because of its small size all of Feature 11 was removed and sampled in total. The lesser degree of concretion may permit an analysis of feature content and therefore it may have some analytical value. Functionally Feature 11 is somewhat ambiguous. Considering its small size it may be a small hearth or refuse pit. Temporally Feature 11 dates to the Mount Taylor period based on its stratigraphic position within TU-K.

The deposits excavated in TU-K are similar to the shell-free midden overlying the shell midden across 8VO60; the midden in TU-K contains an abundance of fauna in a sand matrix largely devoid of shell. However, they differ in a fundamental way – the deposits found in TU-K lack the underlying shell midden found elsewhere across the Thornhill Lake Complex. Further, the shell-free midden overlying the shell deposits contain ceramic period materials throughout and therefore nowhere at this site can they be positively attributed to the Mount Taylor period. Within TU-K there are demonstrably shell-free Mount Taylor midden deposits, largely in Stratum III, although the lowermost level of Stratum II may also be attributable to Mount Taylor. In this way TU-K is unique at the Thornhill Lake Complex.

Although unusual for the Thornhill Lake Complex generally, the stratigraphy and deposits in TU-K are to some extent comparable to the general stratigraphic sequence of the site at large. For example, the shell-free midden deposits found overlying the shell midden contain pottery nearly throughout, extending downward to approximately 50 cmbs and terminating at or just before its interface with the shell midden. Strata I and II in TU-K are analogous to the shell-free midden deposits and the shell midden deposits underlying the shell-free midden which lack pottery are analogous to Stratum

III. By and large the stratigraphic pattern observed at the Thornhill Lake Complex is replicated in TU-K and the only real difference apparent is the absence of shell from the demonstrably Mount Taylor period deposits – the artifacts and fauna observed in both shell-bearing and shell-free Mount Taylor midden are repeated and consist of the same limited suite of lithic, bone, and marine shell artifacts and fauna. Regarding the temporal position of the Mount Taylor period deposits within TU-K, little can be said except for the fact that they are demonstrably preceramic. Sufficient organic samples were obtained from Features 8, 9, and 11 as well as the general unit excavation levels to permit dating of the Mount Taylor period deposits, but funding was not available and therefore no dates have been obtained.

South Shell Knoll (“Shell Ring”)

A single 1-x-2 m test unit (TU-M) was placed on the inner edge of the ring-shaped shell deposit in the hopes of determining its nature and origins, specifically whether or not it is a purposefully constructed shell ring or the apron of a mined-out shell midden deposit. TU-M was laid out in such a way as to incorporate portions of the crest of the ring as well as the interior slope. Four strata were encountered during excavations at this location and with the exception of the uppermost level appear to be intact. Strata encountered in this test unit are shown in Figure 6-23 and described in Table 6-31.

Stratum I represents a disturbed stratum containing historic and prehistoric artifacts. A localized area of tabular concreted midden was observed at the bottom of Stratum I at its interface with Stratum II. This tabular midden concretion is composed largely of burned bivalve shell with lesser amounts of *Viviparous* and *Pomacea* shell as well. Stratum II is the top of the demonstrably preceramic deposits. The top of this stratum does contain some historic artifacts and prehistoric pottery. However, the top of

this stratum was partially excavated along with Stratum I to a depth of 18 cmbs. Below a depth of 18 cmbs Stratum II is clearly Mount Taylor in age. An extensive zone of tabular concreted midden approximately 5 cm thick was encountered at the base of Stratum II at its interface with Stratum III. The composition of this tabular concreted midden is the same as that described above for localized area at the base of Stratum I. Stratum III diverges strongly from the overlying and underlying strata in that it is composed largely of sand. Shell content is notably decreased in comparison to these inferior and superior strata and what shell is present tends to be highly fragmented. In addition, there is an increase in the amount of faunal bone, possibly the result of decreased concretion of shell midden within this stratum. The highly fragmented nature of the shell and the increase in faunal bone, along with the frequency of charcoal within this stratum, indicates that it is a living surface. Lying below the sandy matrix of Stratum III is Stratum IV, another shell midden stratum, very compact and frequently concreted. Again concreted areas composed largely of burned bivalve shell are present. Excavation was terminated prematurely due to Tropical Storm Faye which produced abundant precipitation, resulting in flooding of the Thornhill Lake Complex and inaccessibility. No further excavation was carried out in this test unit once the site could again be accessed and only salvage documentation of the wall profiles and backfilling occurred subsequently. Overall Stratum IV is similar to Stratum II in both composition and content.

The vertical distribution of artifacts within TU-M is presented in Table 6-32. Historic artifacts and prehistoric pottery are confined to Stratum I and the very top of Stratum II, above 18 cmbs. Worked bone and lithic artifacts are rare in TU-M. Lithic

artifacts came from Stratum III primarily with a single specimen coming from Stratum I/II. Marine shell is relatively frequent within Stratum I/II and Stratum III. A single specimen of marine shell was also recovered from Stratum IV, Level 1. Faunal bone increases in abundance with depth in Stratum II, becoming fairly consistent in abundance in Levels 2 and 3. A noticeable spike in bone frequency is noted at the top of Stratum III and decreases rapidly thereafter with a minor increase at the top of Stratum IV. The vertical distribution of artifacts within TU-M reveals that it is largely a Mount Taylor period feature given the limited amount of prehistoric ceramics recovered and the shallow depth of recovery.

As a result of stratigraphic excavation at this location in combination with a re-evaluation of the topographic map of this area and Clarence Moore's descriptions of the site, the area formerly identified as the "Shell Ring" (Endonino 2007, 2008a, 2008b) can now confidently be said to be one of the shell knolls Moore describes for this site. The timing for the deposition of this site feature is uncertain given the fact that no radiocarbon dates have been submitted for analysis. However, the fact that ceramics are very shallowly distributed at this location seems to indicate that it is principally a Mount Taylor period deposit predating approximately 4500 cal. B.P.

East Shell Knoll

The Eastern shell knoll was discovered during topographic mapping of the Orange Grove. This locus is composed of a low mounded shell deposit with an elevation of approximately 50 cm above the surrounding terrain. In order to evaluate the nature of this topographic feature a series of STUs were excavated across it (Figure 6-24). One STU (STU-4) was placed at the approximate center of the knoll. Additional tests were placed to the north (STU-6) and south (STU-5).

STU-4. STU 4 is located at the approximate apex of the East Shell Knoll and encountered shell midden deposits immediately below the ground surface and to a depth of 69 cmbs. Five strata were identified (Table 6-33). Deposits encountered within STU-4 represent a stratified shell midden. The lack of pottery may indicate that the East Shell Knoll is a Mount Taylor period feature. Faunal bone is the primary class of material recovered. In addition to bone, a few lithic waste flakes, shell debitage, and a shell tool also were recovered. The thin burned lenses may related to the preparation of the ground surface for some purpose or, alternatively, camp fires. The limited extent of the excavations in the East Shell Knoll precludes a determination of the expansiveness of this practice. Irrespective of the areal extent of the burning, similar tabular lenses of burned shell have been noted elsewhere across the Thornhill Lake Complex, notably the South Ridge, the East Ridge, and the South Shell Knoll, suggesting that it was a common practice although its exact nature remains elusive but may ultimately be related to practices associated with monument construction as it was also noted at the base of Mound A by Moore (1894a).

STU-5. STU-5 is located 10 meters south of STU-4 off of the mounded shell deposits of the East Shell Knoll. Three strata were identified within STU-5 (Table 6-34). Two major stratigraphic divisions were noted within this excavation: a shell-free midden and a compact to concreted shell midden deposit. Deposits within STU-5 are similar to others revealed in other excavations across the Thornhill Lake Complex – a shell-free midden deposit with shell midden underlying it. Typically the shell-free midden deposits contain prehistoric ceramics. Although no ceramics were recovered *per se*, fired clay was found. Whether or not this equates to a post-Mount Taylor presence is uncertain

as fired clay and baked clay objects (not pottery) have been found in Mount Taylor period contexts elsewhere in the St. Johns, notably Groves' Orange Midden (8VO2601) (Wheeler and McGee 1994a). Considering this, it is possible that the shell-free midden deposits are potentially attributable to Mount Taylor on the East Shell Knoll. This interpretation is offered tentatively in view of the occurrence of post-Mount Taylor, ceramic period deposits across the site within similar matrices.

STU-6. STU-6 is located 10 m north of the mounded deposits at the East Shell Knoll. Two strata were identified within this STU and it reached a depth of 90 cmbs. Deposits in STU-6 closely resemble the deposits encountered within TU-K. The single sherd of St. Johns Plain pottery recovered from this test confirm the general post-Mount Taylor present in contexts above 50 cmbs. Deposits below 50 cm are apparently Mount Taylor in age. In addition, STU-6 revealed that the East Shell Knoll is not present at a distance of only 10 m north of STU-4, indicating that it is spatially discrete.

Based on the results of limited excavation in this feature as well as topographic mapping, the East Shell Knoll appears to be a localized mounded shell deposit associated with the Mount Taylor period and pre-dating 4500 cal. B.P. considering the absence of pottery within the shell matrix. The presence of tabular burned and concreted shell lenses suggests some continuity with thermal-related spatial practices across the site. Considering again the age of this feature, it may be that it is early given the progressively increasing age of deposits across the site from east to west. However, without radiometric dating of this feature, this is speculation only based on the pattern established by the dates that are available. Additional testing will be required to

make a final determination of the East Knoll's temporal position within the overall construction sequence for the site.

Discussion

Stratigraphy

Excavations across the Thornhill Lake Complex have demonstrated that post-Mount Taylor deposits are confined largely to the upper 50 cm at the site, indicating that this site is principally Mount Taylor in age. Deposits containing the post-Mount Taylor remains are found within shell-free midden deposits characterized by an abundance of faunal bone. Within this shell-free matrix Mount Taylor period artifacts are sometimes found, such as a Newnan point recovered from TU-L. The origins of this shell-free deposit are uncertain. It is not clear if it represents gradual accumulations resulting from natural processes or if it was excavated from elsewhere at the site and piled up, at least on the North, South, and East Ridges. Radiometric dating of bone (deer) from the shell-free deposits may help to resolve their age and whether or not they represent deposits that formed *in situ* or if they are redeposited. If dated post-4500 cal. B.P. this would seem to indicate that it formed *in situ* after Mount Taylor. Should the returned assay pre-date 4500 cal. B.P. it would indicate that these deposits are either *in situ* Mount Taylor in age or were excavated and redeposited by later Orange and St. Johns peoples. Until dating of the shell-free deposits is carried out to determine one way or the other the origins of the shell-free midden, it will be assumed that they post-date Mount Taylor and the vertical distribution of ceramics will be used to determine the boundaries (stratigraphically) of Mount Taylor and post-Mount Taylor components for purposes of discussion and analysis.

Excavation clearly demonstrated that shell midden deposits across the site are largely Mount Taylor in age. Ceramics typically have a shallow distribution within the mounded shell midden deposits encountered within Test Units F, I, and J, generally above 50 cmbs. Elsewhere within the Thornhill Lake Complex ceramics are excluded from the shell midden deposits altogether (TU-L and TU-H) or was shallowly distributed (TU-M). One interesting exception to this is the deposits found in TU-K east of Mound B. At this locale shell-free Mount Taylor period deposits are present. Although prehistoric pottery is present in trace amounts, it has a shallow vertical distribution, rarely occurring below 35 cmbs. All of the deposits below 35 cmbs can be characterized as Mount Taylor. As has been noted previously in the above discussions, it is possible that the entire deposits are Mount Taylor in age and that the pottery represents intrusion through natural bioturbative processes. Again, this is not clear and caution has been exercised in attributing deposits to the Mount Taylor period.

Overall excavations at the Thornhill Lake Complex were very successful in identifying and isolating Mount Taylor and post-Mount Taylor components. These stratigraphic divisions are based on the presence and/or vertical distribution of temporally diagnostic artifacts. More telling and accurate are the radiometric dates obtained from several proveniences across the site, notably the various topographic features. These dates confirm the generalized relative chronology discussed above.

Chronology and Site Development

An important goal of the excavations was to situate the Thornhill Lake Complex temporally and to date the mounds and other topographic features. The use of relative means (diagnostic artifacts and presence/absence of pottery) was successful. However, a more accurate chronological assessment is needed. Toward this end ten

radiometric dates were obtained from across the site (Table 6-36). Of prime importance was dating Mounds A and B. In addition to the mounds, the North, South, and East Ridges, as well as the West Shell Knoll and non-mounded midden deposits south of the South Ridge, were dated. Dates obtained range from 6290-4530 cal. B.P. The earliest dates were obtained from Stratum VI, in TU-J on the North Ridge and Stratum IV, Level 4 in TU-L on the East Ridge and represent the earliest accumulations of shell at the site. The majority of the dates obtained for this site fall between 6000-5700 cal. B.P. and appear to represent the most intense period of shell deposition at the site. The latest Mount Taylor period dates fall between 5280-4530 cal. B.P. and occur toward the very end of the Mount Taylor period during the Thornhill Lake Phase. As has been noted numerous times throughout this chapter, all of the post-Mount Taylor period deposits are confined to the upper 50 cm of the site. Nearly four millennia of prehistoric pottery-making culture are found within this limited vertical distribution.

Regarding site development, it is apparent that the nature of this site was transformed through human agency over time. Based on the available dates from the sites primary topographic features, as well as non-mounded midden deposits, a hypothesized construction history has been developed (Figure 6-25). Generally, midden deposits began to accumulate beginning around 6300 cal. B.P. The exact nature for its accumulation is uncertain, but appears to have been deposited in the form of a crescent shell ridge some time between 6300-5900 cal. B.P. including what are now the North and East Ridges (1).

A significant period of shell deposition occurs between 5900-5500 cal. B.P. and corresponds with the period of greatest activity as indicated by the frequency of dates

within this period (2-5). During this time the nodes on the North Ridge were formed, the South Ridge was constructed, and the shell platform that Mound B sits atop was deposited. The South Ridge and the shell platform beneath Mound B are essentially contemporaneous as are the non-mounded shell deposits observed in TU-H. The exact timing for the construction of Mound B (sand deposits) remains uncertain but likely occurred between 5600-4700 cal. B.P. The latter date of this range is based on Sassaman and Randall's (2007) chronology for bannerstones in the Savannah River Valley in Georgia, the possible source for at least one of the three bannerstones recovered from Mound B by Moore (1894d).

Between 5200-4800 cal. B.P. the West Shell Knoll formed (6). The Southern Shell Knoll possibly formed during this period as well (7). Generally, there is a trend of increasing age of midden and topographic features as one moves west to east across the site. Because of the relatively late age of the West Shell Knoll, it is likely that the South Shell Knoll also is younger than other site features.

Lastly, Mound A (8) and the East Shell Knoll (9) appear to represent the latest deposits at the Thornhill Lake Complex. The case for Mound A being late is supported by single radiocarbon date of 4840-4530 cal. B.P. from the shell platform at the base of the mound. This time frame also generally agrees with Sassaman and Randall's bannerstone chronology as the types recovered from Mound A date between 5200-4700 cal. B.P. The late end of the date range obtained from radiometric dating is somewhat later than Sassaman and Randall's (2007) bannerstone chronology and it may be that the construction of Mound A may be more precisely placed between 4850-4700 cal. B.P. The East Shell Knoll appears to be a Mount Taylor period feature

based on the work that has been carried out there. Where within the Mount Taylor time frame it occurs is not clear. Therefore, it was placed toward the end of the site development chronology as this is the time before which it must have been formed.

Evidence for Monument Construction

Evidence for monument construction at the Thornhill Lake Complex is manifest in the form of two sand mortuary mounds and ridges of earth and shell. The case for the mounds being monuments is fairly straight-forward. Sand, largely free of shell, was mounded and burials were placed within them, some accompanied by exotic grave goods made from material originating outside of Florida and the SJRV. On the other hand, the case for shell ridges being monumental constructions is not straight-forward. Overall the evidence supporting the monumentality and intentional construction of the North, South, and East Ridges is admittedly limited, coming in the form of ridge morphology and stratigraphic profiles either demonstrating or suggesting intentional mounding. The clearest evidence for intentionality in mounding of the shell ridges comes from TU-F on the South Ridge. As discussed above the succession of superimposed layers of sand and shell within this test unit contrasts with the homogenous deposits that cover and encapsulate it. These superimposed layers of earth and shell have a distinctive mounded character and occur on top of midden deposits that have a generally horizontal depositional character.

Additional evidence for the purposeful nature of shell mounding comes from the North Ridge. Here shell ridge deposits are spatially discrete, generally being absent within 10 meters of the discernible ridge edge to the north and east. Subsurface profiles revealed through augering show that the ridge possesses two distinct shell knolls. Augering also has shown that the saddle in between the shell knolls has been filled in

with sand which served to raise and level the ground surface. Stratigraphic evidence from TU-J is not conclusive in regard to the mounded nature of these deposits, owing at least in part to the small size of this unit. On the East Ridge possible evidence for purposeful construction may be seen in the morphology of this feature, the sloped nature of the subsurface shell deposits, and possible basket loading of midden material within the excavated matrix of this test unit.

Much of the ambiguity in whether or not the shell deposits represent monumental constructions lies in the nature of the building material as much as it does in the general scarcity of stratigraphic evidence indicating intentional mounding. Generally accepted as subsistence remains, the shell used to construct the ridges at the Thornhill Lake site is skeptically viewed by some archaeologists. Therefore, piling shell is not seen as building a monument. Rather, it is only seen as the piling of subsistence remains. The morphology of these topographic features (spatially restricted and prominent features) provides some additional evidence for the intentionality of their construction. Also supporting their purposefulness is the integration of these ridges into a broader monumental context. The incorporation of the ridges into Mounds A and B supports their purposefulness. For example, the North Ridge is integrated into Mound B through its connection through the ramp feature on the northwest side of the mound. The ramp feature aligns with the North Ridge and serves as a bridge between the two features. Similarly, the South Ridge is connected to Mound B, linking this mound to Thornhill Lake, possibly functioning as a causeway between the mound and the lake. Mounds A and B are connected directly by the East Ridge and it too may have functioned as a bridge between them although it apparently was initiated as part of the original crescent-

shaped shell ridge. Overall the ridges do not exist singly, they are integrated within a complex of monuments. This incorporation within the broader monumental context lends support to their intentionality.

Conclusions

Presenting the results of the work at the Thornhill Lake Complex was the overall aim of this chapter. The goals of field work were to obtain data that would support the intentional construction of the mounds and shell ridges through the exposure of stratigraphic profiles; gather organic samples from the mounds, ridges, and other features for radiometric dating; collect samples of material culture to elucidate chronology and site function; and expose features that would aid in determinations of site function. All of this was done in order to come to some understanding of what occurred at this place during the Mount Taylor period, when exactly it happened, and how it changed through time.

Regarding demonstrating the intentionality of monument construction, this work was successful. Stratigraphic profiles from TU-D in Mound B showed that there are preceramic Mount Taylor period sand deposits that represent mound building episodes. Stratigraphic profiles from TU-F show that that at least part of the South Ridge was intentionally mounded to form a ridge feature. The North and East Ridges are more ambiguous but there is some data to suggest that they too are intentionally constructed site features. Organic samples were abundant at Thornhill Lake. Numerous samples were collected and the dates obtained (discussed above) have permitted the construction of a site chronology (also discussed above). The dates obtained have shown that all of the dated features are Mount Taylor in age. Most important among these dates are those that indicate the timing of mound and ridge construction. In this

regard the work presented above was successful. Material culture and its vertical distribution within the site provide important information on the relative chronology as well as site function. The use of diagnostic artifacts (or the lack of them) has been discussed extensively in this chapter and need not be repeated here. Suffice it to say that it has facilitated the distinction of post-Mount Taylor from Mount Taylor period deposits. A discussion of the material culture from Mount Taylor period contexts at Thornhill Lake is the subject of the next chapter. In addition to providing insight into site function, the material culture assemblage from Thornhill Lake can also prove useful in examining the social landscape and the context for the emergence of monumental architecture among Mount Taylor hunter-gatherers within the SJRV.

Table 6-1. Stratum descriptions for TU-A, 8VO58.

Stratum	Depth B.S.	Matrix Description
I	0-9	10YR3/1 very dark gray loose fine sand, minor fragmented shell, charcoal flecks frequent, abundant roots and organic matter, disturbed.
II	9-24	10YR2/2 very dark brown loosely compacted fine sand with frequent whole and fragmented <i>Viviparous</i> and minor fragmented bivalve, shell content decreases with depth, possible disturbance associated with Moore's spoil from excavations.
Ila	24-29	10YR3/1, 4/1, 5/1 very dark gray, dark gray and gray mottled fine sand, disturbed.
III	26-50	10YR3/2 very dark grayish brown moderately compact fine sand with minor fragmented <i>Viviparous</i> and bivalve shell with charcoal flecking, may be intact mound deposit.
IV	27-50	10YR2.5/1 very dark gray to black loose fine sand with rare fragmented shell and minor roots, disturbed.

Table 6-2. Descriptions of strata in the bucket auger in the northwest corner of TU-A, Mound A, 8VO58.

Stratum	Depth B.S.	Matrix Description
III	50-90	Same as Stratum III described in Table 6-1. Minor fragmented <i>Viviparous</i> shell was present near and at the base of this stratum.
V	90-196	10YR4/2 - 4/1 dark grayish brown to dark gray, fine, ashy sand with abundant fragmented <i>Pomacea</i> and minor <i>Viviparous</i> and bivalve shell. Concreted midden first appears around 146-154 cm and becomes more concreted at 188-196. Charcoal flecking is present throughout.
VI	196-210	10YR5/2 dark grayish brown, ashy fine sand with abundant fragmented <i>Viviparous</i> and <i>Pomacea</i> with many small concreted midden fragments.
VII	210-229	10YR5/1 gray sand with increased bivalve, fragmented and whole <i>Viviparous</i> and <i>Pomacea</i> , concretions increase throughout this stratum and auger ends on solid, concreted midden.

Table 6-3. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-A, 8VO58.

Strat.	Lvl.	Depth cmts	ORP	SJP	SJCS	SJI	Lithic	Marine Shell	Fauna (wt/g)
I	1	0-10		3			2	1	44.8
I	2	10-20		5	3		12		284.7
II, IIa	1	20-30		20	9		13		475.5
III, IV	1	30-40	1	3	19		9		304.4
III, IV	2	40-50	4	54	4	2	16		1091.2
III*		67-79	1						
V*		90-196		1					
VI*		196-210							
VII*		210-229					1		

ORP=Orange Plain, SJP=St. Johns Plain, SJCS=St. Johns Check-Stamped, SJI=St. Johns Incised.
 * From bucket auger in northwest corner of TU-A.

Table 6-4. Stratum descriptions for TU-B, 8VO58.

Stratum	Depth B.S.	Matrix Description
I	0-15	10YR4/1 dark gray loose fine sand, no shell, moderate roots, minor shell near interface with Stratum II, disturbed.
II	8-33	10YR2/2 - 3/2 black to very dark grayish brown compacted fine sand with moderate fragmented shell, principally bivalve with some fragmented <i>Viviparous</i> and <i>Pomacea</i> .
III	22-37	10YR3/3 dark brown sand, moderate compaction, little to no shell. Shell consists of fragmented bivalve and minor whole and fragmented <i>Viviparous</i> . No <i>Pomacea</i> observed.
IV	26-40	10YR2/2 very dark brown sand, moderately compact, moderate to heavy whole <i>Viviparous</i> and <i>Pomacea</i> , moderate fragmented bivalve.
V	28-30	10YR2/1 - 2/2 black to very dark brown fine sand, moderately compact. Very little to no shell content. Shell when present is highly fragmented bivalve and gastropod shell.

Table 6-5. Vertical distribution and frequency of artifacts and fauna by level in TU-B, 8VO58.

Lvl.	Depth Cmbs	SJP	SJCS	UID ceram.	Lithic	Wkd. Bone	Marine Shell	Fauna (wt/g)
1	0-10		5		1			189.6
2	10-20	2			8	1		354.7
3	20-30		1	1	3	2	1	454.8
4	30-35		2		2	1	3	364.5
5	35-41				1			195.8

SJP=St. Johns Plain, SJCS=St, Johns Check-Stamped, SJI=St. Johns Incised.

Table 6-6. Stratum descriptions for TU-C, 8VO59.

Stratum	Depth B.S.	Matrix Description
I	0-10	10YR3/1 very dark gray loose fine sand, no shell, moderate roots, minor shell near interface with Stratum II, disturbed.
II	10-27	10YR2/2 very dark brown lightly compacted sand, slightly more compact and coarse compared to Stratum I. Lightly mottled with 10YR3/2 very dark grayish brown sand. Contains sparse fragmented UID shell.
III	27-50	10YR3/3 dark brown lightly compact fine sand with little to no shell.
IV	17-40	10YR4/3 brown sand lightly compacted fine sand.
IVa	33-44	10YR4/2 dark grayish brown sand with white inclusions, likely animal burrow.

Table 6-7. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-C, 8VO59.

Strat.	Lvl.	Depth Cmbs	SJP	SJCS	Lithic	Marine Shell	Fauna (wt/g)
I	1	0-10	2	2	1	1	24.7
II	1	10-20	2	24	8	1	355.4
II	2	20-30	4	30	7		384.0
III	1	30-40	2	2	11 ^{b, m}		248.4
III	2	40-50			6		192.9

SJP=St. Johns Plain, SJCS=St, Johns Check-Stamped, b=1 biface fragment, m=1 microlith.

Table 6-8. Stratum descriptions for TU-D, 8VO59.

Stratum	Depth B.S.	Matrix Description
I	0-10	10YR4/1 dark gray loose fine sand with trace amounts of fragmented <i>Viviparous</i> and bivalve shell and ferruginous concretions. Small rootlets and organic pellets were frequent.
II	10-36	7.5YR3/2 dark brown fine sand, lightly compacted with frequent iron concretions and minor fragmented <i>Viviparous</i> and bivalve shell. Ferruginous concretions decrease with depth. Moderate small and medium sized roots.
Ila	36-52	10YR3/3 dark brown fine, loose sand.
Ilb	36-78	10YR3/3 moisture pocket, dark brown fine, loose sand.
III	36-76	10YR4/2 dark grayish brown fine, moderately compacted sand with occasional ferruginous concretions and frequent small roots and medium roots common.
IIIa	36-54	10YR4/3 brown moderately compact fine sand, minor medium and small roots.
IV	76-88	10YR3/1 very dark gray compact fine sand with frequent iron concretions. Small roots common. Shell appears in center of unit at bottom of stratum.
V	88-104	10YR3/3 dark brown lightly to loosely compacted fine sand with abundant whole <i>Viviparous</i> and bivalve shell increasing in abundance with depth. Small roots common.
VI	104-132	10YR4/2 dark grayish brown, dry, powdery loose fine sand with abundant whole and crushed <i>Viviparous</i> , bivalve, and <i>Pomacea</i> . <i>Elimia</i> and terrestrial snails present.

Table 6-9. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-D, 8VO59.

Strat.	Lvl.	Depth cmbs	SJP	SJCS	Lithic	Wkd. Bone	Marine Shell	Fauna (wt/g)
I	1	0-10	1		1			13.7
II	1	10-20	1	4	5 ^f		2	361.2
II	2	20-30	4	2	5		3	203.7
II	3	30-36			6			81.5
III	1	36-46	2*		9			100.7
III	2	46-56			15 ^b	2		121.4
III	3	56-66			15 ^s	3 ^{bd}		400.2
III	4	66-76			13	5		633.0
IV	1	76-81			6	2		690.0
IV	2	81-88			11 ^b			438.1
V	1	88-104			3	1	1	252.7
VI	1	104-112			1	1 ^{bd}		68.6
VI	2	112-122					1	239.8
VI	3	122-132			3 ^c		2 ^p	276.6

SJP=St. Johns Plain, SJCS=St. Johns Check-Stamped, b=biface fragment, f=1 flake tool, s=1 biface stem, bd=1 bead, c=1 complete biface, 1 p=marine shell pendant. * Associated with rodent burrow in south wall of unit, likely out of context.

Table 6-10. Stratum descriptions for TU-G, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-6	10YR4/1 dark gray loosely compacted fine sand with frequent small roots and organic matter, minor disturbance. Rare faunal bone and pottery.
II	6-30	10YR3/3 dark brown loosely compacted fine sand with frequent small and medium-sized roots. Bone and artifacts increase with depth.

Table 6-11. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-G, 8VO60.

Strat.	Lvl.	Depth cmbs	ORP	SJP	SJCS	SJCS	Lithic	Wkd. Bone	Hist.	Fauna (wt/g)
I	1	0-6		1	2					9.2
II	1	6-10		1	2	1				116.6
II	2	10-20	1	13	18		7	1	1	1011.6
II*	3	20-30	4	7			13 ^m			813.1

ORP=Orange Plain, SJP=St. Johns Plain, SJCS=St. Johns Check-Stamped, STCS=Sand Tempered Check-Stamped, m=microlith. * Only half of level was excavated.

Table 6-12. Descriptions of strata in the bucket auger in the south end of TU-G, 8VO60.

Stratum	Depth B.S.	Matrix
II	30-49	10YR3/3 dark brown fine sand.
III	49-100	10YR4/2 grayish brown fine sand with abundant <i>Viviparous</i> and bivalve, minor <i>Pomacea</i> and bone.
IV	100-115	10YR3/1 dark gray sand with abundant <i>Viviparous</i> and bivalve, both whole and fragmented, minor <i>Elimia</i> , bone common.
V	115-140	10YR4/1 gray sand with increasing shell, bivalve and <i>Viviparous</i> most common, shell slightly more fragmented than previous levels, bone common.
VI	140-165	10YR3/1 dark gray sand, becoming wet, shell primarily bivalve and <i>Viviparous</i> frequent, both whole and crushed, bone scarce.
VII	165-180	10YR3/1 dark gray wet sand, very organic with minor fragmented bivalve and <i>Viviparous</i> , buried "A" horizon.
VIII	180-198	10YR7/1 light gray sand, saturated, no shell.

Table 6-13. Stratum descriptions for TU-H, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-5	10YR5/1 dark gray loose fine sand with abundant roots and organic matter.
II	5-25	10YR3/1 very dark gray lightly compacted fine sand with abundant roots. Mottling with Stratum III near base of stratum.
III	25-45	10YR3/3 dark brown lightly compacted fine sand with minor ferruginous concretions. Small roots frequent and minor fragmented shell appearing near base of stratum.
IV	45-114	10YR3/1 dark gray sand and heavily concreted shell midden. <i>Viviparous</i> and bivalve abundant, both whole and fragmented. <i>Pomacea</i> common throughout and fragmented but more whole shell with depth. Charcoal frequent throughout, roots minor.
IVa	45-49	10YR3/2 very dark grayish brown sand with moderate midden concretions, minor to moderate whole and crushed <i>Viviparous</i> and fragmented bivalve.
IVb	56-59	10YR5/1 gray fine sand, lightly compacted with minor fragmentary <i>Viviparous</i> and bivalve. Charcoal streaking throughout.
IVc	99-110	10YR5/1 gray fine sand, lightly compacted, with minor fragmented <i>Viviparous</i> and bivalve shell. Charcoal inclusions are frequent.
V*	114-208	10YR3/1 very dark gray fine sand with abundant and loosely compacted shell. Concreted midden fragments are common but substantially less concreted than Stratum IV. <i>Viviparous</i> and <i>Pomacea</i> are abundant throughout and mostly whole with moderate fragmentation. Bivalve shell also frequent, both whole and fragmented. Minor <i>Elimia</i> and mesa rams horn. Minor charcoal flecking throughout. Water table at 152 cmbs, deposits below are saturated.
VI*	208-216	10YR2/1 black sand with whole and fragmented shell, primarily <i>Viviparous</i> with moderate bivalve. This stratum is a buried A horizon, the buried original ground surface.

*Strata identified in the bucket auger in floor of unit begin at 114 cmbs.

Table 6-14 Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-H, 8VO60.

Strat.	Lvl.	Depth	ORI	SJP	SJCS	Lithic	Wkd. Bone	Marine Shell	Fauna (wt/g)
I	1	0-5							6.8
II	1	5-15		2	1	3			63.7
II	2	15-25		5	2	12b			424.2
III	1	25-35	1	10		15			916.8
III	2	35-45				3	1		356.9
IV	1	45-49							12.9
IV	2	49-59							44.5
IV	3	59-69				1			114.7
IV	4	69-74							76.9
IV	5	74-84							67.6
IV	6	84-94				3		3	106.2
IV	7	94-104				1		1	43.4
IV	8	104-114						1	151.7
V	1	114-124				1			258.6
V	2	124-134				1			184.7

ORI=Orange Incised, SJP=St. Johns Plain, SJCS=St. Johns Check Stamped, b=biface fragment.

Table 6-15. Stratum descriptions for TU-J, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-10	10YR3/1 very dark gray loose fine sand with whole and fragmented shell, primarily <i>Viviparous</i> and bivalve. Small roots and organic matter frequent.
II	10-20	10YR3/1 very dark gray lightly compacted fine sand with frequent to abundant crushed shell, mostly <i>Viviparous</i> and bivalve with lesser amounts of <i>Pomacea</i> ; <i>Elimia</i> and mesa rams horn occasional. Minor roots.
III	20-30	10YR3/2 very dark grayish brown lightly compacted fine sand with minor crushed shell inclusions, mostly <i>Viviparous</i> and bivalve. Disturbance in west half of the south wall, mottled with 10YR3/1 sand and shell from Stratum IV, probable three throw or animal burrow.
IVa	20-60	10YR5/4 yellowish brown to 10YR6/4 light yellowish brown, fine sand and ash with abundant burned and crushed shell, principally bivalve with frequent <i>Viviparous</i> . This is a heavily burned and fragmented shell zone.
IVb	44-57	10YR4/2 yellowish brown to 10YR6/4 light yellowish brown moderately compact shell zone, less burned and fragmented than Stratum IVa. Shell composition is mostly bivalve and <i>Pomacea</i> with lesser amounts of <i>Viviparous</i> . Bivalve shell has a primarily horizontal orientation. A pocket of whole <i>Pomacea</i> is present in the northeast corner and the east wall. Charcoal is frequent throughout.
Va	60-120	10YR4/2 dark grayish brown fine sand with abundant whole <i>Viviparous</i> and moderate whole bivalve and <i>Pomacea</i> . Shell is more fragmented with depth. Minor small midden concretions throughout and also increase with depth.
Vb	125-148	10YR4/2 dark grayish brown fine sand with abundant <i>Viviparous</i> and bivalve, both whole and fragmented. Moderately to highly concreted with abundant medium-sized masses. Charcoal frequent.
VI	120-160	10YR2/2 very dark brown fine sand with moderate whole and crushed shell, mostly <i>Viviparous</i> and bivalve with <i>Pomacea</i> occurring frequently both whole and fragmented. Mottling is present in floor and calcified palm roots are abundant. Probably original ground surface.
VII*	160-210	Gray to brown sand with minor faunal bone and abundant calcified palm roots.
VIII*	210-250	Gray sand with calcified palm roots.
IX*	250-250	Brown sand and calcified palm roots.

*Bucket auger only.

Table 6-16. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-J, 8VO60.

Strat.	Lvl.	Depth	ORP	SJP	SJCS	STP	Lithic	Wkd. Bone	Marine Shell	Fauna (wt/g)
I	1	0-10		10	2	1			1	114.8
II	1	10-20	1	36	3		2	2		272.4
III	1	20-30		2						263.8
IV	1	20-30								40.5
IV	2	30-40	1				3		2	203.6
IV	3	40-50		1				1		185.7
IV	4	50-60							1	299.6
V	1	60-70								65.7
V	2	70-80					1	1		183.9
V	3	80-90							1	91.2
V	4	90-100					2		1	123.8
V	5	100-110								200.9
V	6	110-120					2		2	312.4
VI	1	120-130					3 ^{n, d}			138.4
VI	2	130-140					1			102.5
VI	3	140-150					2			97.1
VI	4	150-160					1			29.2

ORP=Orange Plain, SJP=St. Johns Plain, SJCS=St. Johns Check Stamped, STP=sand tempered plain, n=Newnan point, d=distal biface fragment.

Table 6-17. Stratum descriptions for STU-1, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-9	10YR5/1 gray loose, loamy fine sand. Likely represents "O" and "A" horizons of the shell-free midden.
II	9-35	10YR5/2 grayish brown lightly compacted fine sand. Shell-free midden deposit.
III	35-52	10YR4/3 brown lightly compacted fine sand. Stratum III represents shell-free midden. Shell associated with Stratum IV appears at the bottom of this stratum.
IV	52-78	10YR5/4 gray moderately to heavily concreted midden. Shell types composing this stratum include <i>Viviparous</i> principally and bivalve secondarily, both whole and crushed. <i>Pomacea</i> occurs in lesser quantities and is typically fragmented.
V	78-97	10YR4/1 dark gray fine sand with moderate burned bivalve and <i>Viviparous</i> shell with charcoal flecking. Very compact and heavily concreted deposits at bottom led to the termination of this unit.

Table 6-18. Stratum descriptions for STU-2, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-16	10YR3/1 very dark gray fine sand and compact shell midden. Whole and fragmented <i>Viviparous</i> and bivalve are the primary shell species composing this stratum. <i>Pomacea</i> is also present but is infrequent and typically fragmented.
II	16-26	10YR6/2 pale brown fine sand and abundant compact shell midden, <i>Viviparous</i> and bivalve shells constitute the bulk of the deposit.
III	26-53	10YR5/2 grayish brown fine sand with moderate <i>Viviparous</i> and bivalve shell, both whole and fragmented. Concreted midden fragments are more frequent and this stratum ends on a completely concreted surface.
IV	53-79	10YR5/2 grayish brown fine sand, moderately to heavily concreted midden. The top of this stratum is completely concreted and is clearly burned judging from the ubiquity of burnt shell and charcoal. Shell types composing this stratum include <i>Viviparous</i> and bivalve, both whole and crushed. <i>Pomacea</i> occurs in minor amounts and is typically fragmented.
V	79-123	10YR5/2 grayish brown fine sand with moderate shell and frequent concreted zones. Shell is mostly <i>Viviparous</i> and bivalve with minor amounts of fragmented <i>Pomacea</i> . Concretion of midden deposits is extensive and renders excavation very difficult. Within this stratum there are three concreted zones separated by a looser, sandy matrix with shell. Charcoal and evidence of burning are frequent.

Table 6-19. Stratum descriptions for STU-3, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-8	10YR4/1 dark gray loose fine sand with abundant crushed and whole <i>Viviparous</i> and bivalve shell. This stratum is the uppermost part of the midden exposed and likely has been subjected to trampling and crushing by vehicle traffic and livestock trampling. Significant amounts of organic material are also present on the ground surface.
II	8-14	10YR4/1 - 10YR5/1 dark gray to gray loose fine sand with whole and crushed <i>Viviparous</i> and bivalve shell. Stratum II is less crushed than Stratum I but it too may have been subjected to trampling or other disturbance.
III	14-53	10YR 3/2 – 10YR4/2 very dark grayish brown to dark grayish brown loose to lightly compacted fine sand with moderate amounts of both whole and fragmented <i>Viviparous</i> and bivalve shell with minor <i>Pomacea</i> .
IV	53-80	10YR3/2 – 10YR3/2 very dark grayish brown to dark grayish brown loose to moderately compacted fine sand and concreted <i>Viviparous</i> and bivalve shell. Several very large concretion blocks were present and made excavation difficult. Excavation was terminated at 80 cmbs due to the density of concreted deposits.

Table 6-20. Stratum descriptions for TU-F, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-15	10YR2/1 black loose fine sand, minor <i>Viviparous</i> and bivalve shell increasing with depth. Roots and organic matter are abundant throughout.
II	15-100	10YR2/2 very dark brown loose fine sand with predominantly whole <i>Viviparous</i> with frequent crushed <i>Pomacea</i> . Bivalve shell mostly at top of stratum and fragmented. Small roots are frequent throughout.
III	39-83	10YR2/2 very dark brown fine, loose sand. Shell content decreases significantly and consists of whole and crushed <i>Viviparous</i> , <i>Pomacea</i> , bivalve, <i>Elimia</i> , and <i>Euglandia</i> . Small roots are common throughout.
IIIa	52-81	10YR3/2 very dark grayish brown loose fine sand mottled with dark gray 10YR4/1 loose fine sand, <i>Viviparous</i> , and bivalve.
IV	75-100	10YR3/1 dark gray loose fine sand and fragmented bivalve, <i>Viviparous</i> , and <i>Pomacea</i> .
IVa	63-76	10YR5/2 grayish brown fine sand with shell, minor <i>Viviparous</i> and bivalve.
IVb	65-93	10YR4/3 brown loose fine sand.
V	93-125	10YR3/2 very dark grayish brown fine sand with moderate shell, principally <i>Viviparous</i> and bivalve, fragments of concreted midden.
Va	68-124	10YR4/2 dark grayish brown compact fine sand with minor shell; <i>Viviparous</i> , bivalve, and <i>Pomacea</i> .

Table 6-21. Stratum descriptions for the bucket auger in the south end of TU-F, 8VO60.

Stratum	Depth B.S.	Matrix Description
V	125-168	10YR3/2 very dark grayish brown fine sand, concreted midden. Moderate shell, principally <i>Viviparous</i> and bivalve, fragments of concreted midden.
VI	168-185	10YR5/1 gray sand and moderate <i>Viviparous</i> and bivalve, both whole and crushed, with frequent fragmented <i>Pomacea</i> . Midden is less concreted.
VII	185-200	10YR6/1 light gray loose, ashy fine sand with frequent shell, primarily <i>Viviparous</i> , bivalve, and <i>Pomacea</i> .
VIII	200-260	10YR4/1 – 10YR5/1 dark gray to gray sand and loose, highly fragmented shell hash. Shell hash composed mostly of <i>Viviparous</i> , bivalve, and <i>Pomacea</i> . Water at 255 cmbs.
IX	260-265	10YR2/1 – 10YR3/1 wet black to very dark gray sand with whole and crushed <i>Viviparous</i> and bivalve shell. Original ground surface, buried A horizon.
X	265-275	10YR5/1 gray, wet fine sand .
XI	275-280	Gley2 5/1 greenish gray clay.

Table 6-22. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-F, 8VO60.

Strat.	Lvl.	Depth Cmbs	ORI	SJP	SJCS	SJSS	Lithic	Wkd. Bone	Marine Shell	Fauna (wt/g)
I	1	0-10	2	12	4	2	2		2	121.0
I	2	10-15		10	2		1		1	162.9
II	1	15-25		1			3		7	392.0
II	2	25-35		4			1	1 ^P	3 ^{c/g}	475.7
II	3	35-45		4				5	4	330.0
II	4	45-55	2					6	2	393.9
III	1	55-65	1						1	213.1
III	2	65-75					2		3	159.8
III	3	75-85								83.8
IV	1	75-85					1			185.1
IV	2	85-95					4 ^{b, f}			116.1
IV	3	95-105					12 ^b		1	346.1
IV	4	105-115								54.9
V	1	115-125								24.3
VI		168-185					2 ⁿ			

ORI=Orange Incised, SJP=St. Johns Plain, SJCS=St. Johns Check-Stamped, SJSS=St. Johns Simple-Stamped, p=1 bone pin, n=1 Newnan point, f=1 flake tool, c/g=1 marine shell chisel/gouge.

Table 6-23. Stratum descriptions for TU-I, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-20	10YR3/1 very dark gray loose fine sand with minor to moderate shell, abundant organic matter, and several large roots. Whole and crushed <i>Viviparous</i> makes up most of shell content, remainder consists of crushed bivalve.
II	20-55	10YR4/1 dark gray moderately compacted to lightly concreted fine sand with abundant shell. <i>Viviparous</i> constitutes the majority of the shell and is largely whole with lesser amounts crushed. Whole and fragmented <i>Pomacea</i> and bivalve are common. Stratum III begins to appear in Level 3.
III	21-54	10YR5/1 gray, lightly ashy compacted fine sand. Abundant crushed <i>Viviparous</i> and bivalve with very little whole shell.
IV	55-145	10YR3/1 dark gray sand and abundant, concreted sand and shell. Whole <i>Viviparous</i> abundant, crushed <i>Viviparous</i> and bivalve shell frequent. <i>Pomacea</i> common and fragmented.
V*	145-185	10YR4/1 dark gray fine sand, lightly compacted whole and fragmented <i>Pomacea</i> with moderate amounts of whole and crushed <i>Viviparous</i> and bivalve, similar shell hash matrix observed in TU-F and TU-H. Water table abat out 170 cmbs.
VI*	185-205	10YR3/1 very dark gray sand becoming organically enriched with minor fragmented shell, probable original ground surface.

*Bucket auger data included.

Table 6-24. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-I, 8VO60.

Strat.	Lvl.	Depth	ORP	SJP	SJI	SJCS	STP	Lithic	Wkd. Bone	Marine Shell	Fauna (wt/g)
I	1	0-10		108		14	1	1 ^{b1}		1	82.6
I	2	10-20	2	324	8	27	4	6 ^{b3}		1	547.0
II	1	20-25	1	148		1		4 ^{b1}		2	427.7
II	2	25-35	3	74				2 ^{b1}	2	1	380.4
II	3	35-45	2	19				1		1	176.6
II	4	45-55						1	3		61.6
III	1	40-50						1			28.6
III	2	50-52									4.7
IV	1	55-65								1	190.1
IV	2	65-75							1		122.6
IV	3	75-85							1	1	237.0
IV	4	85-95								1	44.5
IV	5	95-105									83.5
IV	6	105-115									196.8
IV	7	115-125									36.3
IV	8	125-135								1	186.7
IV	9	135-145							2	2	253.3
V	1	145-155									102.1
V	2	155-165									11.3

ORP=Orange Plain, SJP=St. Johns Plain, SJI=St. Johns Incised, SJCS=St. Johns Check Stamped, STP=sand tempered plain, b1= one biface fragment, b2=two biface fragments, b3=three biface fragments.

Table 6-25. Stratum descriptions for TU-L, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-14	10YR3/1 very dark gray loose fine sand with organic matter and small roots.
II	2-58	10YR3/3 dark brown to 10YR3/2 very dark grayish brown loose fine sand with abundant faunal bone and artifacts. Roots are small and frequent.
Ila	28-55	10YR3/1 very dark gray fine sand with minor fragmented <i>Viviparous</i> and bivalve shell.
III	36-115	10YR2/2 very dark brown fine sand, moderately compact with abundant whole and fragmented <i>Viviparous</i> , bivalve, and common whole and fragmented <i>Pomacea</i> .
IIIa	40-103	10YR3/2 very dark grayish brown, lightly compacted very fine sand with moderate fragmented and whole <i>Viviparous</i> and mussel with minor whole and fragmented <i>Pomacea</i> .
IIIb	80-92	10YR4/2 dark grayish brown concreted middle lens with fine sand and concreted and burned <i>Viviparous</i> and bivalve shell occurring across unit and was most frequent along the south wall.
IIIc	72-112	10YR4/1 dark gray fine sand with loose and abundant whole <i>Pomacea</i> , frequently fragmented <i>Pomacea</i> , and moderate whole and fragmented bivalve.
IV	87-140	10YR3/1 very dark gray fine sand, lightly compacted with frequently fragmented and common whole <i>Viviparous</i> and fragmented bivalve and <i>Pomacea</i> . This stratum is significantly sandier and Stratum III.
IVa	88-109	10YR5/2 grayish brown fine sand mottled with 10YR3/2 very dark grayish brown and 10YR6/1 gray fine sand. Shell is rare in this sub-stratum and consists mainly of minor whole and fragmented bivalve and <i>Viviparous</i> .
IVb	119-136	10YR3/2 very dark grayish brown fine sand, lightly compacted, with moderate fragmented and whole <i>Viviparous</i> and bivalve.

Table 6-26. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-L, East Ridge, 8VO60.

Strat.	Lvl.	Depth cmbs	FTP	SJP	Lithic	Wkd. Bone	Marine Shell	Historic	Fauna (wt/g)
I	1	0-18		6	2			2 ^c	118.8
II	1	18-28	4	14	42 ^{N, s(1)}	3		3 ^{n,ss}	1083.2
II	2	28-40		30	76 ^{s(2), m}	5			1584.8
II	3	40-50		1	116 ^{m, u}	2 ^{ds}			2050.3
II	4	50-60			44 ^b	1	1		1274.6
III	1	50-61			4	1 ^{ds}	2		557.4
III	2	61-71			2 ^b		4		561.8
III	3	71-81			4 ^{cq}		2 ^{bd(1)}		601.1
III	4	81-91			1		3 ^{bd(2)}		1092.7
III	5	91-101			2 ^b		2		1457.4
IV	1	101-111			1 ^b		2		12.0
IV	2	111-123			1 ^b				31.3
IV	3	120-130							221.7
IV	4	130-140			1		1		103.9
I-II	clean-up	0-30		2	10 ^{s(3)}				198.4

FTP=fiber-tempered pottery; SJP=St. Johns Plain; c=1 .22 cal. Cartridge; N=1 Newnan point; s(#)=soapstone; n=2 nails; ss=1 shotgun shell; m=1 microlith; ds=1 drilled shark tooth; b=1 biface fragment; cq=1 coquina stone slab; bd(#)= shell bead; u=utilized flake.

Table 6-27. Stratum descriptions for TU-K, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-14	10YR4/1 dark gray loose fine sand with small roots and organic matter.
II	14-63	10YR3/1 very dark gray lightly compacted fine sand. Moderate small and medium-sized roots. Minor <i>Viviparous</i> and bivalve shell associated with Features 8, 9, and 11 at approximately 40 cmbs in TU-K2 and TU-K3.
Ila	40-83	10YR2/2 very dark brown lightly compact fine sand with frequent <i>Viviparous</i> and bivalve shell associated with Feature 8.
III	48-110	10YR2/2 very dark brown fine, lightly compact fine sand.
IIIa	80-95	10YR2/2 very dark brown lightly compact fine sand.
IIIb	94-125	10YR2/2 very dark brown compact fine sand.
IIIc	101-119	10YR5/3 lightly compact fine sand.
IV	84-130	10YR6/2 light brownish gray fine sand. Spodic zone encountered in isolated pockets in floor.

Table 6-28. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-K1, Orange Gove locus, 8VO60.

Strat.	Lvl.	Depth cmbs	SJP	Lithic	Wkd. Bone	Fauna (wt/g)
I	1	0-7				
II	1	7-17		6		60.1
II	2	17-28		7 ^b	1	228.7
II	3	28-38		12		361.6
II	4	38-50	1	11	1	378.2
III	1	50-56		12		389.9
III	2	56-66		6 ^b	1	231.1
III	3	66-76		5		112.5
III	4	76-88		4		113.1
III	5	88-96				44.8
IV	1	96-106		2		15.4
IV	2	106-116				

SJP=St. Johns Plain; b=1 biface fragment.

Table 6-29. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-K2, Orange Grove locus, 8VO60.

Strat.	Lvl.	Depth cmbs	Lithic	Wkd. Bone	Historic Fauna (wt/g)	
I	1	0-10			6.2	
II	1	10-20	4	2 ^e	1	261.3
II	2	20-30	12	1		440.6
II	3	30-41	9			618.2
III	1	41-50	4	2		421.7
III	2	50-60	4			325.1
III	3	60-70	3 ^t	1		137.9
III	4	70-80	3			44.1
III	5	80-90	1			50.1
III	6	90-100				27.1
III	7	100-110				8.4
IV	1	110-120				0.6

e=1 bone ear spool; t=1 flake tool

Table 6-30. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-K3, Orange Grove locus, 8VO60.

Strat.	Lvl.	Depth Cmb	SJP	Lithic	Wkd. Bone	Marine Shell	Historic Fauna (wt/g)
I	1	0-15					16.2
II	1	15-28	1	6	5		17 ^s 546.4
II	2	28-35	1	3	1		2 459.0
II	3	35-46		13 ^b	1		560.7
III	1	46-57		2		1	1 315.7
III	2	57-69		3	1		353.2
III	3	69-79					67.7
III	4	79-89		1	1	1	109.7
III	5	89-100					49.8
III	6	100-112					30.8
III	7	112-123		1			30.9
IV	1	123-133					1.2

SJP=St. Johns Plain; b=1 biface fragment; s=1 brass shotgun shell.

Table 6-31. Stratum descriptions for TU-M, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-18	10YR5/1 gray sand with abundant compacted shell; <i>Viviparous</i> abundant, <i>Pomacea</i> frequent, and frequent bivalve. Abundant small roots throughout.
II	18-47	10YR3/2 very dark grayish brown to 10YR4/2 dark grayish brown relatively loose sand with abundant shell; abundant whole <i>Viviparous</i> , frequent <i>Pomacea</i> and bivalve, minor <i>Elimia</i> . <i>Pomacea</i> and bivalve are typically fragmented although many whole <i>Pomacea</i> were observed and fragmentation may be due to breakage during excavation. Concreted tabular lenses are present at the bottom of this stratum. Moderate small to medium-sized roots.
III	47-82	10YR3/2 very dark grayish brown (top of stratum) to 10YR4/1 dark gray fine sand with frequent highly fragmented shell, mostly <i>Pomacea</i> and bivalves secondarily with few <i>Viviparous</i> . Charcoal flecks and concentrations were observed in this stratum. Toward the bottom of Stratum III <i>Pomacea</i> decreases and <i>Viviparous</i> increases in frequency. Artifacts and fauna likewise increase in this stratum.
IV	82-102	10YR4/1 dark gray very compact to concreted shell and shell. Shell concretions occur throughout the floor of the 1x1m unit at the east end of this unit. Burned bivalve accounts for most of the concreted lenses. Both artifacts and fauna are less frequent than in Stratum III.

Table 6-32. Vertical distribution and frequency of artifacts and fauna by stratum and level in TU-M, South Shell Knoll, 8VO60.

Strat.	Lvl.	Depth cmbs	ORP	SJP	Lithic	Wkd. Bone	Marine Shell	Historic	Fauna (wt/g)
I/II	1	0-18	1	11	1		7	5	289.2
II	1	18-27							174.9
II	2	27-37							445.5
II	3	37-47				1			476.4
III	1	47-59			1		6		709.2
III	2	59-70			2		3		368.2
III	3	70-82							80.0
IV	1	82-92					1		149.4
IV	2	92-102							74.4

Table 6-33. Stratum descriptions for STU-4, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-14	10YR5/1 gray sand and shell, loosely compacted. Shell consists primarily of <i>Viviparous</i> and bivalve shell with minor amounts of <i>Pomacea</i> . A concreted zone composed largely of burned bivalve shell and <i>Viviparous</i> was encountered in the middle of this stratum and appears to represent a burning event. A moderate amount of faunal bone along with a lithic flake and marine shell fragment were recovered from this stratum.
II	14-50	10YR4/1 dark gray sand and shell. Shell consists of large whole <i>Pomacea</i> , and frequent <i>Viviparous</i> , and bivalve. Faunal bone is frequent from this stratum. In addition to faunal bone a small amount of lithic debitage and a <i>Busycon</i> gouge were recovered from Stratum II.
III	50-59	10YR4/1 dark gray sand and shell, very compact. A minor amount of faunal bone was recovered from this stratum but no other cultural materials.
IV	59-60	10YR4/1 dark gray concretion zone consisting of burned <i>Viviparous</i> and bivalve shell. A trace amount of faunal bone was recovered but no other artifacts.
V	60-69	10YR5/1 gray sand and shell. Shell consists primarily of small <i>Viviparous</i> shell, both whole and fragmented. Only trace amounts of faunal bone were recovered but no other cultural materials.

Table 6-34. Stratum descriptions for STU-5, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-13	10YR6/1 light gray loose fine sand. Minor faunal bone is present.
II	13-30	10YR3/3 dark brown lightly compacted fine sand with abundant faunal bone. Artifacts include a lithic waste flake, a single piece of worked bone, and five pieces of fired clay
III	30-65	10YR5/2 grayish brown sand and shell, lightly compact. Shell consisted principally of <i>Viviparous</i> shell with lesser amounts of bivalve. A moderate amount of bone was recovered from this stratum, but no artifacts. An impenetrable stratum of concreted shell midden was reached at 65 cmbs.

Table 6-35. Stratum descriptions for STU-6, 8VO60.

Stratum	Depth B.S.	Matrix Description
I	0-17	10YR6/1 light gray loose fine sand. No cultural materials were recovered.
II	17-58	10YR5/2 grayish brown fine sand. Minor faunal bone, a single lithic waste flake, and a single sherd of St. Johns Plain pottery was recovered from this test.
III	58-90	10YR4/2 dark grayish brown fine sand. A trace amount of faunal bone was recovered but no other cultural materials.

Table 6-36. Radiometric dates from the Thornhill Lake Complex.

Beta Lab #	Provenience	Material	¹³ C/ ¹² C Ratio	Conv. ¹⁴ C	Cal. B.P.*	Cal. B.C.*
231047	Mound A, auger, 106-114 cmbs	charred material	-22.8o/oo	4170+/-50	4840-4530	2890-2580
231048	Mound B, Stratum VI, Lvl. 3	charred material	-26.0o/oo	4970+/-40	5860-5830 5750-5600	3910-3880 3800-3660
231049	South Ridge, TU F, Fea. 7	charred material	-25.1o/oo	4950+/-90	5910-5580 5520-5480	3960-3630 3570-3530
231050	North Ridge, TU J, Str. Va, Lvl. 1	charred material	-24.3o/oo	5170+/-40	5990-5900	4040-3940
231051	North Ridge, TU J, Str. VI, Lvl. 2	charred material	-26.5o/oo	5420+/-40	6290-6180	4340-4230
231052	TU H, Fea. 2, Lvl.2	charred material	-22.7o/oo	5190+/-40	6000-5900	4050-3950
231053	TU H, Str. IV, Lvl. 1	charred material	-24.4o/oo	5130+/-40	5990-5960 5950-5740	4040-4010 4000-3800
231054	TU I, Str. V, Lvl. 2	charred material	-26.1o/oo	4430+/-40	5280-5160 5130-5100 5080-4870	3330-3219 3180-3150 3130-2920
271085	East Ridge, TU-L, Str. III, Lvl. 2	charred material	-25.3 o/oo	5060+/-40	5910-5710	3960-3760
271086	East Ridge, TU-L, Str. IV, Lvl. 4	charred material	-25.3 o/oo	5420+/-40	6290-6180	4340-4230

* Dates reported at the two sigma range.

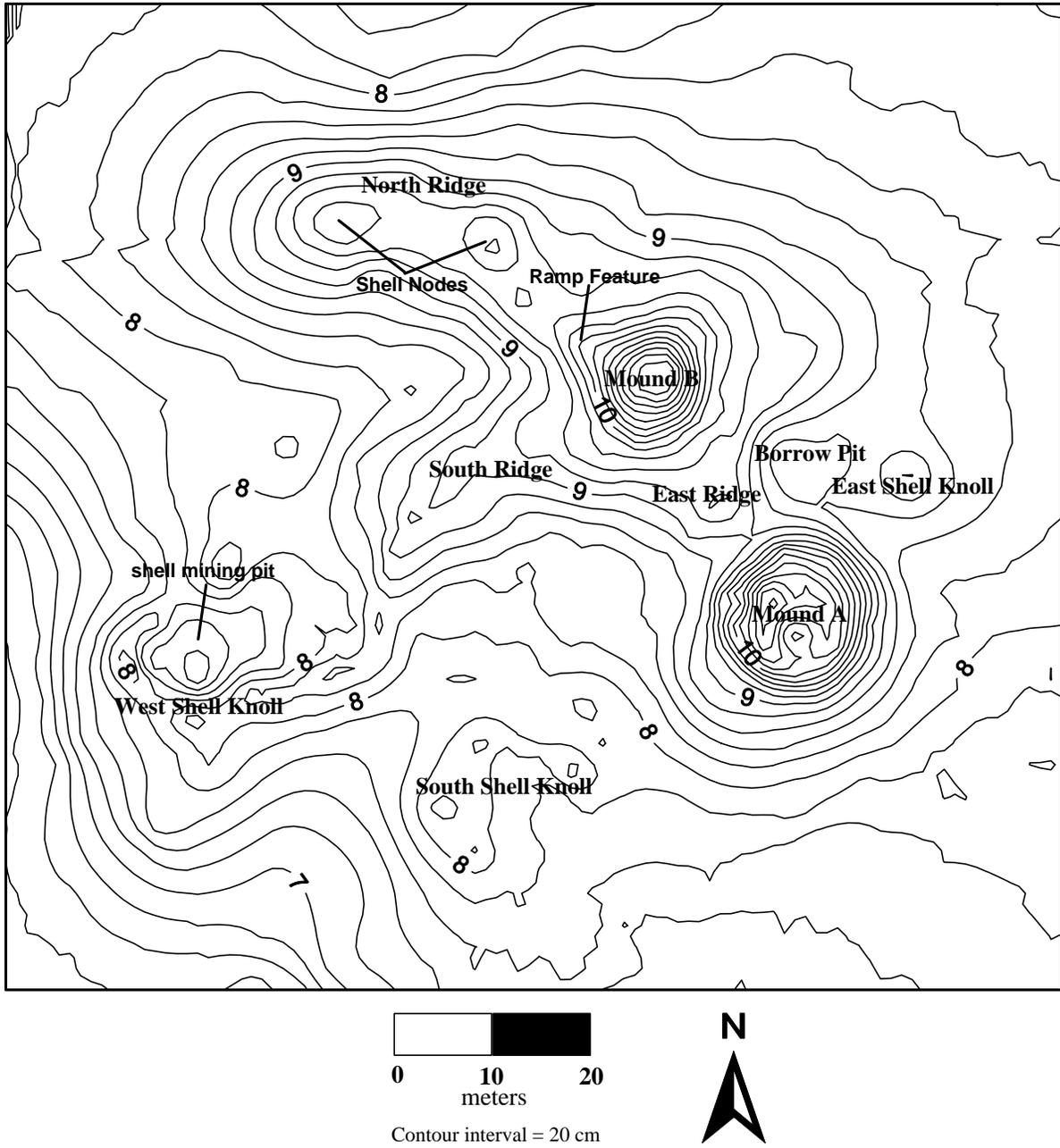


Figure 6-1. Topographic map of the Thornhill Lake Complex.

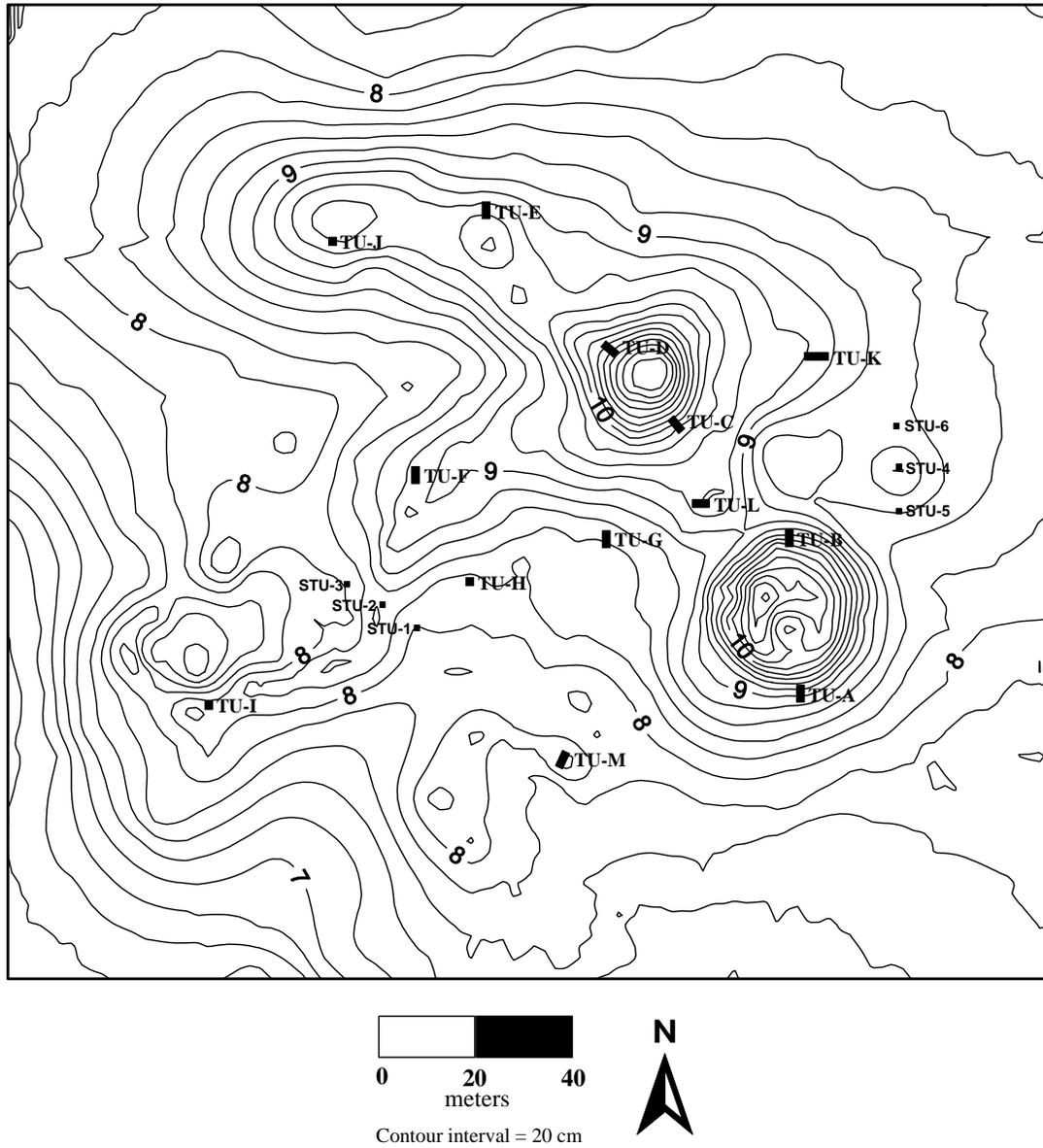


Figure 6-2. Location of Test Units and Shovel Test Units at the Thornhill Lake Complex.

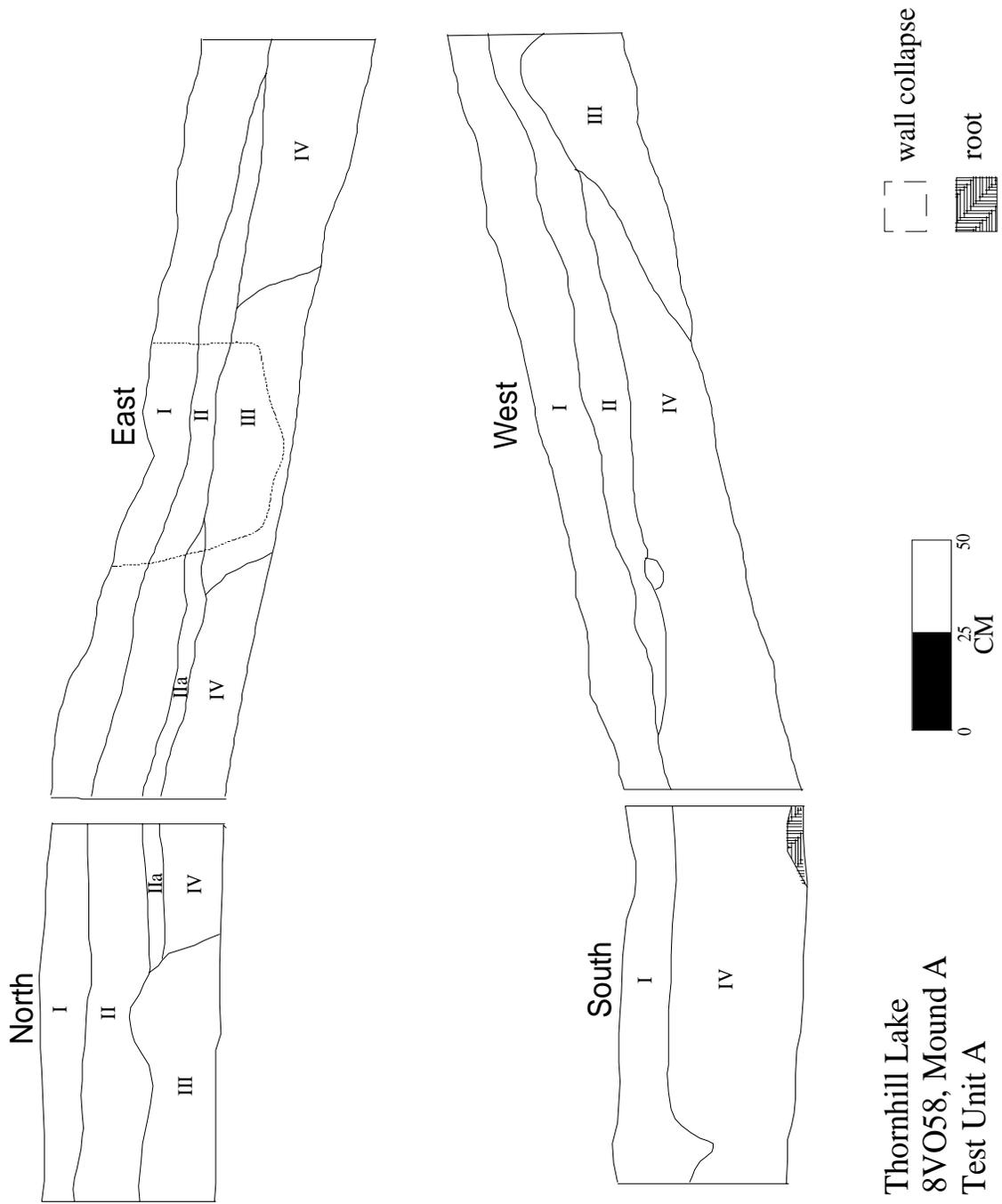


Figure 6-3. Test Unit A wall profiles, Mound A, 8VO58.

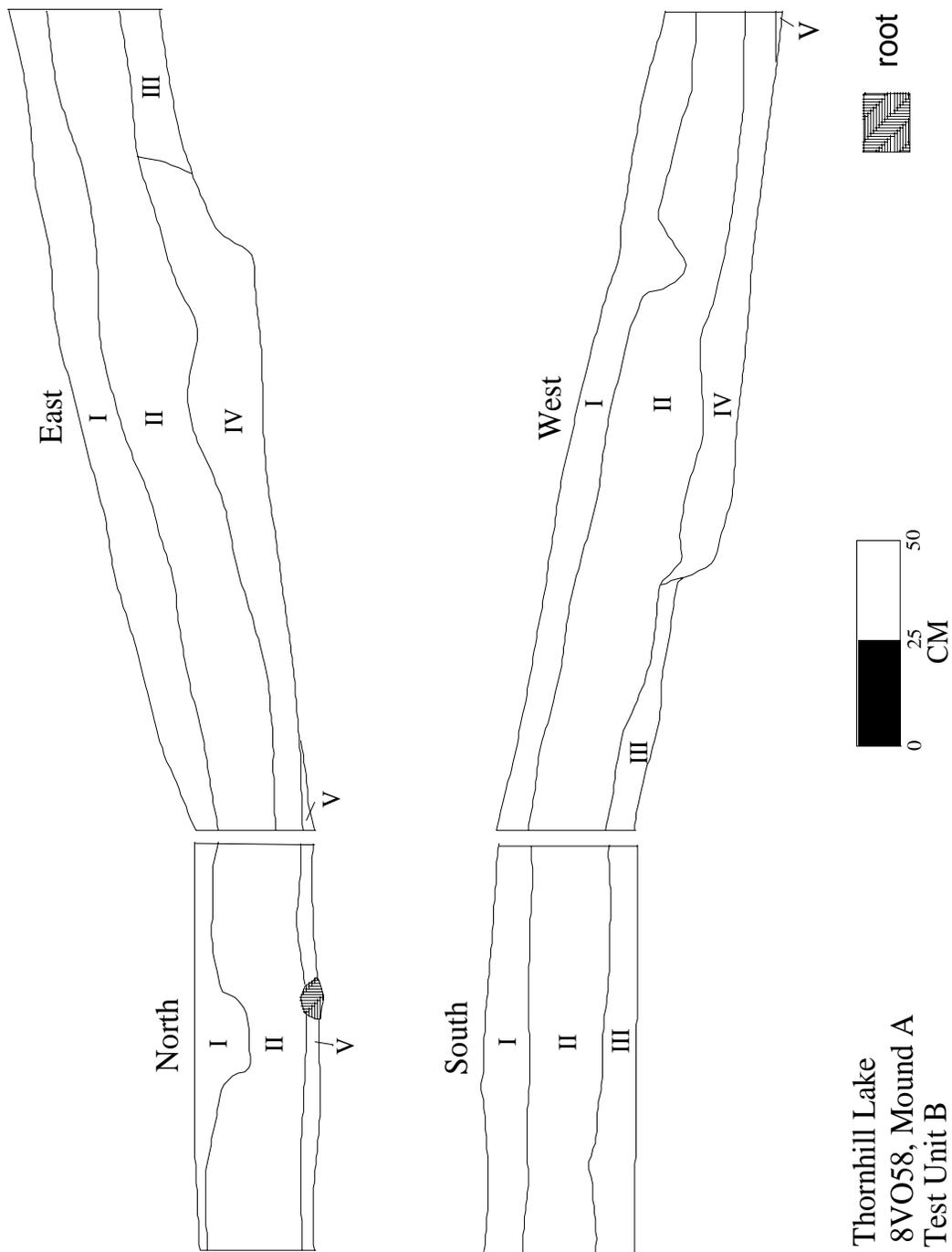


Figure 6-4. Test Unit B profiles, Mound A, 8VO58.

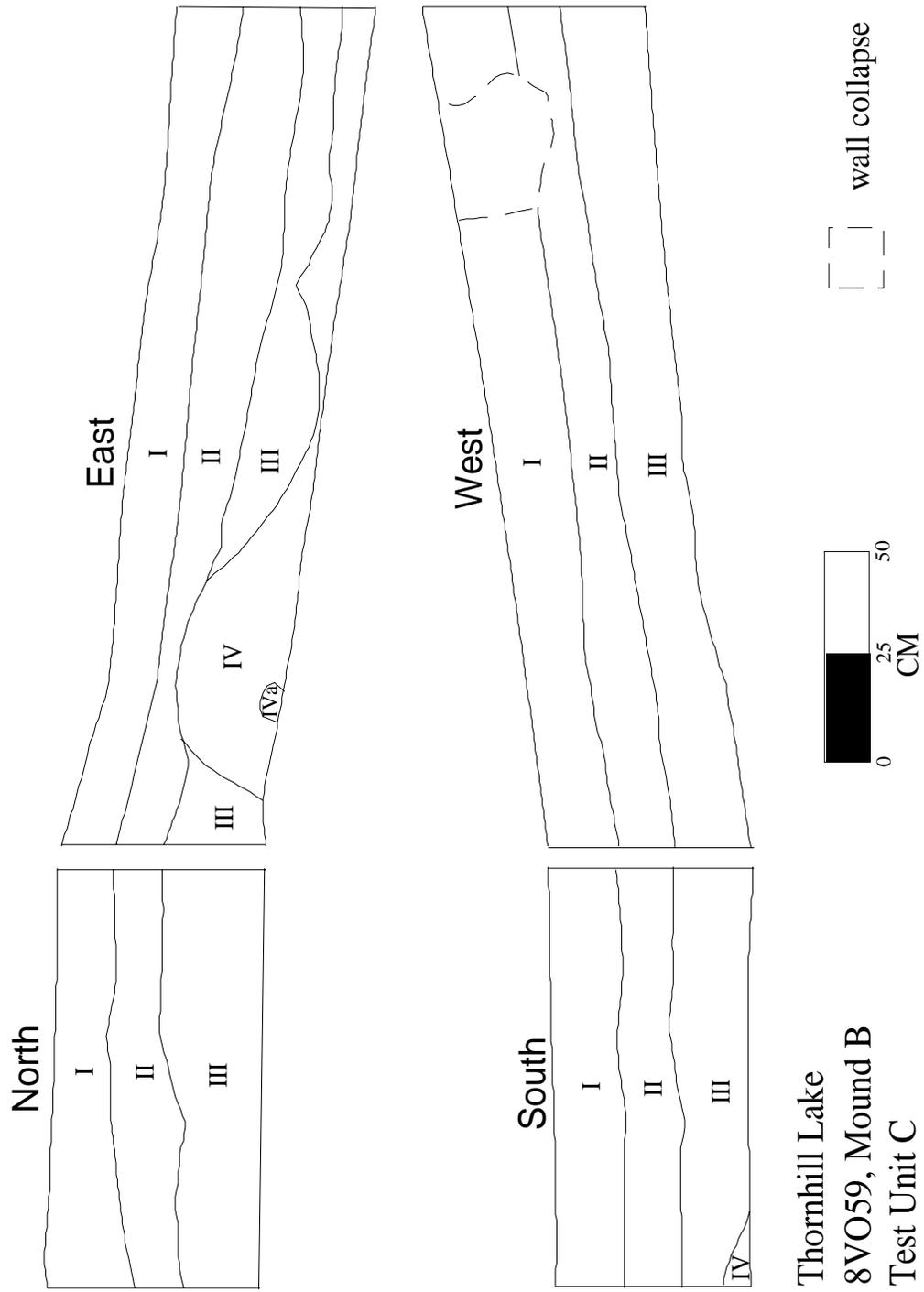


Figure 6-5. Test Unit C profiles, Mound B, 8VO59.

Thornhill Lake Mound B
8VO59
Test Unit C
Features 1 and 2

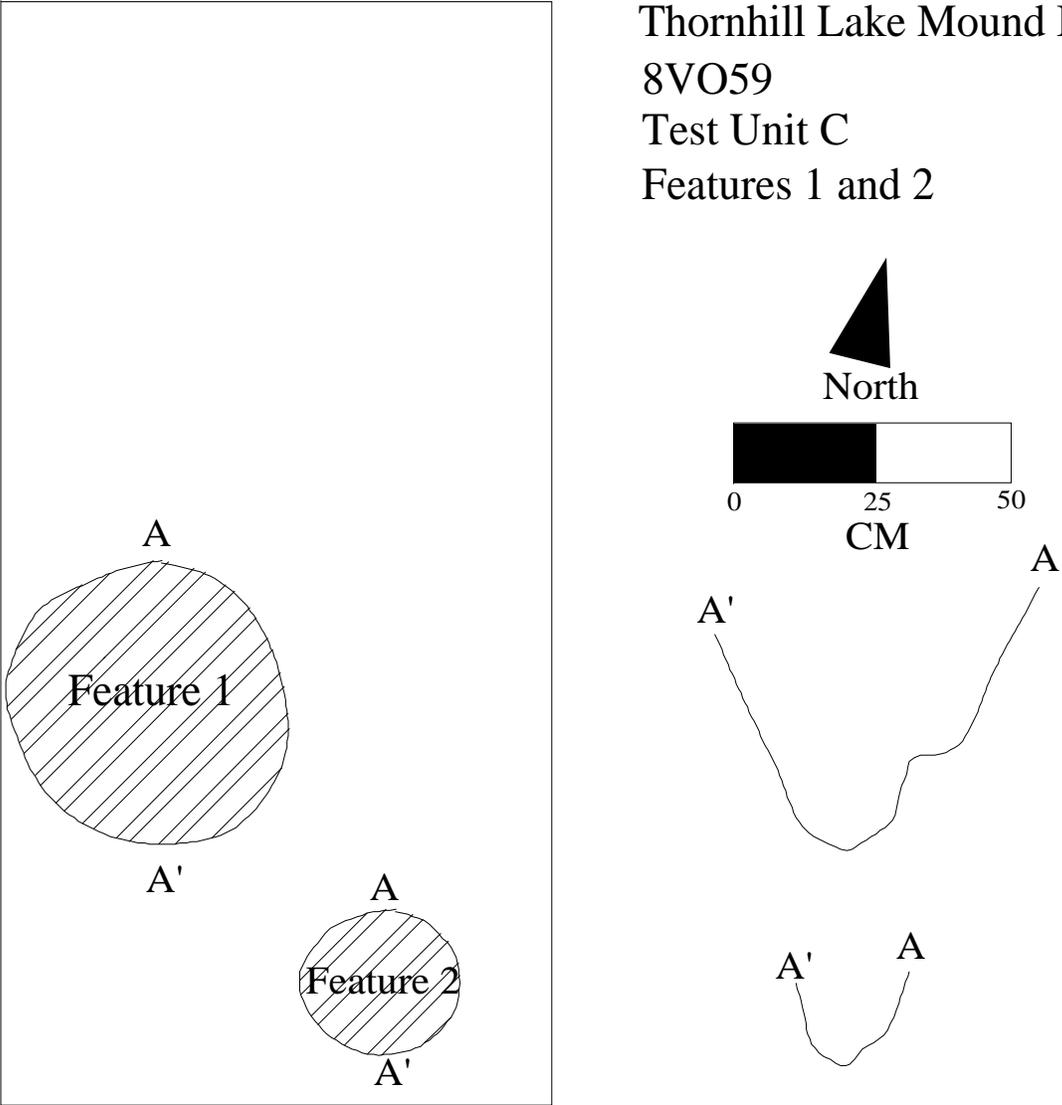


Figure 6-6. Features 1 and 2, post-excavation plan and cross-section, Test Unit C, Mound B, 8VO59.

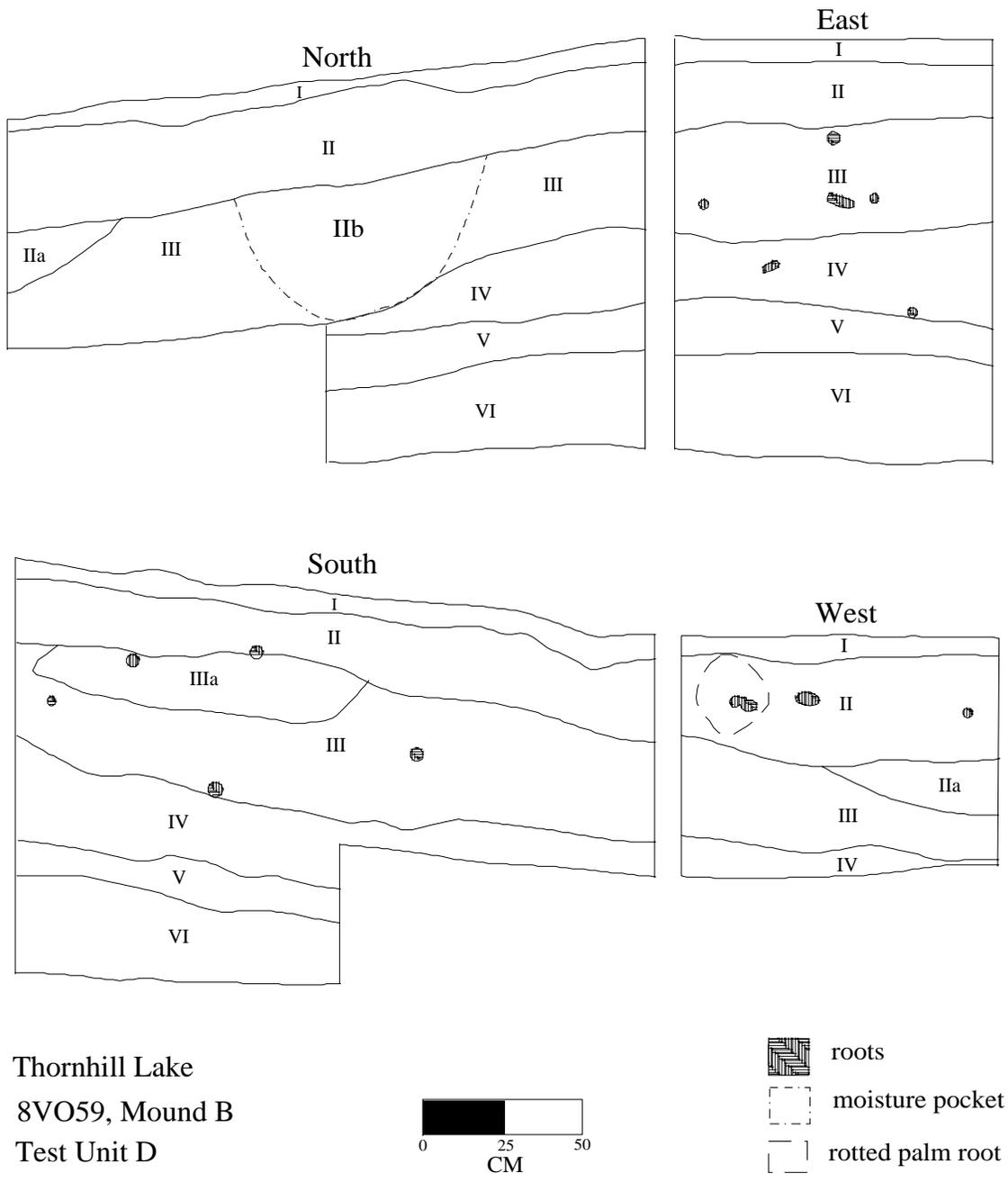


Figure 6-7. Test Unit D unit profiles, Mound B, 8VO60.

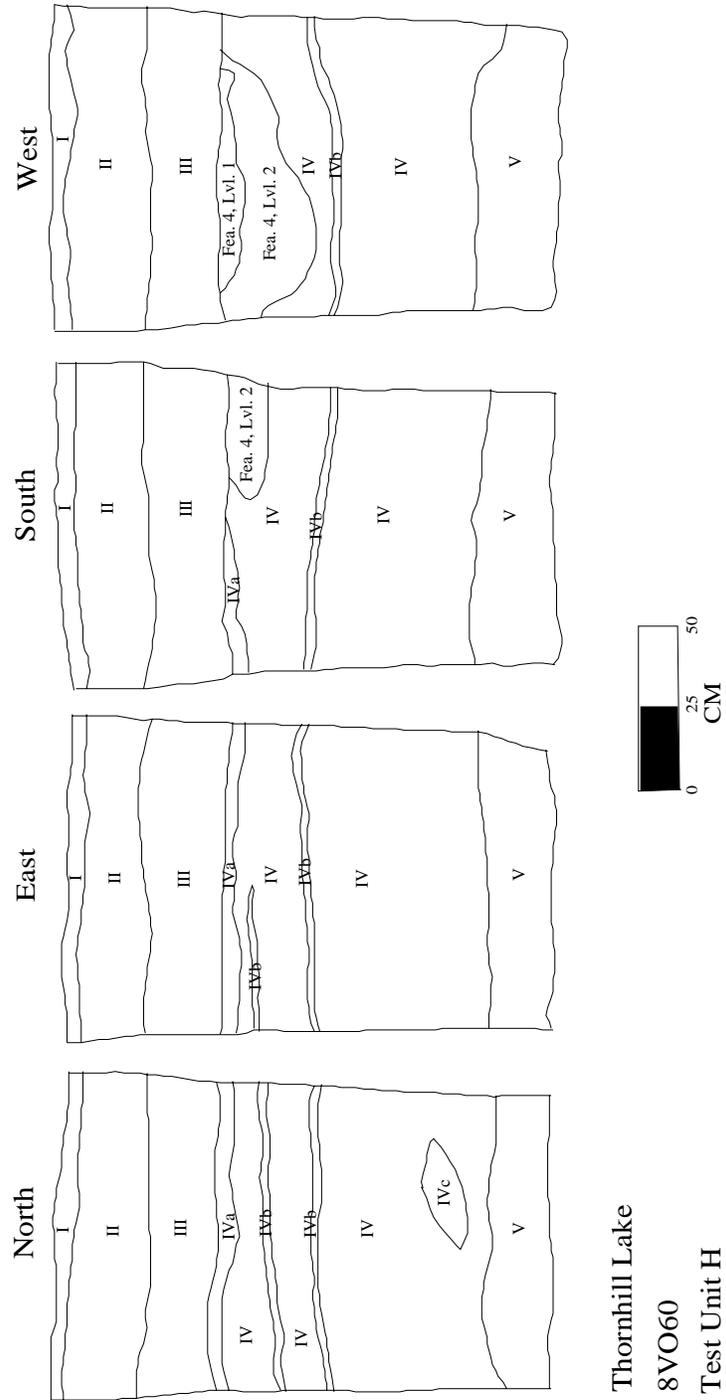


Figure 6-8. Test Unit H unit wall profiles, 8VO60.

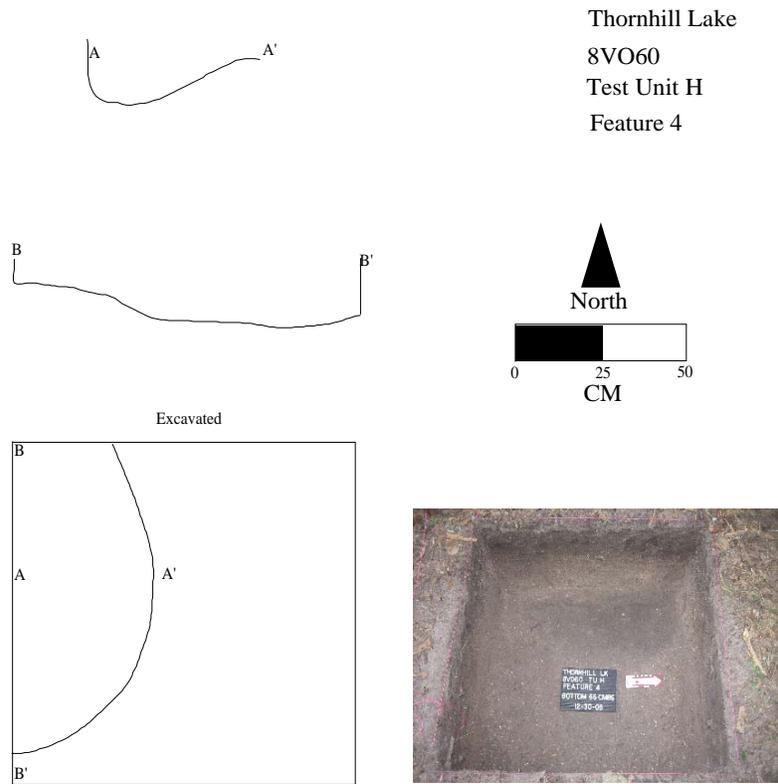


Figure 6-9. Feature 4 plan and cross-section, Test Unit H, 8VO60.

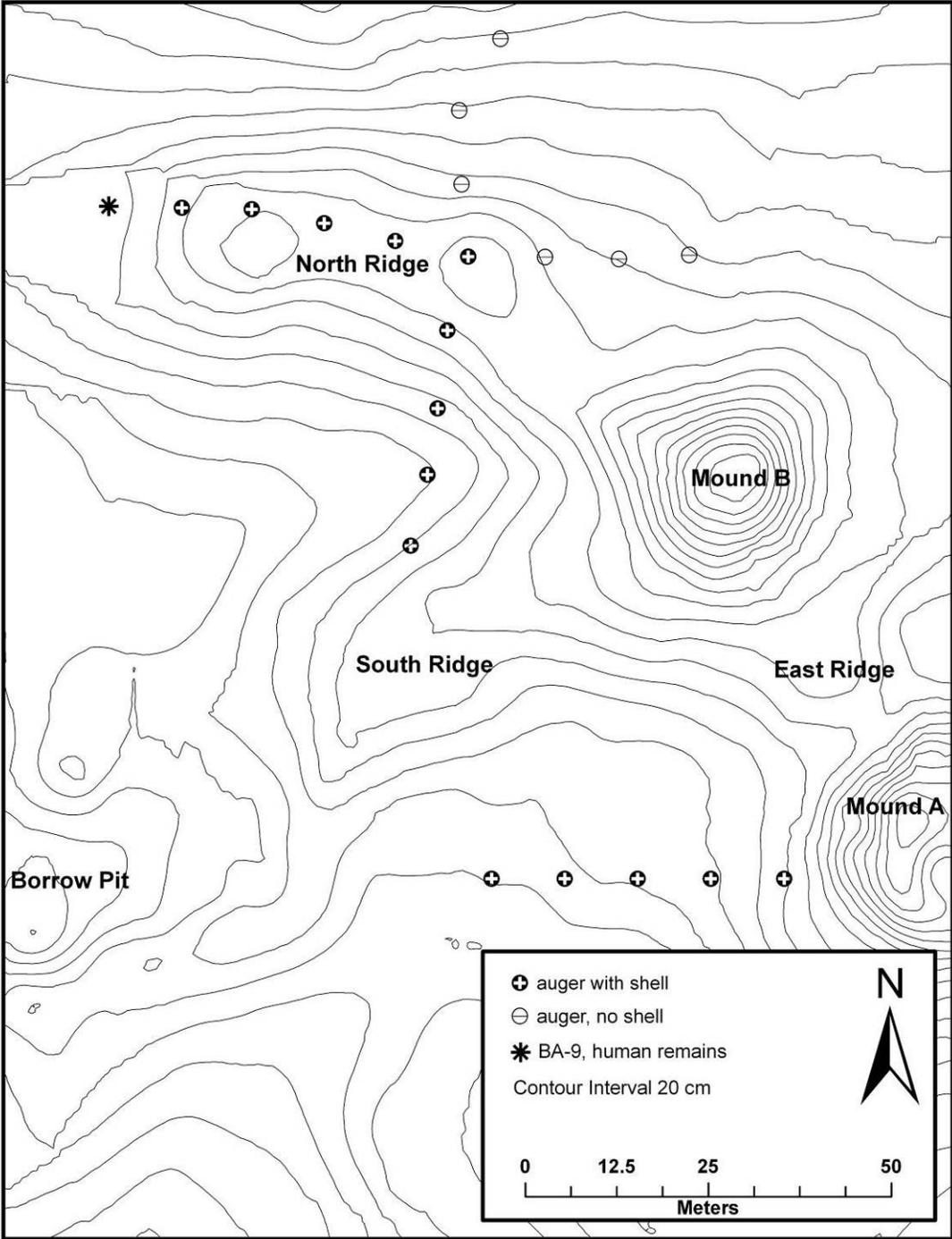


Figure 6-10. Map of auger tests on the North Ridge and along the east-west baseline.

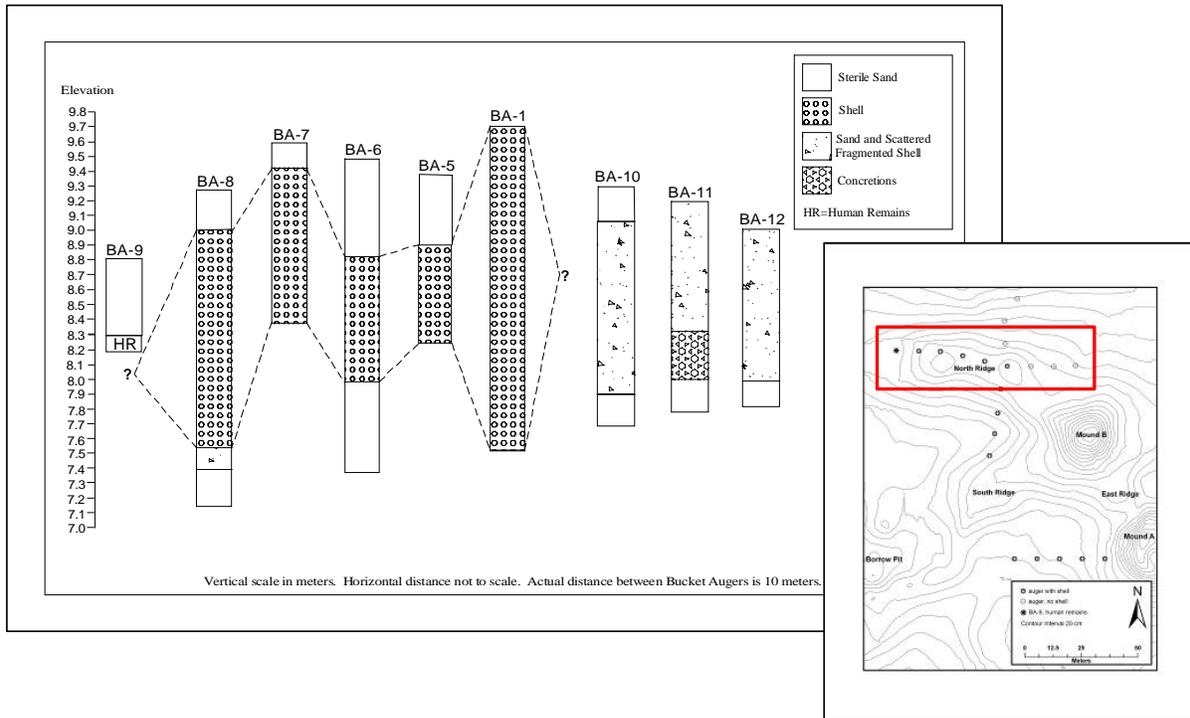


Figure 6-11. Auger profiles from the North Ridge along the east-west transect.

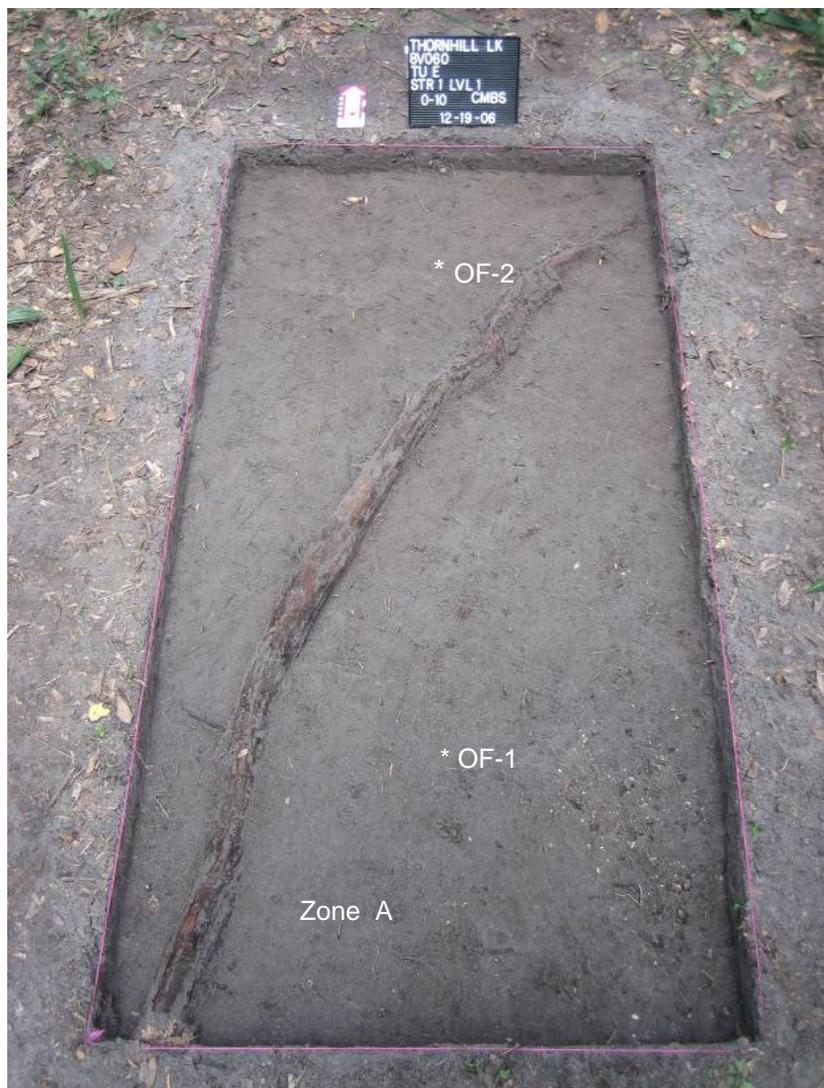


Figure 6-12. Test Unit E at bottom of Level 1, 10 cmbs. Midden is beginning to appear in the southwest corner, facing north.

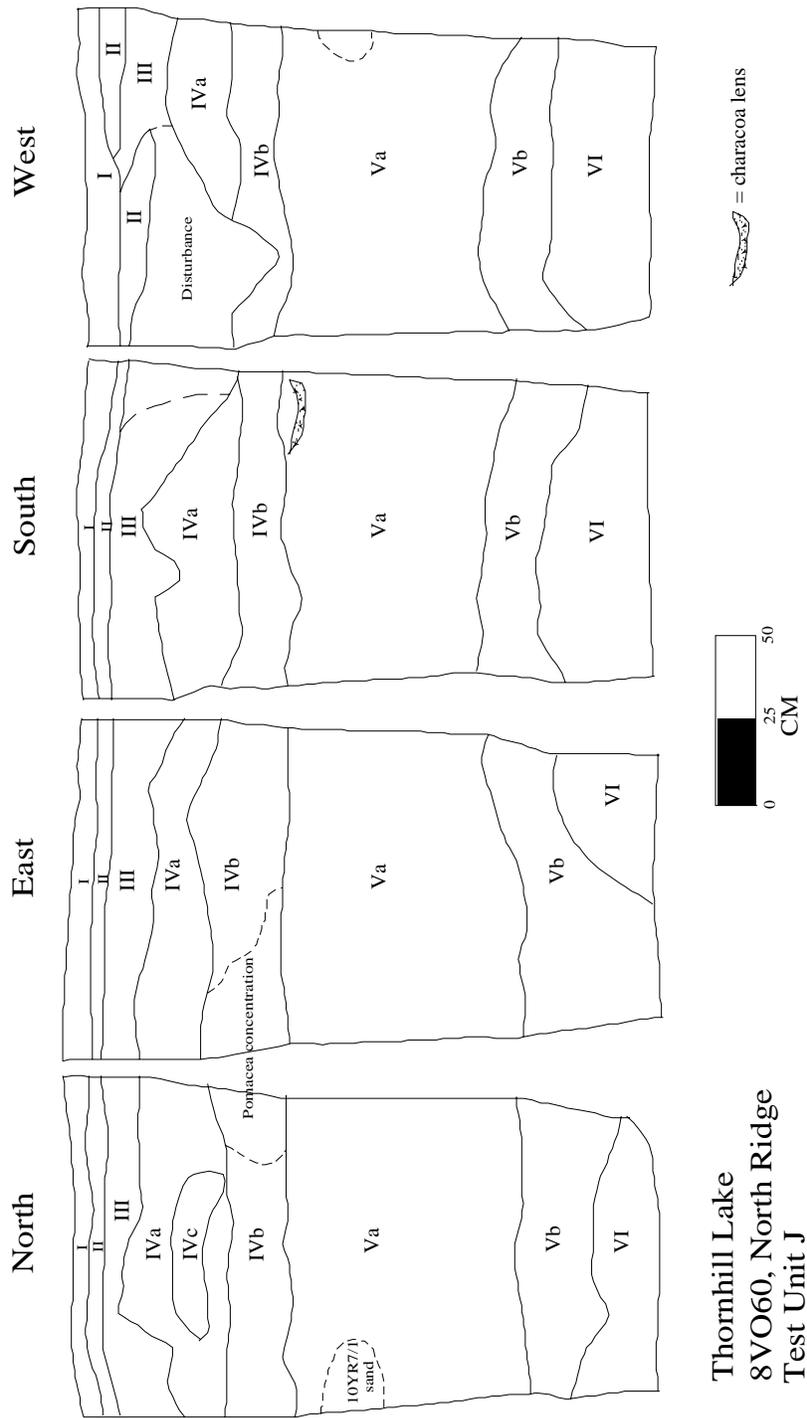


Figure 6-13. Test Unit J wall profiles, North Ridge, 8VO60.

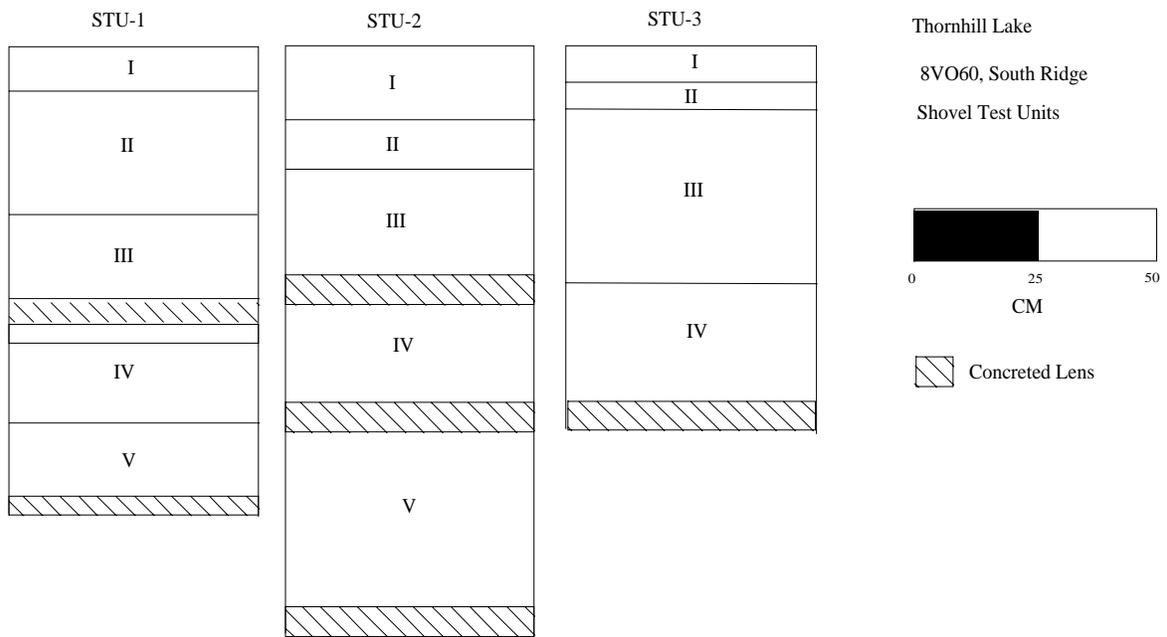
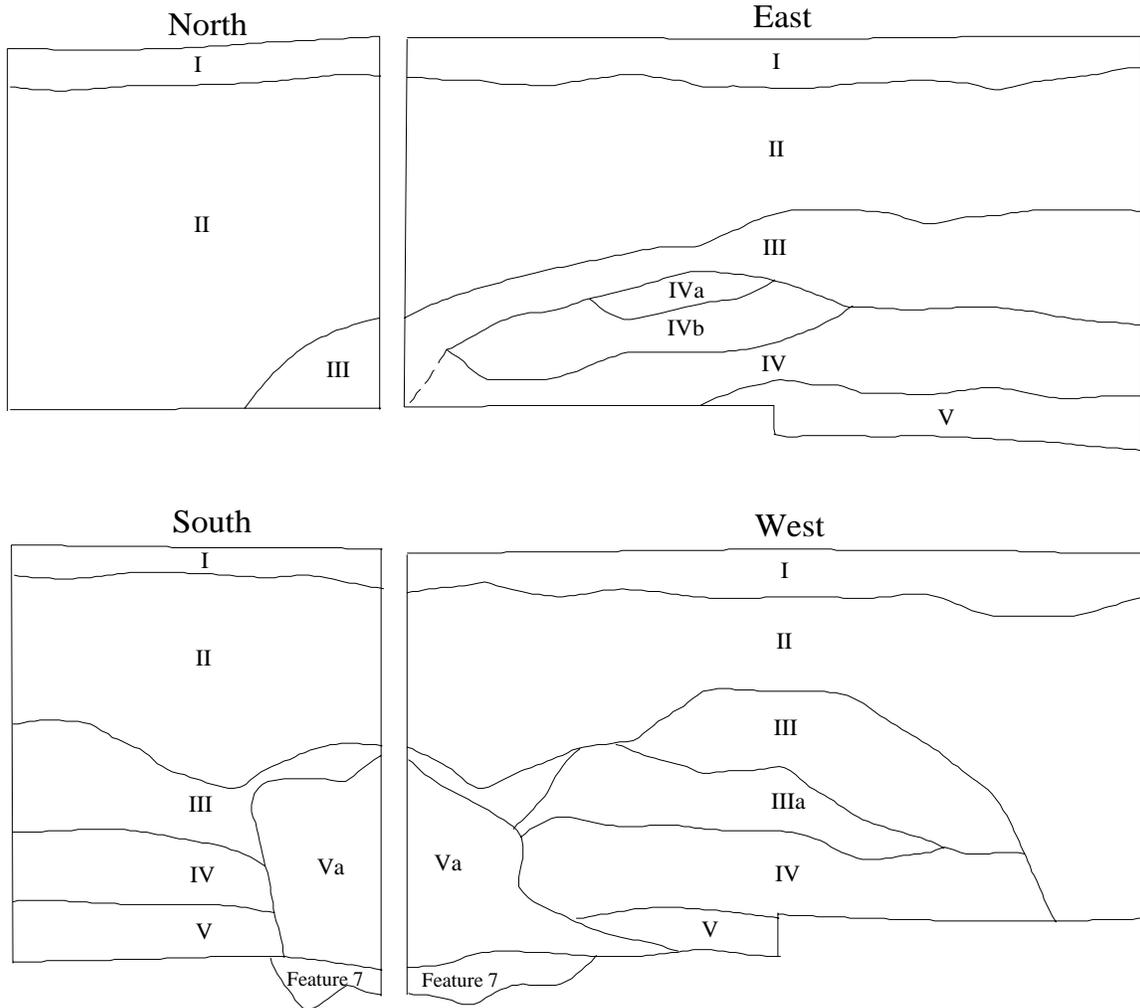


Figure 6-14. Profiles for Shovel Test Units on the South Ridge, 8VO60.



Thornhill Lake
 8VO60, South Ridge
 Test Unit F

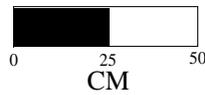
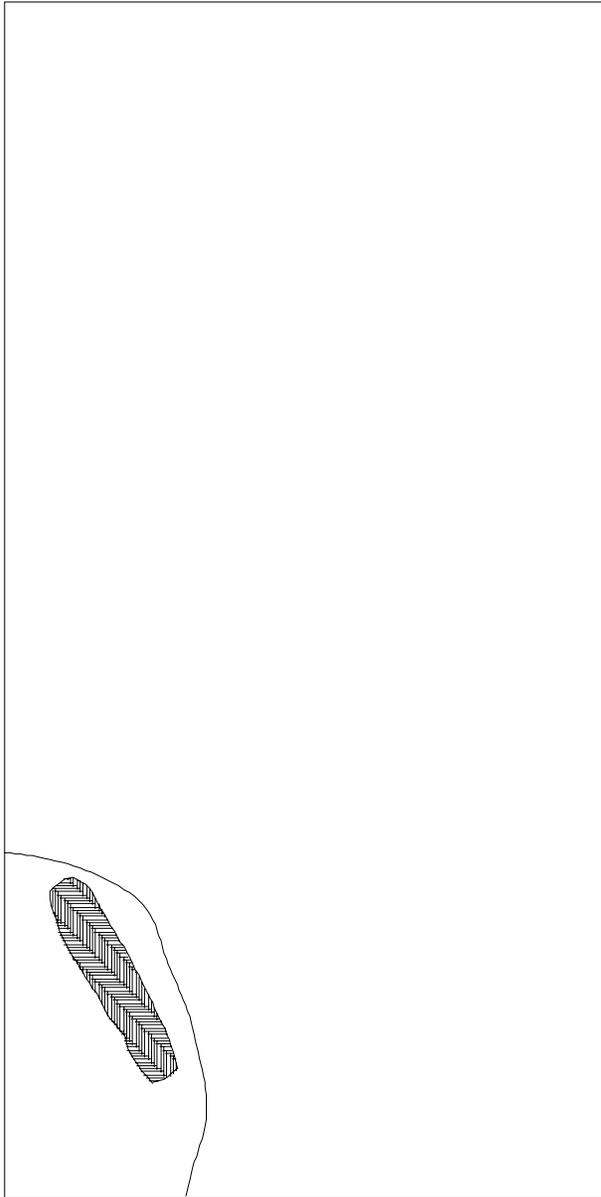


Figure 6-15. Profiles for TU-F, South Ridge, 8VO60.



Thornhill Lake Midden
8VO60
Test Unit F
Feature 7 Excavated

 Charred Log

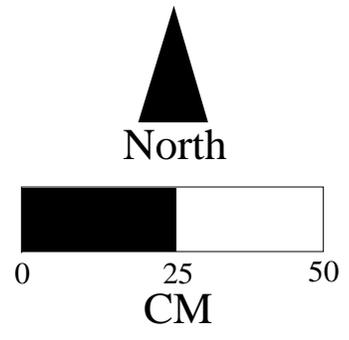


Figure 6-16. Feature 7 post-excavation, South Ridge, 8VO60.

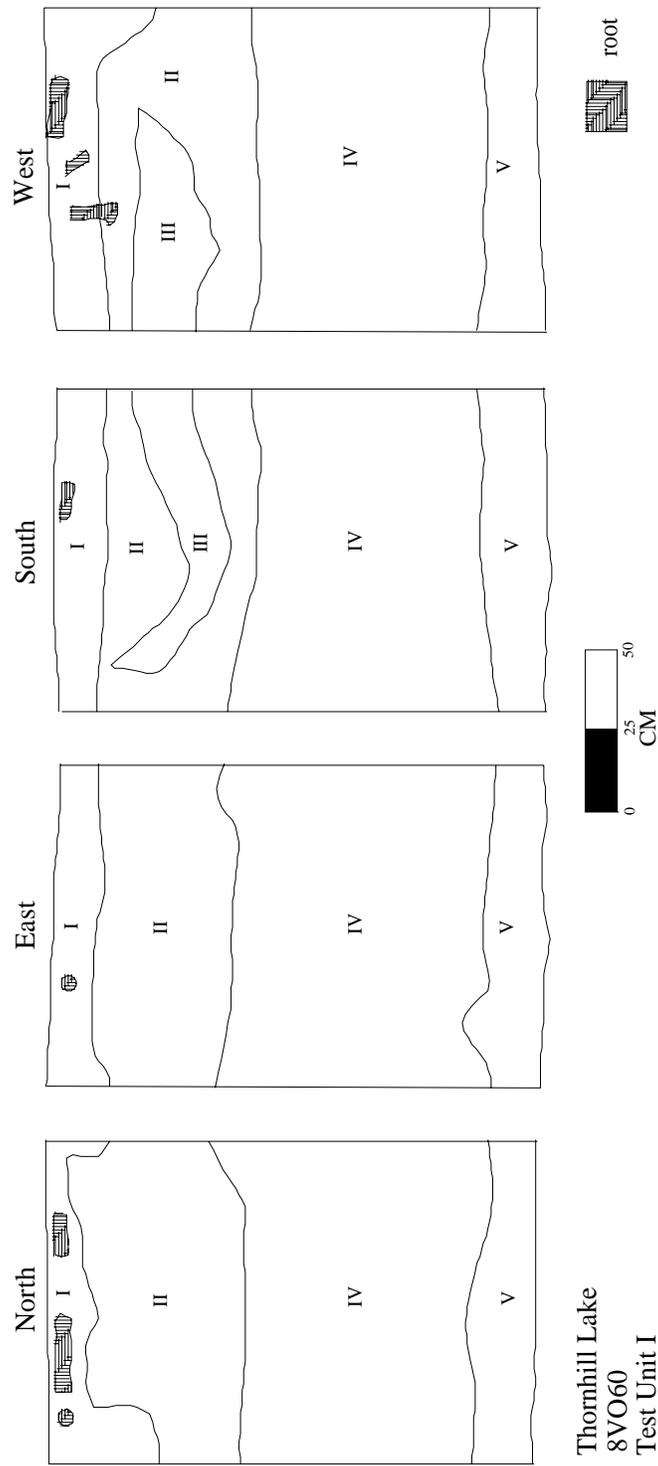


Figure 6-17. Test Unit I wall profiles, 8VO60.

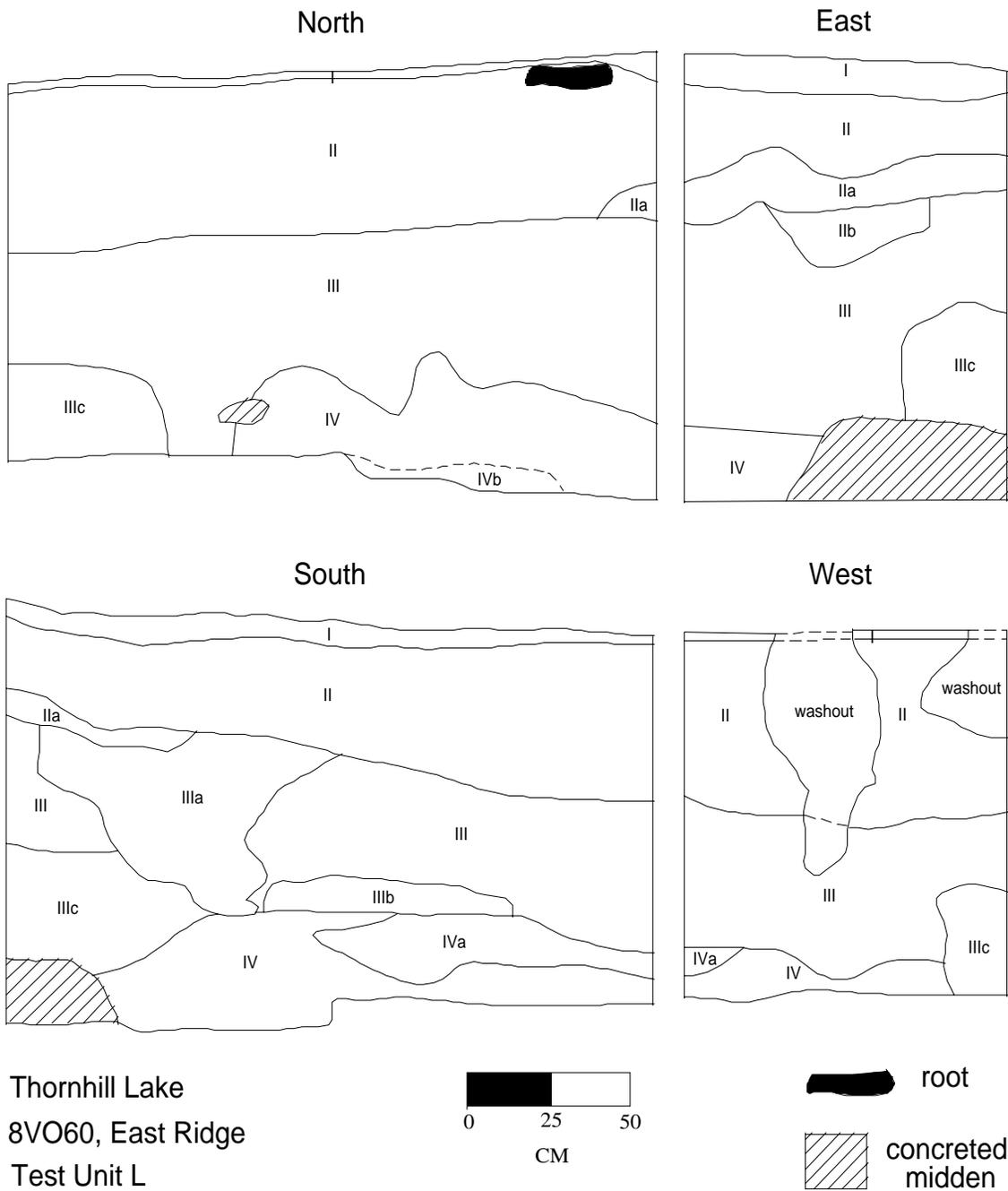


Figure 6-18. Test Unit L profiles, East Ridge, 8VO60.

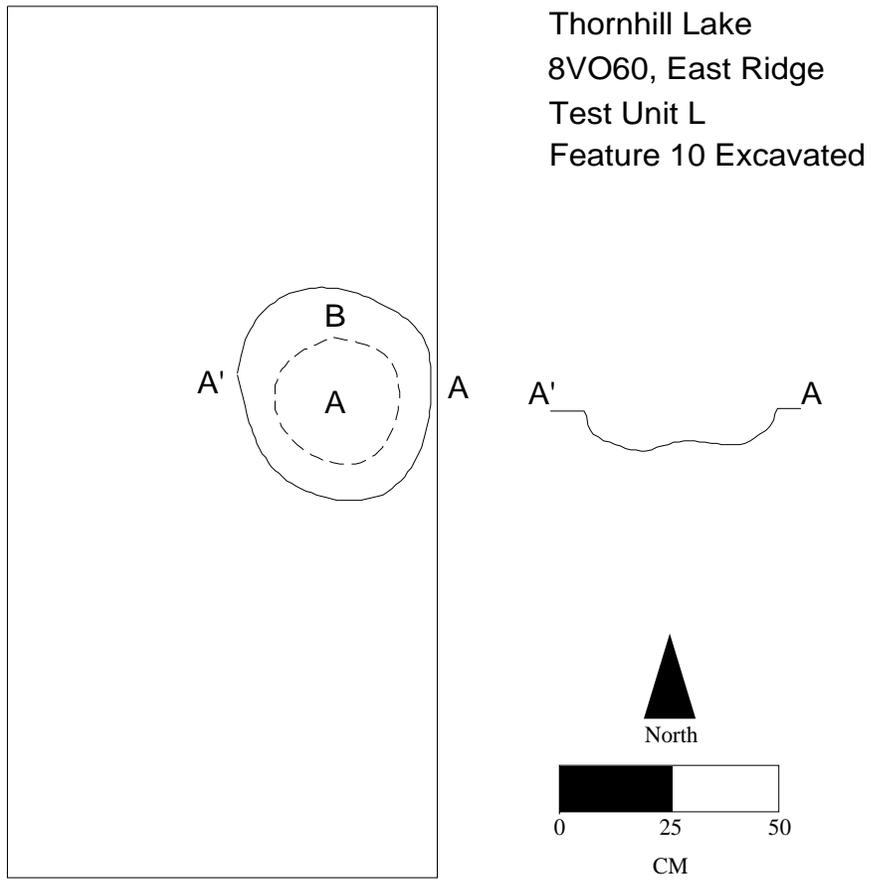


Figure 6-19. Feature 10, Test Unit L, East Ridge, 8VO60.

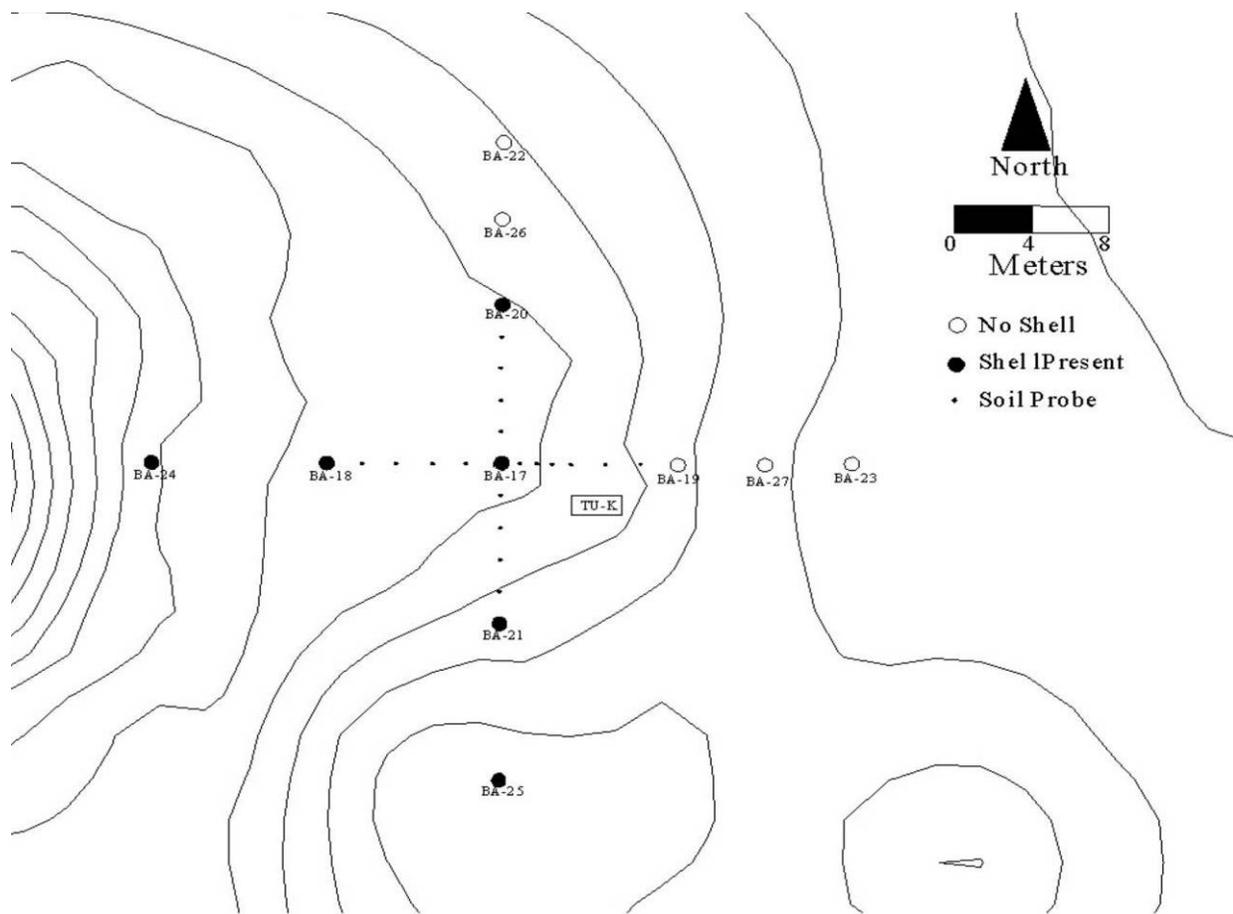


Figure 6-20. Location of augers, soil probes, and TU-K in the Orange Grove locus east of Mound B.

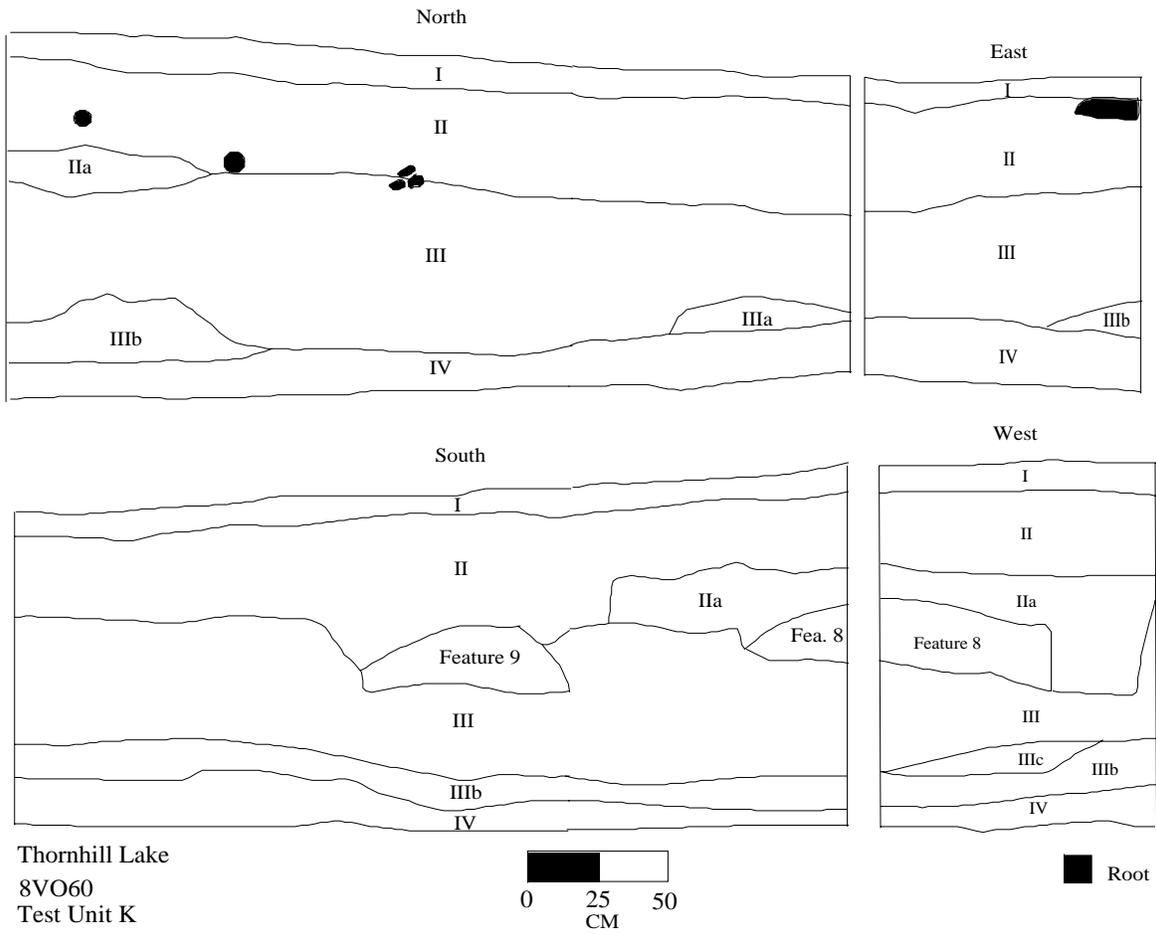


Figure 6-21. Test Unit K profiles, Orange Grove, 8VO60.

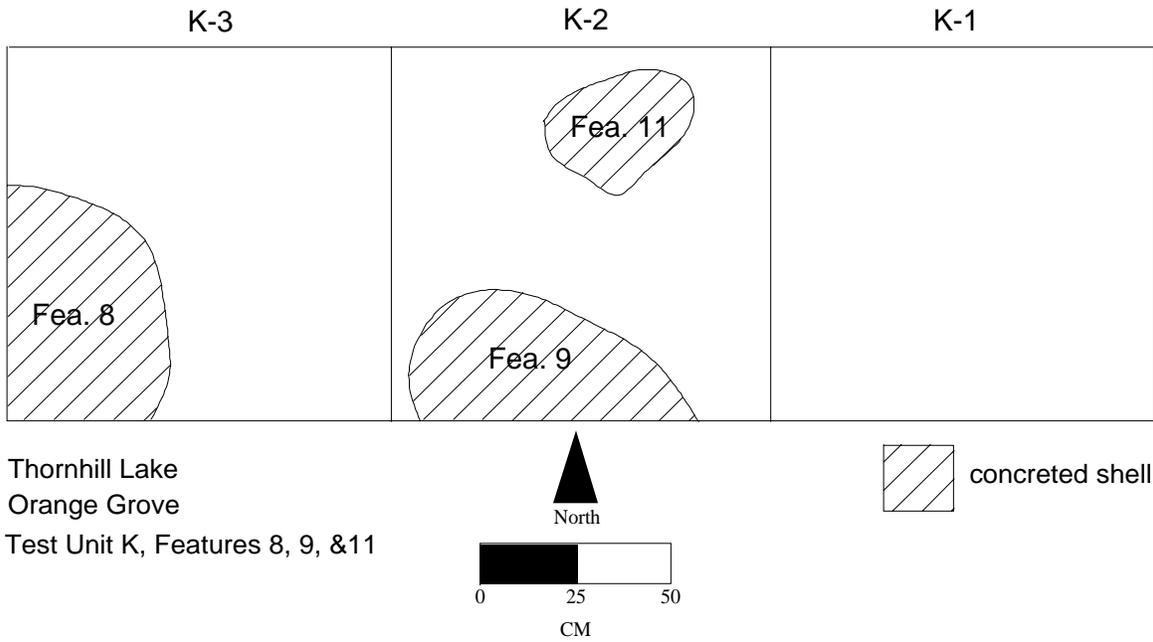
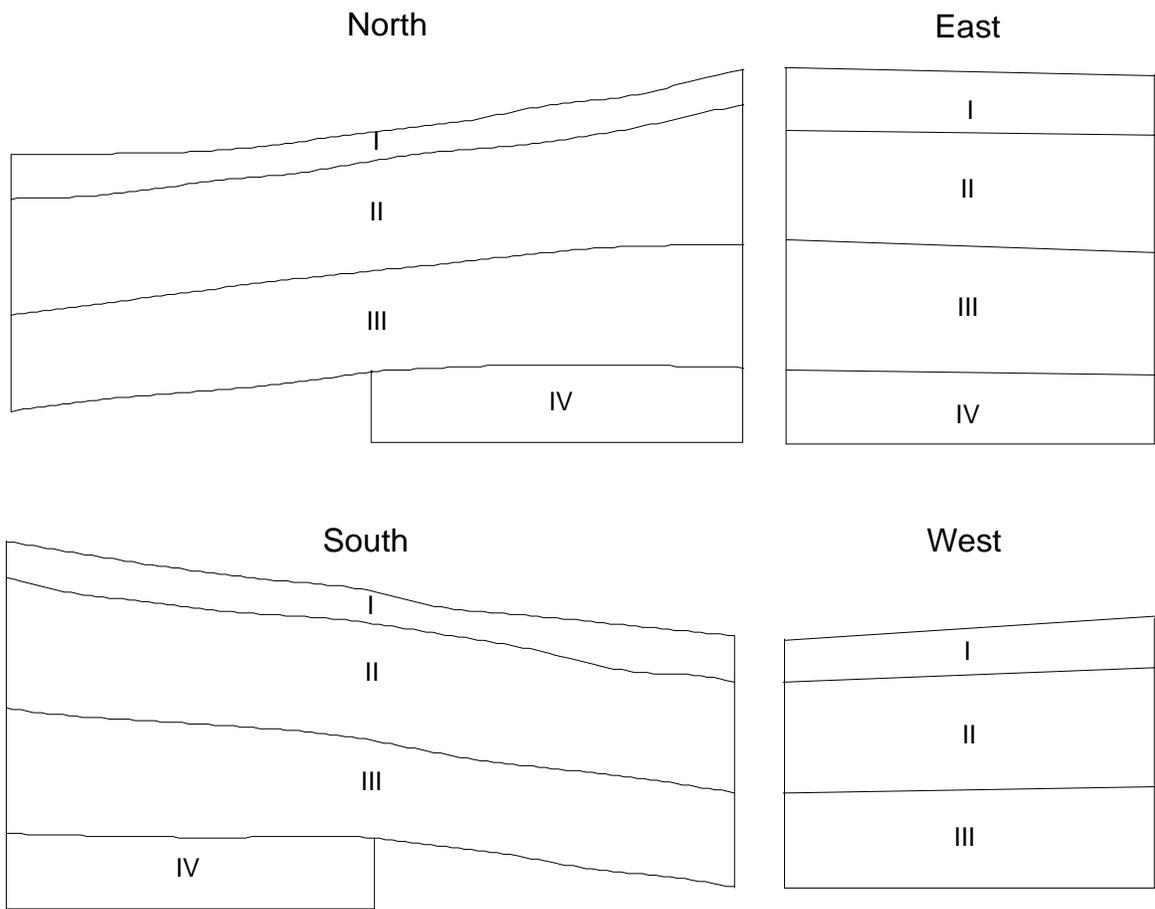


Figure 6-22. Test Unit K features, Orange Grove, 8VO60. See Figure 6-21 for feature cross-sections



Thornhill Lake
 8VO60, South Shell Knoll
 Test Unit M

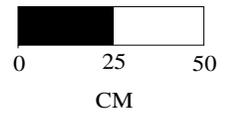


Figure 6-23. Test Unit M profiles, South Shell Knoll, 8VO60.

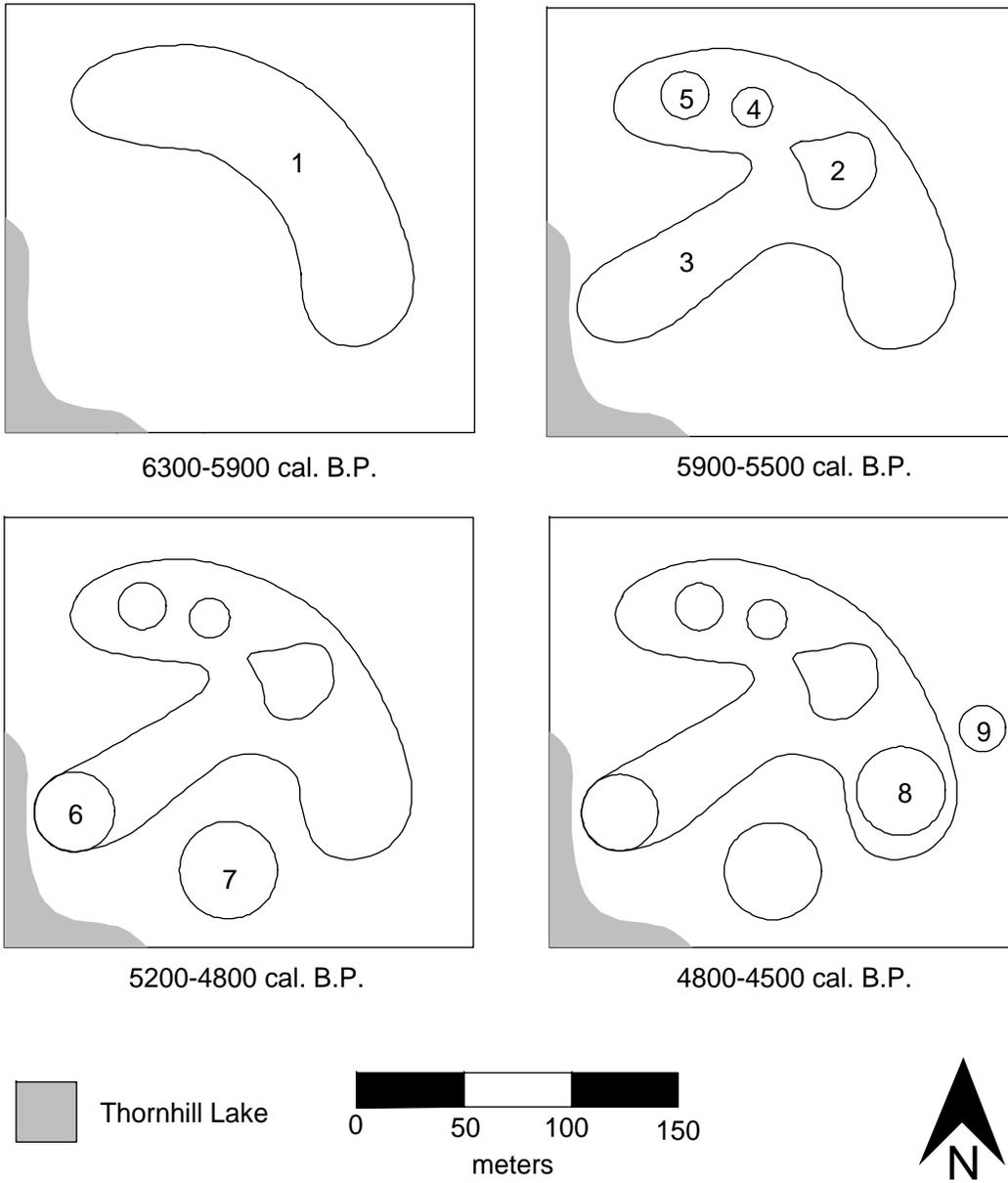


Figure 6-25. Hypothesized developmental sequence for the primary topographic and architectural features at the Thornhill Lake Complex.

CHAPTER 7 THORNHILL LAKE – ARTIFACTS, ACTIVITIES, AND EXCHANGE

A discussion of artifacts recovered from Mount Taylor contexts at the Thornhill Lake Complex is presented in this chapter. The details of the analysis results along with materials recovered from later Orange, St. Johns, and historic period contexts are dealt with in a separate technical report (Endonino n.d.). Analyses emphasized two primary areas: function and raw material provenance. The goal of the functional analysis is to shed some light on the activities occurring at the Thornhill Lake Complex through a consideration of what activities tools were employed in by the sites inhabitants. Provenance data for raw materials was obtained in order to illuminate exchange, interaction, or contact in whatever form with contemporary groups at Thornhill Lake.

Both functional and provenance data bear directly on discerning the context and conditions under which monument construction among Mount Taylor hunter-gatherers arose. Functional data on stone, bone, and shell tools speaks directly to what people were (or were not) doing at the site. In addition, these same data, especially the nature of the procurement and use patterns of stone tools, can also provide insights into the means of tool stone procurement, i.e. direct vs. indirect procurement/exchange. Along similar lines, the provenance data, especially for stone and marine shell, provide valuable data on interactions and connectedness among the inhabitants of peninsular Florida during the TLP of Mount Taylor since these materials are not native to the SJRV. At approximately the same time that materials such as marine shell, chert, and silicified coral began to circulate widely throughout the Florida peninsula and move into the SJRV, so too did exotic stone artifacts from outside of Florida begin to move through

exchange networks and into the hands of TLP peoples. Within this context of intraregional and interregional exchange people also began to build mortuary monuments of sand. The data presented and discussed below demonstrate the interconnectedness of people within the SJRV with the rest of the Florida peninsula while at the same time showing what people were doing at the Thornhill Lake Complex.

Results

Excavations at the Thornhill Lake Complex produced a modest assemblage of lithic, bone, and shell tools from secure Mount Taylor contexts (Table 7-1). Lithic artifacts are by far the most numerous followed by shell tools and debitage. Bone artifacts account for the balance of the recovered artifacts. Despite best efforts to include all Mount Taylor materials for analysis, it is probable that Mount Taylor artifacts from contexts designated as post-Mount Taylor were omitted as the result of the presence of a few post-Mount Taylor artifacts in a give provenience. Nevertheless, the materials analyzed and discussed below come from secure Mount Taylor contexts and represent the recoverable portions of Mount Taylor materiality from the Thornhill Lake Complex.

Lithic Artifacts

Four hundred forty-seven lithic artifacts were recovered from Mount Taylor contexts at Thornhill Lake. The majority of these are lithic waste flakes ($n=418$) with the balance composed of various tool forms, largely bifaces and biface fragments (Table 7-2). Functional aspects of tool use were discerned through examining use-related wear and breakage patterns. These functional data are intended to assist in determination of on-site activities such as game processing, manufacture of bone tools, etc. The lithic raw material provenance information is used to determine aspects of the organization of

lithic technology, specifically lithic raw material acquisition practices. The ultimate goal is to discern the methods through which these materials arrived at the site, i.e. through direct procurement by the sites inhabitants, through exchange with neighboring groups, or some combination of the two. Analysis of the lithic debitage was also conducted with the purpose of gathering data that will shed light on aspects of lithic procurement strategies, on-site activities related to stone tool production and maintenance, and the organization of lithic technology.

Bifaces

Bifaces largely consist of non-diagnostic edge fragments and stems. Complete specimens are also present and consist of typologically identifiable and ambiguous examples (see Table 7-2). A selection of bifaces and biface fragments are shown in Figure 7-1. Overall the functional data for bifaces indicates a fairly straight-forward use for these tools in cutting tasks and as projectiles. Light to moderate cutting activities are indicated by the use wear observed. Occasionally, heavier use was observed and includes extensive rounding and polish in addition to rotary wear suggesting use as a drill. The extensive rounding observed on the blade fragment possibly indicates use on hard materials such as shell, bone, or wood and is the only example of this type of tool function observed. The relatively low edge angles observed on most of the bifaces are consistent with cutting activities with the exception of the UID Biface used as a drill. Lithic conservation strategies such as reworking and biface smashing apparently were not employed regularly at Thornhill Lake and indicates that lithic raw materials and tools were available in sufficient amounts for such conservation strategies not to have been widely employed.

Among the bifaces recovered from Thornhill Lake lithic raw materials consist only of chert and silicified coral (Table 7-3). Chert is only slightly more frequent, making up just over 52% of the bifaces with silicified coral accounting for the remainder. Although a relatively small assemblage, multiple sources of lithic material are represented. Four distinct quarry clusters have been identified: Gainesville, Lake Panasoffkee West, Brooksville, and Upper Withlacoochee River. Two areas within the Upper Withlacoochee River Quarry Cluster are represented. The first is a generic Suwannee Limestone Formation chert that occurs throughout this quarry cluster. The second is more spatially restricted at the northern end within the Green Swamp and Rock Ridge areas and characterized by both Suwannee Limestone and Ocala Limestone formation chert. Although silicified coral can not be accurately sourced based on its fossil content, there are a few areas where this raw material type is particularly abundant. The Upper Withlacoochee River Quarry Cluster is the most prolific source of silicified coral in peninsular Florida, particularly in the areas around Wesley Chapel and Zephyrhills in Pasco County (Upchurch et al. 1982:132). This source is the most proximate to Thornhill Lake. Coral from this quarry cluster is most likely represented within the Thornhill Lake biface assemblage, especially considering that the majority of the chert bifaces come from this source. Taken together, the Upper Withlacoochee River Quarry Cluster was the principal source of lithic raw materials, both chert and silicified coral, for the inhabitants of Thornhill Lake.

Non-bifacial tools

Non-bifacial tools are very few and consist of three microliths, two flake tools, and one utilized flake (Figure 7-2). With regard to function, the non-bifacial tools are variable. The microliths are in all probability intended for drilling, perforating, and

engraving of hard materials given their steep edge angles. Flake tools apparently were used for cutting hard materials. Scraping hard materials is the primary use of the other flake tool judging from the steep edge angle and presence of moderate scalar flaking, step fractures, and edge rounding. The utilized flake appears to have been employed in light scraping activities considering the steepness of its edge angle. Overall the non-bifacial tools appear oriented to a number of scraping, cutting, and possibly drilling and perforating tasks. Microliths in the case of the latter possibly are made and used for a specific purpose such as drilling.

Lithic raw material data for non-bifacial tools are summarized in Table 7-4. Five of the six tools are chert and the other is silicified coral. Materials from three distinct quarry clusters are present: Upper Withlacoochee River, Hillsborough River, and Brooksville. Within the Hillsborough River Quarry Cluster materials, one specimen comes from the Cow House Creek and Harney Flats area of this quarry cluster and is demonstrated by the presence of oogonia, the reproductive apparatus of *charophytes*, a freshwater plant (Upchurch et al. 1982:74). The occurrence of this fossil plant makes this source area highly recognizable. One of the microliths is made of Suwannee Limestone Formation chert from an indeterminate quarry cluster. Likely it is from either the Upper Withlacoochee River or Brooksville quarry clusters. The last specimen is silicified coral and it can not be accurately sourced but, as discussed above for the bifacial tools, it too likely comes from the Upper Withlacoochee River Quarry Cluster in the vicinity of Wesley Chapel and Zephyrhills in Pasco County, Florida. For such a small assemblage the diversity of lithic raw materials is surprising. Upper Withlacoochee River Quarry Cluster chert might be expected to account for the majority

of these tools but only one specimen could be attributed to this source with any certainty. Although less than observed for the bifaces, the non-bifacial tools follow the same pattern of diversity of lithic sources.

Debitage

Thedebitage assemblage from Thornhill Lake overwhelmingly displays characteristics that are associated with biface production and maintenance. Flake forms identified (*sensu* Sullivan and Rozen 1985) are primarily proximal and medial-distal fragments. A general lack of angular shatter and non-orientable fragments further substantiates the attribution of biface production to this assemblage. Additional supporting evidence for the late-stage nature of the waste flakes are the overall small size (individual and average) and low flake weight (individual and average). Moreover, cortical material is generally absent and only present on a small minority of flakes. Striking platforms, when present, are small, isolated, and overwhelmingly display evidence of preparation. These data singly and in aggregate support and confirm the fact that the Thornhill Lake waste flake assemblage is the product of biface production and maintenance.

Lithic raw material data are shown in Table 7-5. Chert and coral are the only lithic raw materials identified among the Thornhill Lakedebitage. By a significant margin (92.59%) chert makes up the largest proportion of the raw materials with silicified coral accounting for the remainder. Four quarry clusters and three sub-clusters are represented in thedebitage assemblage. The Upper Withlacoochee River Quarry Cluster is the most significant source of lithic raw material and includes the Green Swamp area in addition to the Suwannee Limestone derived cherts of this cluster generally. Hillsborough River Quarry Cluster chert is second in abundance, making up

just shy of eight percent of the assemblage. Both generic Hillsborough River chert and chert from the Cowhouse Creek area of this quarry cluster are represented with the latter accounting for only a small amount of the total raw material sources represented. Brooksville or possible Brooksville Quarry Cluster chert accounts for a total of 4.79% of the lithic raw materials from the debitage assemblage. Only a trace of Lake Panasoffkee Quarry East sub-cluster chert is present and makes up the balance of the identifiable quarry clusters observed.

Debitage that could only be sourced to the level of the limestone formation from which they are derived makes up 6.20% of the waste flakes. Ocala Limestone chert from unknown sources is the least frequent at 1.20%. Suwannee Limestone cherts are the most frequent among the materials that could only be sourced to the parent limestone formation. The higher frequency of Suwannee Limestone chert not attributable to a particular quarry cluster ought to be expected considering the high frequency of quarry clusters represented by this material, especially the Upper Withlacoochee River Quarry Cluster. Likely the Suwannee Limestone cherts not attributable to a particular source come from the Upper Withlacoochee River sources, but possibly the Brooksville Quarry Cluster as well. Nearly six percent of the overall debitage assemblage consists of chert that could not be attributed to either a quarry cluster or a parent limestone formation and were classified as indeterminate. Silicified coral accounts for 7.41% of the total debitage assemblage from Thornhill Lake and likely came from the Upper Withlacoochee River Quarry Cluster. Overall, lithic raw material sources represented among the debitage come primarily from sources located in west-central peninsular Florida, principally from sources located within the Upper

Withlacoochee River Quarry Cluster with lesser amounts contributed by the Hillsborough River, Brooksville, and Lake Panasoffkee East quarry clusters.

Other lithics

One other lithic artifact, a coquina stone slab, was recovered from Mount Taylor contexts at Thornhill Lake. This artifact exhibits wear in the form of smoothing and in all probability was used for the production and maintenance of bone and shell tools. No grooves were identified on this specimen but the very smooth nature of the surfaces indicates that it was utilized. Coquina stone outcrops along the Atlantic Coast from Flagler to southern Volusia Counties and is a member of the Anastasia Formation. Given its likely area of origins, this artifact clearly was transported from the Atlantic Coast to Thornhill Lake by humans. Therefore it, as with the other lithics from Thornhill Lake, are “exotic” and potentially the result of exchange.

Lithic Artifact Summary

Based on the foregoing discussion, the Mount Taylor lithic assemblage indicates a suite of activities that are, on the whole, apparently domestic. Analysis of bifacial tools indicate a number of cutting and projectile functions while the non-bifacial tools, consisting of microliths, flake tools, and a utilized flake suggest a range of cutting, scraping, and drilling functions. Emphasis appears to have been on curated tools, primarily bifaces, given the higher frequency of these tools relative to all others. Non-bifacial tools appear to have been curated as well considering the presence of retouch and maintenance on the flake tools and one of the microliths. Further support for the emphasis on curated tool forms is the extreme infrequency of utilized flakes ($n=1$) among the waste flake assemblage ($n=418$). The debitage assemblage indicates that late-stage tool production and maintenance were the primary lithic reduction activities

occurring and is supported by the predominance of flake fragments; the lack of non-orientable fragments, notably angular shatter; low individual and average flake size; low individual and average flake weight; the infrequency of cortex on exterior flake surfaces; and the high frequency of thermal alteration.

A summary of the frequency of lithic sources in the Thornhill Lake assemblage is illustrated in Figure 7-3 and shown in Table 7-6. Lithic sourcing data has shown that chert is the principal lithic raw material type followed distantly by silicified coral. The sources for this chert are primarily those found in west-central Florida, notably the Upper Withlacoochee River, Hillsborough River, and Brooksville quarry clusters. Material from the Lake Panasoffkee and Gainesville quarry clusters account for only a small amount of the total assemblage. The latter represented only among the biface assemblage and may be the best case for materials obtained through exchange considering that only traces, if that, of debitage from these sources has been identified.

An interesting contradiction emerged as a result of this analysis, that a substantial amount of lithic raw material (debitage) would not be utilized at a site in a region devoid of lithic sources. This also stands in marked contrast to the highly curated nature of the tool assemblage, a characteristic that is in conformance with what is expected in a lithic-poor region. Why was this source of potential tools not utilized by the site's inhabitants? One possible explanation is that the overall small size of the debitage did not lend themselves to use as expedient tools, but the microliths belie this. Another possible explanation is that the jobs that *could* have been performed by expedient tools were instead performed by curated bifacial and non-bifacial tools. Still another possible explanation is that there was the perception among the site's inhabitants that lithic

material was not scarce and that raw material for tools or finished tools could be obtained when needed, and thus no need to utilize the raw materials immediately available in the form of waste flakes.

Organization of lithic technology

With regard to the organization of lithic technology at Thornhill Lake, several statements can now be made based on the lithic sourcing, use-wear, and maintenance data produced as a result of this research. First, stone tool technology is geared toward the production and use of bifacial tools, a fact supported by the predominance of bifacial tools and debitage resulting from biface production and maintenance. Non-bifacial tools, patterned and expedient, are rare and confirm the emphasis on bifacial technology.

Second, lithic procurement involved both direct and indirect means, a fact borne out by the foregoing analyses and elaborated in greater detail below. Third, non-bifacial tools were for the most part produced using waste flakes resulting from biface production with the possible exception of one flake tool made of Hillsborough River Quarry Cluster, Cow House Creek area chert which appears to have been part of a curated tool assemblage. Using bifaces as sources for raw material to produce other lithic tools is not uncommon (Kelly 1988).

Fourth, some economizing behaviors were practiced while at the same time “wasting” a significant of lithic material. Economizing behavior is expected in areas where lithic resources are scarce or absent. The SJRV is one such area and it ought to be expected that strategies to conserve lithic material will be employed and indeed they were. This can be seen in the heavy maintenance, use, and reworking of stone tools and tool fragments, and high tool fragmentation (Odell 1996:62-64, 71, 74). However,

the extreme infrequency of expedient tools such as utilized flakes and other tools made from debitage, contradict the notion that hunter-gatherers in stone-poor areas will use up every bit of stone, making the most of what they have (Odell 1996:75-77). One possible reason for this is accessibility to tool stone, either directly during special purpose resource extractive forays or indirectly thorough exchange. Another possibility is that lithic procurement is embedded and occurs during other activities with access coming through the mobility practices of the inhabitants of Thornhill Lake (Binford 1979).

Lastly, lithic technology likely played an important role in the overall organization of Mount Taylor technology in that stone tools enabled the production of items from other media such as bone, shell, and wood. Considering its apparent importance it might be expected that acquiring and having continued access to lithic raw materials would be important. In view of this, it is fair to say that the organization of lithic technology not only concerns the acquisition and use of stone tools (as well as their place in the overall technological repertoire) but also involves social aspects as well. This last point is important with regard to procurement in that both direct procurement and indirect procurement involve contact with other groups of hunter-gatherers, irrespective of whether or not the Thornhill Lake population was moving wholesale between the St. Johns and chert-bearing areas on the interior to the west (a scenario that I strongly doubt) or small numbers of personnel who spend at least part of their time at Thornhill Lake were visiting lithic source areas. In either case contact with neighboring groups would have necessitated some kind of social relations between those wanting chert and those who had it.

Direct procurement

Evidence in support of direct procurement at Thornhill Lake may be seen in the predominance of a single source of lithic material and evidence for on-site production. The abundance of debitage from the Upper Withlacoochee River Quarry Cluster is taken as one line of evidence supporting direct procurement. The fact that the majority of the debitage from this site is late-stage biface production debris indicates that it was arriving either as finished tools or as late-stage preforms. Supporting data for this may be seen in the absence of preforms and production failures made of this material. In a loose sense, the Upper Withlacoochee River Quarry Cluster chert may represent “local” chert in the assemblage with the remaining source areas constituting “non-local” material. In truth, all of the lithic artifacts found at Thornhill Lake and in the SJRV are “non-local” and “exotic” given the total absence of knappable stone in the region. Meltzer (1989:24) notes, “anything less than total use of exotic stone could easily result from either direct or indirect acquisition.” Although sounding very final, it is likely that at least some of the stone at Thornhill Lake as obtained through indirect procurement, specifically raw material sources in the minority, especially those that are heavily represented among the tools and minimally in the debitage assemblage.

Indirect procurement

Indirect procurement is registered at Thornhill Lake largely by the occurrence of low numbers of debitage when compared to bifaces and other tools. The clearest example of this is the occurrence of two Newnan points made from Gainesville Quarry Cluster chert and the absence of debitage from this source. In addition, the Gainesville Quarry Cluster is the most distant raw material source represented in the Thornhill Lake assemblage. Similarly, Hillsborough River Quarry Cluster chert is represented among

the non-bifacial tools and minimally among the debitage even more so than the silicified coral discussed below.

Perhaps the strongest evidence for indirect procurement can be seen in the relative proportions of bifaces to debitage for silicified coral. Silicified coral, frequent at other Mount Taylor sites such as LMOM (ACI/Janus 2001; Endonino 2002, 2007b) is not very abundant at the Thornhill Lake Complex. An interesting divergence is noted between the frequency of silicified coral in the biface and debitage assemblages respectively. Silicified coral makes up 47.82% of the biface assemblage but only 7.40% of the debitage assemblage. Such a disparity in the representation of this material in these assemblages is striking and it might be expected that if silicified coral constituted such a large proportion of the biface assemblage that it would be similarly represented among the debitage. The bifaces and debitage from LMOM are informative and illustrate well this point. Silicified coral accounts for 38.88% of the bifaces and 51.99% of the debitage at LMOM. The prominence of silicified coral in the biface assemblage is reflected in its dominance of the debitage assemblage. The opposite is true for Thornhill Lake where silicified coral is in the majority among the bifaces and in the minority among the debitage. It is clear that silicified coral was arriving at Thornhill Lake as finished or nearly finished tools based on the general lack of debitage and production failures and nearly complete but broken tools.

Now that it has been determined that silicified coral was arriving at Thornhill Lake as finished tools, the means for their acquisition may be assessed. Sourcing has shown that the majority of the lithic materials from Thornhill Lake originate in the Upper Withlacoochee River Quarry Cluster, accounting for 63.82% of the total site

assemblage. Considering that both chert and coral occur within the Upper Withlacoochee River Quarry Cluster it might be expected that both would occur with near equal frequency. The fact that silicified coral is not as well represented in the total site assemblage, less than 10%, is interpreted here to indicate that it was not obtained through direct means as indicated by the chert from this same quarry cluster.

Possibly silicified coral was a lithic resource that was controlled by local hunter-gatherer populations, restricting access to outsiders. Further, it is possible, if not probable, that silicified coral was a preferred material for exchange given its aesthetically appealing characteristics such as colorfulness, patterning of the coral polyps in the stone, high luster when properly thermally altered, and its homogenous matrix facilitating flaking (i.e. few fossil inclusions). It was not until Mount Taylor times that this material was used to any great extent by prehistoric hunter-gatherers and coincides with the rise of thermal alteration (Ste. Claire 1987). Silicified coral can be difficult to knap without thermally altering it. After the Late Archaic the use of this resource decreases greatly as does the use of thermal alteration in biface production (Ste. Claire 1987). Interestingly, it is during the preceramic Middle Archaic, contemporary with Mount Taylor, that biface production reaches proportions that seem to be above that necessary for the immediate needs of the group. I suspect that much of this overproduction is related to production for exchange. As an example, a large cache of Newnan and Marion points from the Coontie Island site (8SJ13) was found in association with bannerstones and ground stone beads in what may have been a votive cache or stored exchange items. Some of the Newnan points were on the order of ten inches to a foot in length and many were quite large generally. The vast majority of

these items are made of silicified coral, a fact conveyed to me by the current owner of the collection who wishes to remain anonymous. In all probability these items were produced for exchange, evidenced by their large size overall (hypertrophic), fineness of workmanship, and co-occurrence with other non-local exchange items from well to the north and perhaps west of Florida, coming from Georgia, Mississippi, or Louisiana. Newnan and Newnan-like points have been identified at a lapidary production sites in Mississippi, the Slate site, and are made from what is possibly silicified coral or other Florida materials (Brookes 1999:88-89), confirming their use as exchange items. Considering the discussions above, it appears reasonable much of the lithic raw materials from the Thornhill Lake site were obtained through exchange, notably the chert from sources other than the Upper Withlacoochee River Quarry Cluster and silicified coral despite the spectre of equifinality (Meltzer 1989:26-27).

As a final note, the probability that lithics other than Upper Withlacoochee River Quarry Cluster chert were obtained through indirect means is strengthened when the larger issue of exchange during Mount Taylor times is considered. Exchange networks were in place and moving materials from the interior south southward and vice versa with marine shell making its way from the Gulf and Atlantic coasts to shell mounds of the interior south in Kentucky, Tennessee, and Alabama (Goad 1980; Jefferies 1996). Additionally, lithic artifacts were also being produced and exchanged, serving both social and functional needs (Johnson and Brookes 1989; Meeks 1999). Materials were moving into peninsular Florida from areas outside of the state (groundstone beads and bannerstones) as well as within, from the coast to the interior (shark teeth and marine shell). Considering that materials from disparate locations were simultaneously

traveling through the peninsula in exchange networks it is unlikely that lithic materials would be exempt and, more to the point, the movement of lithic materials from source areas into an area completely deprived of stone seems more reasonable.

Bone Artifacts

Bone artifacts recovered from the Thornhill Lake Complex consist of tools, items of personal adornment, production debris, and a UID specimen (Figure 7-4, Table 7-7). By far pin/point fragments make up the majority of the specimens recovered, accounting for more than 67% of the total bone tool assemblage. Next in frequency are shark teeth. Items of personal adornment consist of three items, two bone beads (one made from bird bone and the other from deer) and one possible ear spool. Only two bone pin fragments, both medial segments, were recovered and identified as pins based on their extreme polish and completely rounded cross-section. Two production debris consisting of the scored and snapped proximal ends of deer long bones were also recovered. One antler tine, apparently used as a pressure flaker, represents the only item used in lithic reduction found at Thornhill Lake. Finally, one UID bone item, possibly a tool, was recovered.

With few exceptions, white tail deer (*Odocoileus virginianus*) is the primary raw material used in the production of bone artifacts from Mount Taylor contexts at Thornhill Lake. One specimen is only identifiable as *Mammalia* and two as *Aves*. Shark teeth are all *Carcharhinus leucas*. One specimen is UID with regard to raw material species. Finally, the possible ear spool is made from the vertebra of a dolphin.

Bone artifacts from Thornhill Lake largely consist of pin/point fragments, generally medial and distal fragments, and none are complete. Functionally, most of these specimens are ambiguous due to the effects of post-depositional factors on use-related

wear exhibited on tool surfaces. What use-wear is present consists largely of striations on the tool surface and at the distal end. These striations, and all use-related wear are, when present, very minor. Other wear traces such as chipping and blunting also occur at the distal end of these artifacts. Polish was visible on 42% of the bone pins/points, including those that are indeterminate for use-wear. Evidence for use as projectiles in the form of impact induced fracturing is relatively uncommon and it appears that these items generally were not used as hunting implements.

Considering the overall light use of these tools judged by the use-wear data and an emphasis on the distal ends, in combination with the high incidence of polish, suggests that the majority of these pins/points were used as clothing fasteners or hair pins. Wheeler and McGhee (1994a) observed similar wear patterns among what they termed "pins/fasteners," concluding that they were used to fasten clothing and as hair pins. The authors noted that these artifacts possess polish and light wear traces at the distal ends (Wheeler and McGhee 1994a:354). Interestingly none of the specimens recovered are decorated or possess the elaborate proximal ends (when present) that have been observed at such sites and Harris Creek/Tick Island and LMOM (ACI/Janus 2001). It is reasonable to expect to see decoration on at least a portion of the bone pins/points if they were used for clothing fasteners and hair pins, especially in view of the fact that they have been recovered from other sites. The fact that only one proximal end fragment was recovered among the pins/points may be skewing the results as the lack of decoration may simply be a result of the underrepresentation of proximal fragments in the assemblage.

Shark teeth are generally few and do not possess much in the way of use-related wear. Only the two specimens with perforations show any signs of wear. The perforations are presumably for hafting for use as a tool. The minor wear could be the result of use on soft materials. Possibly they were items of personal adornment in view of the fact that one burial from Mound A had a double perforated tiger shark tooth among the beads and bannerstones recovered in association with it (Moore 1894d).

Both of the beads were recovered from Mound B. The beads are of two different sorts. One bead (FS/Cat.#79.02) was recovered from a sand stratum that has been interpreted as a Mount Taylor period mound-building episode. This specimen appears to have been made from a section of the shaft of a deer long bone. Only about half of the bead was recovered and appears to have been fractured prehistorically. A high polish is present on the exterior surface and striations indicative of drilling are visible on the interior. The second of the two bone beads (FS/Cat.#88.02) was recovered from the shell platform that Mound B is built upon. Bird bone was used to produce this specimen judging from very thin walls of this bead. Although recovered intact, this specimen fragmented subsequent to excavation and was restored. In form, it is barrel shaped. Since it was made from bird bone this bead did not have to be drilled. However, facets are visible on this artifact indicating that it was ground and shaped, primarily around the ends. Beads similar to those recovered from Mount Taylor period contexts at Thornhill Lake were also recovered from Mount Taylor period contexts at Groves' Orange Midden (Wheeler and McGhee 1994a). The Thornhill Lake and Groves' Orange Midden specimens share similarities in the materials selected and the techniques used for their production. The bird bone beads from Groves' Orange

Midden were made by cutting and snapping. Contrasting with the Thornhill Lake bird bone bead, many of the Groves' Orange Midden specimens had their snapped ends left ragged and unsmoothed (Wheeler and McGhee 1994a).

An ear spool (FS/Cat.#241.03) made from a dolphin vertebra was recovered from the Orange Grove locus east of Mound B from shell-free midden deposits.

Morphologically this artifact is dumbbell-shaped, a form achieved through breaking off the lateral and dorsal projections and circumferentially grinding the lateral edge. One end is smaller than the opposite, presumably this is the end inserted through the ear. Some minor breakage has occurred at various locations on this artifact. To my knowledge this is the only example of this kind of artifact found within the SJRV.

What is striking about the bone tool assemblage from Thornhill Lake is the lack in diversity, notably functional diversity, among these artifacts, diverging from what has been observed at LMOM and Grove's Orange Midden, both of which are located on the shores of Lake Monroe to the north of Thornhill Lake. The diversity of forms observed at Groves' Orange Midden bespeaks a suite of domestic activities based on the functional analysis of the bone tools from that site, and include textile production, personal adornment, and hunting/fishing (Wheeler and McGhee 1994a). Although possibly manufactured at Thornhill Lake judging from the limited occurrence of production debris, these tools do not appear to have witnessed much functional activity. Possible explanations for this are that the tools are production failures and were never used, they all were lost before they could be used, they were made at Thornhill Lake and taken elsewhere for use or, as suggested by Wheeler and McGhee (1994a), these specimens functioned as fasteners for clothing and as hair pins.

Shell Artifacts

Shell artifacts are common from Thornhill Lake and include tools, items of personal adornment, and debitage. These items are summarized in Table 7-8. Shell “debitage” is by far the most abundant category and, as defined here, refers to small fragments of marine shell that are not parts of tools or items personal adornment. Tools make up the second largest group within the marine shell artifacts and include a number of forms (Table 7-9). Lastly, items of personal adornment make up the smallest portion of the shell artifact assemblage and consist of three beads and a pendant.

Shell artifacts from the Thornhill Lake Complex on the whole produced little in the way of functional information. Part of this is due to the relatively few tools recovered along with the heavy damage and breakage observed and much of what functional data could be recovered was limited to only a few tools, notably adzes and adze/gouges. Among these artifacts woodworking is apparently the principal functional activity occurring, possibly the production of canoes or other wooden artifacts such as mortars, bowls, etc. Other tools with yielding functional data indicate that hammering and pounding activities also were occurring and the exact nature of these is uncertain. At least one *Busycon spp.* vessel is reported and the remaining tools are ambiguous as to function.

Items of personal adornment account for the smallest of the categories within the shell tool group and consist of three shell beads, two made of marine shell and the other possibly made from freshwater mussel, the latter indicated by its iridescence. Burning was noted on the two marine shell specimens and possibly is the result of post-depositional thermal exposure, possibly during the formation of tabular concreted lenses within TU-L where all three of the beads were recovered. The last item of personal

adornment is shell pendant that is in very good repair except for a single fracture on one suspension hole. An interesting aspect of these items is their spatial distribution within the site, occurring only in the vicinity of the mounds (on the East Ridge between Mounds A and B in the case of the beads) or underneath the location of the mounds (in the case of the pendant found in the shell platform underlying Mound B). This restricted spatial distribution is interpreted to be a reflection of the specificity of certain spatial practices, specifically those related to mortuary ritual and practice. As noted above, the beads, which were found on the East Ridge between Mounds A and B, are found in mortuary contexts in both of the mounds. That they are found in between these two monuments speaks to their association with them and the activities occurring there. In a similar fashion, one of the bone beads found was recovered from within a sand stratum composing Mound B and the other with the shell platform it is built upon. It appears, then, that the spatial distribution of these items across the site is not coincidence or an accident, but instead reflects specific spatial practices, perhaps related to mortuary ritual.

The shell debitage, composed largely of *Busycon* fragments, appear to implicate tool production and maintenance activities (Table 7-10). The *Dinocardium* spp. shell on the other hand is not very clear regarding its functional attributes. Possibly it was used as some sort of scoop or container of some kind, albeit a very small one. The same may also be true for the *Mercenaria* shell as well. These latter two are, at best, uncertain regarding function. However, rather than representing functional tool categories, these items may represent items that underwrote exchange relationships rather than representing a functional tool class or classes.

Lastly, the presence of marine shell further indicates that exchange to one degree or another is responsible for at least some of the shell materials recovered from the Thornhill Lake Complex. It is one of a number of non-local artifacts that have been found at Thornhill Lake, all of which speak to the importance of exchange among Mount Taylor period hunter gathers, particularly during the TLP. This point is taken up and given greater discussion below.

Discussion

Behavioral Implications

Analysis of material culture from Mount Taylor contexts across the Thornhill Lake Complex has provided information related to the behaviors occurring there, indicated both by the functional analysis of the stone, bone, and shell artifacts recovered from this site presented above, as well as the provenance of the materials used to produce them. With regard to function, lithic tools are primarily geared toward cutting, slicing, and projectile functions. Other lithic tool types are largely performed scraping and perforating functions. Frequent stem fragments from bifaces indicate retooling and maintenance activities as well. The near total absence of utilized flakes is interesting considering the common occurrence of waste flakes in Mount Taylor contexts. It might be expected that in an area devoid of lithic resources that there would be a high incidence of utilization among the waste flakes. Certainly many of them are of a size suitable for use. One possibility for the lack of utilization of waste flakes is that there was an emphasis on the use of bifaces for multiple tasks including those that would be carried out with utilized flakes in other regions of the Florida peninsula. Another possibility is that there was a perception among the inhabitants of Thornhill Lake that stone was not in short supply and that when needed it could be obtained. Therefore the

conservation strategies that might be expected in an area devoid of stone are not manifest. Absence of production failures indicates that production on site was minimal and consisted of late stage activities. The debitage assemblage indicates maintenance and late stage production activities. Overall the lithic assemblage is geared toward the maintenance of bifaces and the completion of nearly-finished preforms used in day-to-day activities, while, at the same time, representing something more in terms of social relations, specifically exchange and interaction with neighboring groups.

Bone tools from Thornhill Lake are as a group relatively homogenous in terms of the tool fragments represented, most being medial and distal fragments. Functionally they are on the whole rather ambiguous, possessing little in the way of wear traces and those that are present are on the whole minimal and somewhat non-descript, consisting largely of striations with the minor occurrence of chipping and blunting. Polish is present on 42% of the bone pins and pin/points recovered. The light wear, high incidences of polish, and location of wear primarily at the distal end seems to indicate that these items are largely what Wheeler and McGhee (1994a) called pins/fasteners which were used to fasten clothing and functioned as hair pins as well. None of the bone tools from Thornhill Lake are suggestive of textile working and only one or two specimens appear to possibly have been used as projectiles. As a group, they possibly may be better classified as items of personal adornment. This is a departure from functions expected at a habitation site where bone tools would be involved in resource procurement (hunting/fishing) and domestic production (textiles, netting, matting).

Shell artifacts functionally appear to be largely related to wood working as indicated by the presence of adzes and adze/gouge fragments, possibly cooking or food

transfer as indicated by the dipper, and other non-descript hammering and battering activities indicated by the hafted *Busycon* tools. Overwhelmingly the shell artifacts recovered consisted of a number of what have been termed here “debitage,” largely fragments of *Busycon*, *Dinocardium*, and *Mercenaria* species shells. The *Dinocardium* and *Mercenaria* shells possibly were used as very small containers or as scoops or some other tool to transfer liquids or solids from one container to another. No evidence for this was observed on any of the fragments. Only the *Busycon* spp. shell fragments possibly represent shell tool maintenance or production debris. The functional ambiguity and uncertainty for the majority of the shell from Thornhill Lake may be due to the fact that it was not intended to be functional at all but was one of a host of items moving through exchange networks.

Exchange and Interaction

In addition to shedding light on the apparent quotidian behaviors of Mount Taylor hunter-gatherers, the sources of the raw materials used to produce stone, shell, and shark tooth tools provides additional social information, particularly related to exchange and social interaction. A broad geographic area is represented by the raw materials recovered from the Thornhill Lake Complex. The Atlantic and Gulf coasts, the interior uplands west and southwest of the SJVR, and areas to the north in the Gainesville and Ocala areas, are indicated by the presence of artifacts manufactured from raw materials originating in these areas. The coasts are implicated by the presence of marine shell in the form of tools and debitage as well as shark teeth and the interior uplands to the west, southwest, and north by chert from several quarry clusters ranging from as far north as Gainesville down to the Tampa Bay area. By virtue of its proximity to the St. Johns, it is likely that most of the shell and shark teeth found at Thornhill Lake come

from the Atlantic although the Gulf coast can not be ruled out considering the presence of lithic materials coming from the Tampa Bay area. At least one type of shell, *Strombus gigas*, has a range that places its origins firmly along the southeast coast of Florida (Morris 1975:168), and thus represents a more distant source for this raw material relative to all other shell found at Thornhill Lake.

A diversity of lithic resources in a given assemblage can be interpreted as a measure of the group mobility, reflecting the geographic area traversed (Binford 1979). While this may be true for pioneer populations such as the Paleoindians or hunter-gatherers in sparsely populated regions of the globe such as the arctic, it may not apply to more temperate regions with local histories spanning several millennia since the founding populations arrived. This perspective does not consider the presence of other groups of people. At the very least permission would need to be obtained before collecting resources from another's territory. If we were to accept that the geographic range represented by the non-local artifacts at Thornhill Lake were a measure of their mobility and band range, this range would extend from the area around Gainesville to the Florida Keys and include both the Atlantic and Gulf coasts and all of the chert-bearing regions of interior peninsular Florida – a very large piece of geography to traverse – and one inhabited by numerous other groups of hunter-gatherers.

Contributing to the unlikelihood of these resources being procured directly through mobility is the general trend of reduced mobility noted throughout the southeastern U.S. during the Middle and Late Archaic (Amick and Carr 1996:44; Sassaman et al. 1988). Increasing populations lead to demographic packing, territoriality, and reduced mobility (Walthall 1980:58). Reduced mobility resulted in band territories becoming smaller and

more tightly packed, leading to a tendency to reoccupy the same sites more frequently and/or for longer periods of time (Steponaitis 1986:372). Considering the reduction in mobility and band ranges for Middle and Late Archaic hunter-gatherers in the southeast generally, and those in peninsular Florida in particular, the argument can be made that Mount Taylor period hunter-gatherers were not ranging widely across the Florida peninsula. Rather, Mount Taylor groups likely occupied lands along the St. Johns River as well as adjacent uplands immediately to the east and west. With this in mind, the non-local items that found their way into Mount Taylor sites in the SJRV are, in large part, the result of exchange networks that developed during this period and, at least in part, mobility of individuals or small groups of the larger Mount Taylor population moving between the SJRV, Atlantic Coast, and interior uplands west of the SJRV may also have contributed some items.

Artifacts of exotic non-local materials are expected items moving through exchange networks, but other ordinary, seemingly every-day items also move through them and, although mundane on the face of things, actually convey much information and carry symbolic significance. According to Patton (1994:181), artifacts have an inherent and embedded social value. The true value of the exchange artifacts lies not in the artifacts themselves, but in the social messages they help to communicate, particularly among hunting and gathering societies who during times of stress rely on these wide social ties for long-term survival (Patton 1994:181-182). In addition, they also transmit an extensive amount of social knowledge such as ownership rights and creation myths, at least in the case of the Australian Aborigines (Patton 1994:182). The occurrence of apparently utilitarian artifacts such as stone tools and shell artifacts at

Thornhill Lake not only indicate the activities they performed, but also their role in the social interaction of Mount Taylor hunter-gatherers and their neighbors. Ordinary goods, in their appearance and physical composition, recalled to their possessors and observers the larger-scale social links which the inhabitants maintained with their neighbors, fostering social ties (Smith 1999:130).

Exchange networks that moved both ordinary utilitarian goods as well as exotic items such as bannerstones and stone beads from outside the Florida peninsula, tied together hunter-gatherer groups within the Florida peninsula to each other as well as to other contemporary hunter-gatherer groups in Georgia, South Carolina, and Mississippi, sources for the bannerstones and beads found in the burials in Mounds A and B. Certainly obtaining tool stone, shell, and shark teeth were important to everyday tasks in physically reproducing Mount Taylor culture. However, they also serve in socially reproducing Mount Taylor society as well and thus exchange and the materials traveling through these networks were important if not indispensable part of Mount Taylor sociality.

Conclusions

Coming to some understanding of the on-site activities occurring at the Thornhill Lake Complex has been the primary goal of this chapter. In addition, insights into the nature of the organization of lithic technology, mobility, and exchange and interaction have also been possible. Based on the above analyses it appears on the face of things that the activities implicated by the functional analysis of stone, bone, and shell tools are relatively domestic and quotidian. However, a closer examination revealed that the on the whole there is a lack of diversity among the bone and shell tools, revealing an

extremely limited range of activities where shell tools are largely deployed in woodworking activities and bone tools are largely used as fasteners or hair pins.

Lithic artifacts appear to have the greatest functional variability of the Mount Taylor materials recovered, but there are contradictions between what might be expected in a lithic assemblage in a region bereft of tool stone, notably the exceedingly rare use of debitage as expedient tools or, at the very least, in activities that would leave clear signs of wear on these flakes. From a functional and lithic raw material conservation perspective, a huge amount of usable stone was wasted. Contrast this with the high incidence of tool breakage and maintenance, behaviors that are expected in lithic poor regions and it becomes clear that there is a mixed strategy of raw material use. One possibility is that a very significant source of usable lithics (waste flakes) was allowed to fall out of the lithic technological system in order to perpetuate a cycle of exchange involving lithic materials that underwrote and facilitated contact with neighboring groups of hunter-gatherers. Wasting lithics was a behavioral strategy that served to suppress the devaluation of lithic materials and thereby preserve the importance of the media being exchanged. With all of this in mind it is now possible to state that exchange was responsible for the bringing in of many of the non-local items into the site and the SJRV. Some of them also likely were the product of movement of personnel between the SJRV and neighboring areas, but not the wholesale movement of populations between regions for the reasons discussed above with regard to reduced mobility and territorial circumscription that occurred throughout the southeastern United States during the Middle and Late Archaic.

On the whole it does not appear that the activities indicated by the artifacts analyzed from Mount Taylor contexts at Thornhill Lake are consisted solely with a habitation site. The narrow range of functional activities suggested is more in line with a short-term camp site and than with a long-term base camp or village. These data seem to suggest that the function of Thornhill Lake was something other than a habitation site with mortuary facilities – it is a mortuary facility with a limited range of domestic activities associated with mortuary related ritual.

Table 7-1. Artifact frequency and percent by class from the Thornhill Lake Complex.

	Count	Pct.
Lithic	447	80.25
Bone	46	8.26
Shell	64	11.49
Total	557	100

Table 7-2. Counts and percentages for bifacial and other tools from the Thornhill Lake Complex.

	Count	Pct.	Pct. Total
Bifaces			
Complete			
Newnan	2	8.70	6.89
Marion	1	4.35	3.45
UID Stemmed	2	8.67	6.89
Proximal fragment			
Putnam	1	4.35	3.45
blade fragment			
Newnan	1	4.35	3.45
UID	1	4.35	3.45
distal fragment	1	4.35	3.45
edge fragment	6	26.08	20.69
stem	8	34.80	27.59
Total Bifaces	23	100	79.31
Other Tools			
Microlith	3	50.00	10.35
flake tool	2	33.33	6.89
utilized flake	1	16.66	3.45
Total Other Tools	6	100	20.69
Grand Total	29		100

Table 7-3. Lithic raw material source data for bifaces from the Thornhill Lake Complex.

Quarry Cluster	Count	Pct.
Gainesville	2	8.71
Lake Panasoffkee West	3	13.04
Upper Withlacoochee River	3	13.04
Upper Withlacoochee River, Green Swamp area	1	4.35
Brooksville	3	13.04
Silicified Coral	11	47.82
Total	23	100

Table 7-4. Lithic raw material summary data for non-bifacial tools from the Thornhill Lake Complex.

Site #	FS/Cat.#	Type	Material	Quarry Cluster	TA
8VO60	51.01-1	microlith	Chert	Suwannee Formation	No
8VO59	82.01-3	microlith	Sil. Coral	Indeterminate	Indet.
8VO60	267.09	microlith	Chert	Hillsborough River	Yes
8VO60	128.01-1	flake tool	Chert	Brooksville	Yes
8VO60	246.02	flake tool	Chert	Hillsborough River, Cowhouse Creek area	Yes
8VO60	267.10	utilized flake	Chert	Upper Withlacoochee	Yes

Table 7-5. Lithic debitage raw material summary data for the Thornhill Lake Complex.

Quarry Cluster	Count	Pct.
Lake Panasoffkee East	1	0.24
Upper Withlacoochee River	257	61.48
Upper Withlacoochee River, Green Swamp area	25	6.00
Brooksville	19	4.55
Possible Brooksville	1	0.24
Hillsborough River	30	7.18
Hillsborough River, Cow House Creek area	3	0.72
Ocala Limestone Formation	5	1.20
Suwannee Limestone Formation	21	5.00
Indeterminate Chert	25	5.98
Silicified Coral	31	7.41
Total	418	100

Table 7-6. Summary lithic source data for bifaces, other tools, and debitage from the Thornhill Lake Complex.

Quarry Cluster	Bifaces		Other Tools		Debitage		Total	
	Count	Pct.	Count	Pct.	Count	Pct.	Count	Pct.
Gainesville	2	8.71	0	0	0	0.00	2	0.44
Lake Panasoffkee East	0	0.00	0	0	1	0.24	1	0.22
Lake Panasoffkee West	3	13.04	0	0	0	0.00	3	0.67
Upper Withlacoochee River	3	13.04	1	16.67	257	61.48	261	58.4
Upper Withlacoochee River, Green Swamp area	1	4.35	0	0	25	6.00	26	5.82
Brooksville	3	13.04	1	16.67	19	4.55	23	5.15
Possible Brooksville	0	0.00	0	0	1	0.24	1	0.22
Hillsborough River	0	0.00	1	16.67	30	7.18	31	6.94
Hillsborough River, Cow House Creek Area	0	0.00	1	16.67	3	0.72	4	0.9
Ocala Limestone Formation	0	0.00	0	0	5	1.20	5	1.12
Suwannee Limestone Form.	0	0.00	1	16.67	21	5.00	22	4.92
Indeterminate Chert	0	0.00	0	0	25	5.98	25	5.59
Silicified Coral	11	47.82	1	16.67	31	7.41	43	9.61
Total	23	100	6	100	418	100	447	100

Table 7-7. Counts and percentages for bone tool types from the Thornhill Lake Complex.

	Count	Pct.	Pct. Total
Pin			
medial fragment	2	100	4.35
Pin Total	2	100	4.35
Pin/Point			
distal fragment	14	45.17	30.45
medial fragment	15	48.39	32.62
proximal fragment	1	3.22	2.17
possible	1	3.22	2.17
Pin/Point Total	31	100	67.41
Shark Teeth			
drilled, complete	1	16.67	2.17
drilled, fragment	1	16.67	2.17
not utilized, complete	1	16.67	2.17
not utilized, fragment	3	50.00	6.52
Shark Teeth Total	6	100	13.03
Personal Adornment			
bead, complete	1	33.33	2.17
bead, fragment	1	33.33	2.17
earspool	1	33.33	2.17
Personal Adornment Total	3	100	6.51
Antler Flaker	1	1	2.17
Antler Flake Total	1	100	2.17
Production debris	2	100	4.35
Production Debris Total	2	100	4.35
UID	1	100	2.17
UID Total	1	100	2.17
Grand Total	46		100

Table 7-8. Counts and percentages for shell artifacts by type from the Thornhill Lake Complex.

	Count	Pct.	Pct. Total
Tools			
adze	2	25.00	3.17
gouge/adze	2	25.00	3.17
<i>Busycon</i> dipper	1	12.50	1.59
<i>Busycon</i> hammer	1	12.50	1.59
hafted <i>Busycon</i> tool	1	12.50	1.59
<i>Busycon</i> fragment	1	12.50	1.59
Tools Total	8	100	12.70
Personal Adornment			
bead	3	75.00	4.76
pendant	1	25.00	1.59
Personal Adorn. Total	4	100	6.35
Debitage			
Debitage Total	51	100	80.95
Grand Total	63		100

Table 7-9. Summary raw material data for shell tools from the Thornhill Lake Complex.

Site	FS/Cat.#	Type	Species
8VO60	23.05-2	Adze	<i>Strombus gigas</i>
8VO60	54.05-1	Adze	<i>Busycon</i> spp.
8VO60	121.03	<i>Busycon</i> Frag.	<i>Busycon contrar.</i>
8VO60	22.02-1	<i>Busycon</i> Adze/Gogue, distal	<i>Busycon</i> spp.
8VO60	19.01-2	<i>Busycon</i> Adze/Gogue, prox.	<i>Busycon</i> spp.
8VO60	285.04	<i>Busycon</i> dipper	<i>Busycon contrar.</i>
8VO60	299.07	Hafted <i>Busycon</i> tool	<i>Busycon carica</i>
8VO60	51.02	<i>Busycon</i> Hammer	<i>Busycon carica</i>

Table 7-10. Summary shell debitage data for the Thornhill Lake Complex.

Species	Common Name	count	pct.	weight	pct.
<i>Anadara chemnitzii</i>	Chemnitz's Ark	1	1.96	2.20	0.5
Ark spp.	Indeterminate	2	3.92	8.90	2.03
<i>Busycon</i> spp.	Whelk	19	37.26	163.90	37.34
<i>Dinocardium</i> spp.	Cockle	19	37.26	91.20	20.78
<i>Mercenaria</i> spp.	Quahog	7	13.72	170.60	38.87
Indet.	Indeterminate	1	1.96	0.10	0.02
UID	Indeterminate	2	3.92	2.00	0.46
Total		51	100	438.90	100

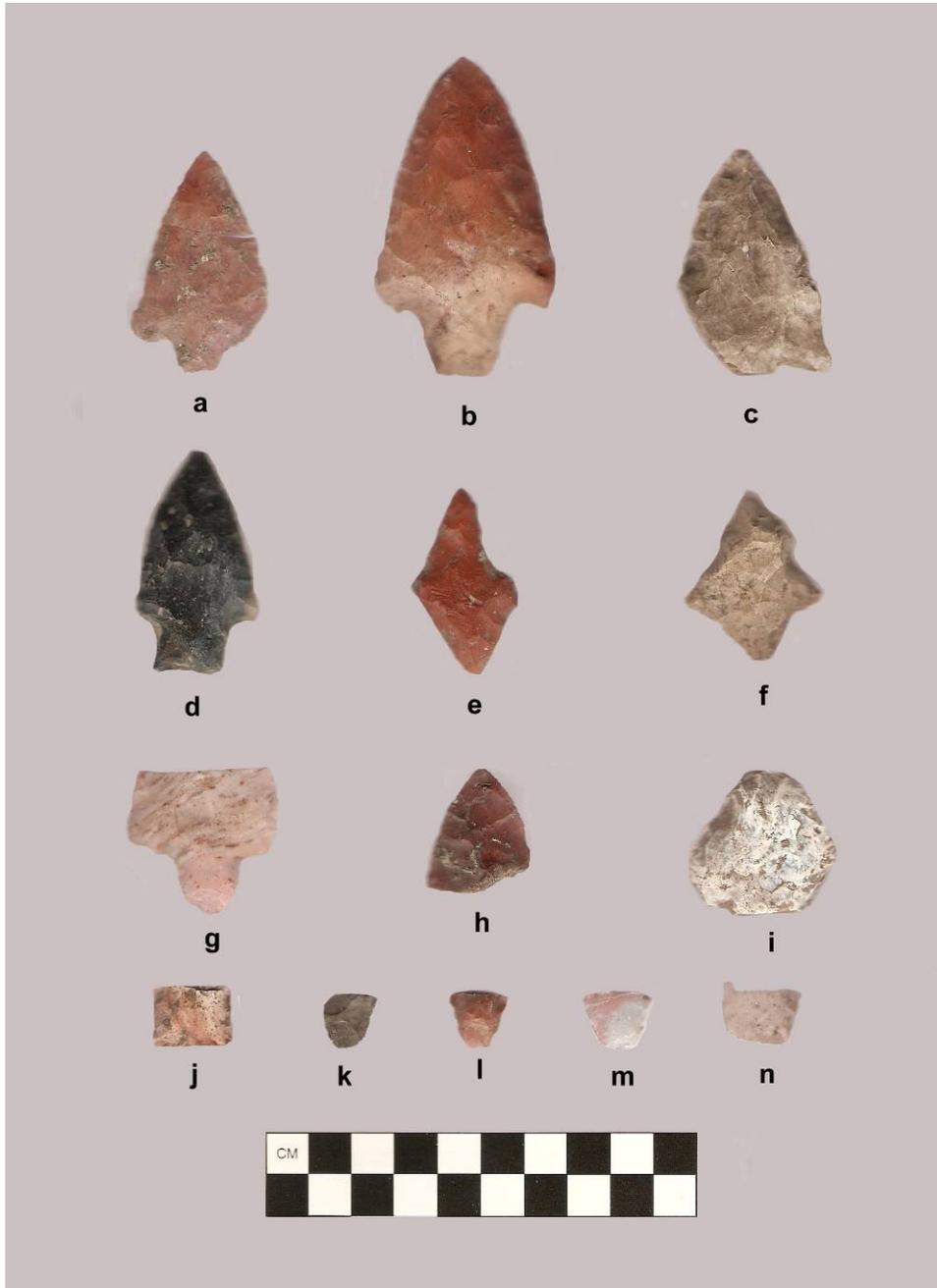


Figure 7-1. Selected bifaces from Mount Taylor contexts at the Thornhill Lake Complex: a, Newnan point (FS151.01-3); b, Newnan point (FS174.02); c, Newnan point (FS264.01); d, Marion point (FS23.03-1), e, UID stemmed biface (FS94.01-2); f, UID stemmed biface (FS128.01-2); g, Putman point base (FS91.01); h, distal biface fragment (FS151.01-2); i, biface blade fragment (FS270.01); j-n biface stems (j, FS235.02; k, FS130.01-2; l, FS79.01-2; m, FS148.01-1; n, FS54.04-1).



Figure 7-2. Other lithic tools from Mount Taylor contexts at the Thornhill Lake Complex: a, flake tool (FS128.01-3); b, flake tool (FS246.02); c, microlith (FS82.01-3), d, microlith (FS51.01-1); e, microlith (FS267.09); f, utilized flake fragment (FS267.10).

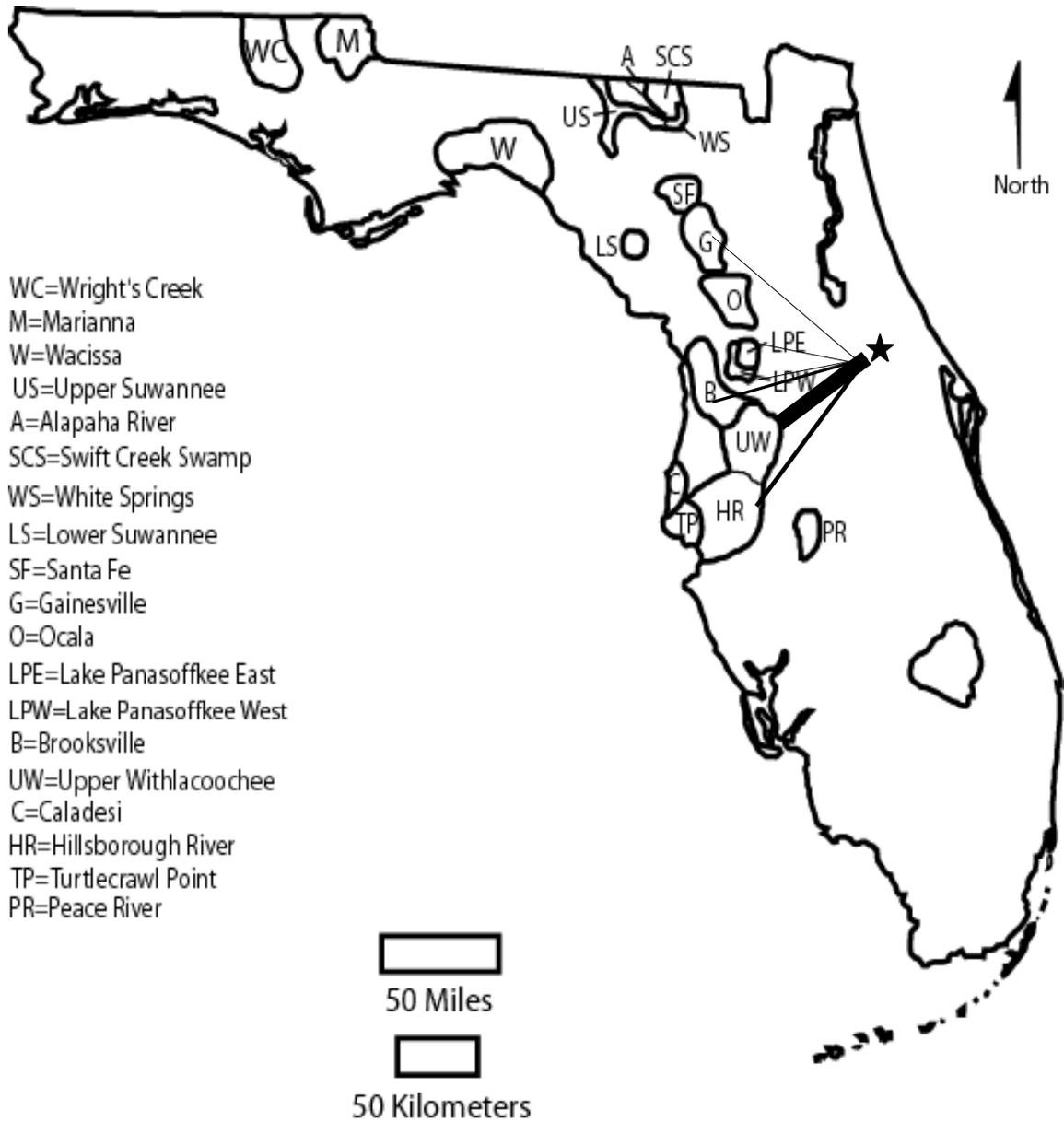


Figure 7-3. Thornhill Lake and relative abundance of lithic materials from contributing quarry clusters.



Figure 7-4. Selected bone artifacts from Mount Taylor contexts at the Thornhill Lake Complex: a, antler tine pressure flaker (FS168.02); b, large pin/point fragment (FS80.02); c, distal pin/point fragment (FS146.02); d, distal pin/point fragment (FS233.03); e, medial bone pin fragment (FS253.03); f, distal pin/point fragment (FS244.02); g, distal pin/point fragment (FS24.02); h, dolphin vertebra ear spool (FS241.03); i, shark tooth (FS79.03); j, shark tooth (FS130.05); k, perforated shark tooth (FS269.02); l, bird bone bead (FS88.02); m, bone bead (FS79.02).



Figure 7-5. Selected shell artifacts from Mount Taylor contexts from the Thornhill Lake Complex: a, *Strombus gigas* adze (FS23.05-2); b, *Busycon* spp. adze/gouge distal fragment (FS22.02-1); c, *Busycon* spp. adze/gouge proximal fragment (FS19.01-2); d, *Busycon* spp. adze (FS54.04-1); e, shell pendant (FS94.03); f, marine shell beads (FS272.02); g, marine shell bead (FS271.03).

CHAPTER 8 MONUMENTS AND MEMORY IN THE ST. JOHNS RIVER VALLEY

The context within which TLP mortuary monuments arose was one of social diversity. Groups inhabiting the Florida peninsula were in contact with one another as well as other groups outside of Florida. Evidence for this comes in the form of tool stone from west central Florida, marine shell and shark teeth potentially coming from both the Atlantic and Gulf coasts, and exotic stone artifacts from as far away as Georgia, South Carolina, and Mississippi. Although artifacts of clearly non-local origin within the SJRV stand as good material evidence for contact through exchange relationships with neighboring groups and those at greater distances, there is now good isotopic evidence that personnel were moving as well fairly early-on in the Mount Taylor period (Tucker 2009). In this socially diverse, interconnected milieu monument construction arises within the context of identity formation. Memory played a key role in this process and this memory or remembering is manifest in a number of differing ways including the performance of rituals, the construction of mortuary monuments, and the circulation of items from other places both near and far.

In this Chapter I connect the archaeology and materiality of the Thornhill Lake Complex with the broader issues of monumentality and memory. In addition I also provide a discussion of the origins of monuments in the SJRV and the transformation of the ancestral forms of monumental architecture into the sand mortuary mound tradition of the TLP. Eventually the mortuary monuments and ritual practices of the TLP would break down and decline to be replaced with a new architectural form, and ostensibly a symbolic one as well, with the succeeding Orange period. I conclude this chapter with a

discussion of directions for future research at Thornhill Lake as well as the larger region of northeast Florida.

Memory at Thornhill Lake

Memory at Thornhill Lake is manifest in a number of ways. Monumental architecture in the form of mortuary mounds most forcefully demonstrates this. At a much smaller scale, other material traces such as artifacts are arguably memory writ small. These material traces of memory, both large and small, are all involved in the creation and negotiation of identity within the context of ritual performances associated with mortuary rites and monument construction. As noted previously, it is within the context of an increasingly diverse social landscape that these monuments and the rituals that accompanied them emerged. Here, memory practices associated with monuments and other material remains are discussed drawing on the data presented in previous chapters, all with the ultimate aim of understanding the context and origins of mortuary monument construction among TLP hunter-gatherers.

Mounds and Memory

Fundamentally monuments are about memory and memory's evocation (Bradley 1993:2; Campbell 2006). They are able to do this because the very materiality of monuments aids remembrance by acting as signs or indices of past events (Jones 2007:23). Mounds and other material traces implicating memory are effective in its evocation through abduction where everyday experience informs inferential reasoning. In the world of hunter-gatherers constructing monuments, the monument serves as a sign or index of past events (rituals and mound-building), acting to re-present those events in the here-and-now. Such memory acts are what Casey (1987) calls secondary remembering which is a two-fold process. First, the memory is retrieved and second,

the event is re-experienced. Monuments serve as mnemonic devices that *evoke* memories. The memories they evoke will be variable because it is individuals who remember. There will be as many different memories as there are individuals remembering although many of the memories will be similar because they are experienced and formed within the broader social milieu; people remember both as individuals and as part of a group (Connerton 1989: Halbwachs 1992). But let us not forget that some memories are also potentially left out and that those called to mind are those that were privileged during the creation of the monument and recalled during mortuary ritual. This speaks to the power relations involved and the fact that those with it are creating the narrative. Nevertheless, competing narratives and the memories associated with them may well remain although they are “left unsaid” in so far as the monuments and attendant ritual are concerned.

Ritual is among the ways that societies remember, enacted through performative gestures and the spoken word, through incorporated practices (Connerton 1989:72-73). Memory and ritual are inextricably tied. Rituals and rites are repetitive, reiterating or citing past ritual practices, creating and reinforcing continuity with the past (Connerton 1989:45). The past reiterated or cited is more likely to be that of the dominant narrative, however. Incorporated memory practices such as gestures, movements, and the like leave no material traces of their passing. However, in the case the repetitive incorporated practices related to mortuary rituals such as the emplacement of the deceased members of society and accompanying sand deposits, they leave behind unmistakable evidence of their occurrence – the monument itself. In this way mortuary

ritual can also be said to be inscriptive as it writes the dominant memories vis-à-vis the monument directly into the landscape.

There is good evidence for structured ritual practices manifest in the repetitive, structured deposits in TLP mortuary mounds. This can be seen in the alternating white and brown sand strata from Mound A at Thornhill Lake. Orange Mound is similarly structured with alternating deposits of brown and white sand with burials. In fact, white sand is a common component of Mount Taylor period ritual practice from the first appearance of mounded mortuary facilities (i.e. Harris Creek) through to the end of the TLP (Thornhill Lake Mound A) and indicates the time depth of this practice in mortuary ritual. The repetition of these deposits serves to illustrate the structured nature the mortuary rituals and represent bridges of practice and memory to the past.

Memory and citation with respect to the Thornhill Lake Mounds is a two-fold phenomenon. First the siting of the sand mortuary monuments at loci of previous shell mounding is a citation of this prior practice of mounding. Second, the multiple sand mounding events are citations of the initial depositional episode associated with the establishment of the mortuary monument. Interestingly, in the initial shell mounding, there is no evidence of any mortuary related activity and in this way the new practice of mounding sand and emplacing bodies in that sand heralds a new tradition. Both acts draw directly upon the past and call to memory previous practices and events.

At Thornhill Lake this is directly witnessed in the emplacement of the sand monuments at loci of shell mounding. The siting of the mounds references previous shell mounding activities, either in the recent or distant past. In so doing, explicit reference to previous practices is made and continuities with the past are created – the

past is at the same time incorporated and appropriated. Once the mortuary monuments are established, the incorporated practices that established them are reiterated through subsequent depositional episodes during mortuary-related ritual events. The citation of previous rituals and practices is clearly evident in the alternating brown and white sand strata in Mound A. Similarly, although not as explicit, multiple depositional episodes are registered in Mound B through the superimposition of differing zones of brown sand.

Heretofore discussions of memory and monumental architecture at Thornhill Lake have emphasized the mortuary mounds. In addition to the mounds, the shell ridges too are involved in remembering, commemoration, and the construction of identity. At about the same time that Mound B was under construction, so too was the South Ridge. Evidence for intentional mounding at this locus has been discussed previously (Endonino 2008a, 2008b) as well as in this study. Although they are monumental, the shell ridges are of a different quality than the mortuary mounds. Whereas the mounds may have operated as a “high-level” integrative facility where its ritual use was specific (i.e. mortuary), the ridges appear to have been “low-level” where its use was more generalized (Adler and Wilhusen 1990:143). Evidence in support of this comes in the specificity of Mounds A and B in their use as mortuaries and the more generalized and apparently “domestic” materials found in the ridges such as thermal features such as hearths, tool production and maintenance debris, broken tools, and vertebrate faunal remains. The ridges, in addition to their use in mortuary ritual related to Mounds A and B, may also have been used in other non-mortuary rituals as well. Irrespective of what ritual activities they were engaged in, the shell ridges at Thornhill Lake possessed the same potential for evoking memories as the mounds albeit of a potentially different

character. Moreover, in addition to these other non-mortuary monuments and the events that transpired atop them, things also are part of the commemorative activities and also aid in remembrance.

Materials and Memory

Monuments are items of material culture and their involvement in remembrance, commemoration, and ritual practice has been discussed above. Although aiding in remembrance, they are not alone in this. Other material objects such as artifacts also have mnemonic qualities (Lillios 2003; Rowlands 1993; Zerubavel 1996:292). Additionally, “the differential valuation of materials is predicated on the ways that they are used and incorporated socially” (Mills 2005:10). Considering this, it is fair to say that even objects that are of the most mundane character, such as stone tools or shell debitage, potentially have qualities that lend themselves in remembering, especially if they represent social transactions such as gifts (Gosden and Marshall 1999). Objects made from exotic materials from far away places may be even more predisposed to evoke memories of those who made them, where they came from, and the hands of those through which they have passed. They carry with them biographies and histories (Gosden and Marshall 1999; Rowlands 1993). Materials of both sorts have been recovered from Thornhill Lake and played a role in the evoking of memory and the construction of identity.

The foreign and exotic in terms of artifacts is clearly illustrated by the presence of bannerstones, pendants made from the wings of broken bannerstones, and ground stone beads. All of these objects are of a clearly non-local origin in terms of the raw materials used for their manufacture. The bannerstones and pendants are made from materials that in all probability originate in the Piedmont of Georgia and South Carolina,

perhaps along the Savannah River (Sassaman and Randall 2007). The ground stone beads likely came from Mississippi where a well developed lapidary industry is present during the Middle Archaic (Brookes 1999; 2004:106-109). No other similar items were recovered during the work at Thornhill Lake. Because of their exclusive role in mortuary ritual, as accompaniments for the dead, it appears that the social valuation of these items was significant and specific. Because they are made from exotic materials and produced in a far off place, their inclusion in the mounds in a real sense is an incorporation of their histories into that of the mounds and the master narrative of Thornhill Lake peoples (Gosden and Marshall 1999; Rowlands 1993). The people and places associated with these artifacts are evoked through the materiality of the bannerstones, pendants, and beads. Similarly, shell beads that were probably manufactured on the Florida peninsula also were included with burials and operated in a similar fashion where memory is involved. Less exotic and even overtly domestic artifacts too have the potential to evoke memory.

Despite having been deposited in what might be considered to be a relatively quotidian and domestic context, that of a shell midden, objects made from materials originating outside of the SJRV were recovered in some numbers during excavations at Thornhill Lake. Such everyday and mundane items nevertheless have the power to aid in remembrance by providing ground for humans to experience memory (Jones 2007:22). Being made of materials that do not occur naturally in the environs of the SJRV these would be immediately recognizable as having originated elsewhere. Considering that they are not local they had to be brought into the region through human agency, either as a result of direct procurement by the denizens of Thornhill

Lake themselves or through exchange with neighboring groups. Marine shell and shark teeth demonstrate connections to the coast, probably the Atlantic, but also possibly the Gulf of Mexico. Similarly, the presence of chert originating from sources in west-central Florida from the Gainesville area southward to Tampa Bay and the Hillsborough River drainage, indicate connections with these areas. The means of stone procurement was addressed in Chapter 7 and based on the available data it appears that at least some of the stone material was obtained through exchange and some by direct means. In either case this requires contact and interaction with neighboring groups and the establishment and maintenance of relationships with them. Such extralocal materials themselves and the items made from them are an index of the social relationships that facilitated their procurement or exchange. Here the value of the items made from these non-local materials is not in the objects themselves but in the social relationships they represent and/or underwrote and the memories of these relationships that they evoke.

Identity, Memory, and Mounds

Identity, at the level of the individual and the community, are informed by memory and commemorative practices (Assman and Czaplicka 1995; Connerton 1989:70; Kenny 1999:420; Van Dyke 2004:414; Van Dyke and Alcock 2003:3; Wilson 2010). “Memory provides individuals and collectivities with a cognitive map, helping orient who they are, why they re here and where they are going.” Memory, in other words, is central to individual and collective identity (Connerton 1989; Eyerman 2004:161). Ritual plays an important role in the construction of identity, especially where mortuary rites are concerned (Chesson 2001:5; Hermanowicz and Morgan 1999).

Thornhill Lake as a place on the social landscape, and in particular as a locus for rituals related to mortuary rites, was an arena for the performance of these rituals. Mortuary rituals ultimately involve measures to ensure the continued survival of the living community based on the creation of social memories of the past and the future (Chesson 2001:5). Material traces of these rituals, and other material remains found at Thornhill Lake, allow for some insight into the constituent parts of the “community.” Based on the data presented in this study I believe that the “community” existed at the local, regional, and supraregional levels. In short, Thornhill Lake represents the “community” at these varying scales writ small.

Heidegger (1977) by way of Casey (1996) provides a way of examining how the wider community is represented at Thornhill Lake, through the process of gathering. At a minimum places gather “things” in their midst (Casey 1996:24). Things may include any number of animate and inanimate entities such as people and objects. As noted above, both things and people have biographies and by including them within a common context (the mound) achieve sameness through contiguity – creating a metaphor, a trope, specifically a metonym, where the part (mound) comes to represent the whole (community). Bringing together people in the form of bodies of the deceased, the makers and former owners of artifacts from both near and far, as well as the artifacts themselves as social actors, the mortuary mound comes to represent all of these and the wider network of people and things; the community is the mound and the mound is the community. The community is both multivocal and multilocal (Rodman 1992). Multivocal in that a diversity of people are metaphorically (and possibly literally)

represented and multilocal insofar as the diversity of people represented come from a number of different places.

Ritual practices associated with mortuary rites that implicate peoples both near and far arose within a context of an increasingly populated and diverse social landscape. Thornhill Lake operated as a place where the identity of the local group was constructed, negotiated, and affirmed with reference to other people and other places. Therefore, memory's role within the context of mortuary ritual can be considered to have served to integrate the Thornhill Lake peoples into the wider regional community as well as the wider community into the sociality of Thornhill Lake. The mounds themselves are the embodiment of performative and inscriptive practices and evoke and recall memories of peoples and places that constitute the master narrative of who they are, their identity.

Origins of the Archaic Mound Tradition in the SJRV

Arguably the origins of monument construction within the SJRV coincide with the appearance of the first shell mounds. Although not all shell mounds are of a monumental character with respect to size, many of the early shell mounds are. Recent work has shown that early-on in Mount Taylor those groups were purposefully mounding shell to create ritual monuments (Randall and Sassaman 2005; Sassaman 2010). These monuments predate the construction of sand mortuary mounds during the TLP by a significant time span. Evidence for this has come from excavations at large shell middens within the SJRV, notably Hontoon Dead Creek and Live Oak mound. AMS dates put the construction of these monuments between 7100-6800 cal. B.P. (Sassaman 2010:83). Excavations at Hontoon Dead Creek demonstrated that, rather than being the *de facto* refuse of day to day living deposited *in situ*, that there

was intentional mining of older shell midden deposits at the same location but within a prograding river swamp environment. Shell from the older midden, both loose and concreted masses, were mined and redeposited to form the mound. Masses of concreted midden were used in order to shore up the slopes of the mound and acted as bulwarks to stabilize the loose shell. Arguably this act of appropriating older materials is an act of citation of previous constructions and is therefore an act of memory appropriation and transformation.

Harris Creek may be the earliest manifestation of the mortuary mound tradition born in the SJRV and has been dated to approximately 6910-5390 cal. B.P. based on the original dates published by Janh and Bullen (1978). Recent dates on human bone from Harris Creek are considerably older, ranging from 7179-6482 cal. B.P. suggesting that the association of burials with sand deposits is of considerable antiquity (Tucker 2009:54). Aten (1999) interprets the Harris Creek as a shell mound with burials emplaced within prepared sand-filled burial pits. In view of this, it appears that this site is located somewhere in between the first shell monuments and the earthen mortuary monuments of the TLP.

Although the earliest manifestation of the association of mounding and burials within a sand matrix in the SJRV, there is some evidence that the shell monuments also may have represented mortuary monuments (Beasley 2008). Although several of the sites considered by Beasley contain burials within mounded shell contexts, they also frequently occur within sand matrices as exemplified by Harris Creek, Orange Mound, and Persimmon/Baxter. These latter two examples are not dated and bear similarities to the Thornhill Lake Phase mounds such as those at the Thornhill and Tomoka

complexes as well as the Bluffton Burial Mound based on the presence of mounded sand in association with the burials. However, other sites consisting of mounded shell without sand such as Palmer-Taylor may represent another iteration of the mortuary mound tradition of EMT peoples. At about 5600 cal. B.P. the character of mortuary practices and mound construction changed although this change was within a repertoire of practices that would have been familiar to EMT groups.

Sand Mortuary Monuments: Transformation

A new and radical beginning, a transformation, is not even thinkable without an element of recollection (Connerton 1989:13). How does a new order emerge without reference to what came before it? It does not. A new order emerges out of, and in relation to, what came before. It is in this way that TLP sand mortuary mounding references the antecedent spatial practices of EMT shell mounding. This is most forcefully demonstrated by the siting of the mounds on older mounded midden deposits. This practice occurred throughout the study area as well as within the greater southeast and bespeaks a broader architectural grammar to mound construction. Moreover, in addition to siting, the loci of previous practice are at the same time cited by the builders of the TLP mounds at these locations, making explicit reference to these older loci and mounding practices. Thornhill Lake, because it survived intact without the subsequent encapsulation and silencing of its historical narrative through the piling on of midden debris from later occupations, as occurred at other sites such as Harris Creek and Orange Mound, is in the best position to inform us about the transformation of apparently domestic nature to one that is fundamentally different in character. It is also in a position to speak to the issue of selective and or/forced forgetting in so far as it was

not subjected to modifications (covering, encapsulation) that would seem to support that this was occurring.

Although there was a transformation in the nature of the building materials used to construct the TLP mounds (sand) there are other continuities with the past, notably the deposition of certain artifact types at spatially specific loci. At Thornhill Lake the shell platforms upon which Mound A and B were grafted, specifically Mound B, produced a bone bead and a shell pendant that are similar morphologically to the beads and made from exotic stone and shell and the pendant made from the broken wing of a bannerstone found in Mound A. Similarly, shell beads were only recovered from the East Ridge in-between the mounds. Apparently prior to the construction of Mounds A and B the initial shell ridge was an appropriate locus for the deposition of beads and pendants, a spatial and depositional practice that echoes the later emplacement of bodies accompanied by similar materials during the TLP. I believe this indicates continuity with the past both in terms of the location of the mounds but also with the deposition of certain classes of artifacts. Despite the continuity in spatial practice, a transformation in the nature of the materials is also registered, one where the “local” media for bead and pendant manufacture changes to one where the non-local and “exotic” are preferred, or from organic media to inorganic.

Taking the argument further, it appears that at the same time that the transformation of construction media in monument-building is taking place, so too are the preferred burial goods changing. I believe that this represents a change from an inward to an outward orientation during the TLP. Increases in interregional and intraregional exchange coincide with the construction of sand mortuary mounds and

play into what I believe is the integrative nature of TLP mortuary mounds. There is evidence during the preceding EMT that others from outside the SJRV are moving into the region from the southern reaches of the Florida peninsula, perhaps around Lake Okeechobee, and from as far north as Virginia (Tucker 2009). Although isotopic data are lacking from TLP contexts, the abundance of materials originating from outside the SJRV may stand as a proxy for personnel from outside the region. The TLP mounds functioned within a context of identity creation and negotiation and, if it is true that there were an increasing number of “non-local” people coming into the SJRV at this time, it may very well be the case that the commemorative practices associated with mortuary ritual, with who is included within the mounds, acted to include these non-residents into the master narrative.

Disjuncture and Decline: Whither the Orange Mounds?

Mortuary monument construction ceases at or around 4500 years cal. B.P. and slightly predates or coincides with the first appearance of fiber-tempered pottery that marks the inception of the Orange culture which immediately succeeds Mount Taylor. At the juncture of Mount Taylor and Orange there appears to have been a break, a disjuncture, between what came before (MT) and after (Orange). Disjuncture is marked by the cessation of mortuary mound construction and the appearance of new forms of monumental architecture that is not associated with mortuary ritual.

Along the Atlantic “C” and “U” shaped shell rings began to be constructed with some parallels within the SJRV. That the end of mortuary mound construction roughly occurs when fiber-tempered pottery first appears on the landscape is no coincidence and represents the emergence of a “New World Order” (Sassaman and Randall 2009). For Sassaman and Randall (2009) Orange pottery signals the appearance of

“foreigners” on the landscape, possibly from the Caribbean or South America, that had an impact on the indigenous inhabitants of northeast Florida. The presence of these new groups of people register archaeologically in the shift away from crescent and linear-shaped ridges of the Mount Taylor period (and the end of sand mortuary mounds as well) and the creation of the “C” and “U” shaped mounds. Sassaman and Randall (2009) hypothesize that the U-shaped shellworks embody dual social organization whose genesis derived from the coalescence of two formerly distinct people, indigenous Mount Taylor and the foreign fiber-tempered pottery making peoples (coastal Orange). During Mount Taylor alliances and interaction with coastal groups is evidenced by the presence of marine shell and shark teeth within the SJRV. Not coincidentally the availability of these coastal resources waned at the time pottery was first used and the large U-shaped shell mounds began to take form along the SJRV (Sassaman and Randall 2009).

Disjuncture is also clearly seen in how Mount Taylor mortuary monuments were used during the Orange period. Work at the Thornhill Lake Complex and its surrounding environs has demonstrated that the ways that Mount Taylor and Orange period peoples used the landscape and the mound complex were significantly different and that these differences were largely cultural. Site reconnaissance survey around Thornhill Lake has shown that there are very few sites dating to the Mount Taylor period and that those that have been identified were satellite camps to the Thornhill Lake Complex. However, sites dating to the Orange period or having dominant Orange period components with later St. Johns period materials in addition are more frequent and evenly distributed across the landscape, including the Thornhill Lake Complex.

This pattern has been interpreted to represent a new pattern of settlement and a change in the perception of the landscape between Mount Taylor and Orange (Endonino 2008b). Apparently during the Orange period the significant places of Mount Taylor peoples, specifically mortuary monuments, were considered just another place on the landscape and their use was no different than other sites from that period.

A pattern of encapsulation and covering of older Mount Taylor period mortuary mounds with later Orange period deposits has been observed at several of the Mount Taylor mortuary monuments within the SJRV (Endonino 2003). Perhaps, rather than being simply the accumulation of domestic refuse and debris, this depositional pattern was the product of efforts to obfuscate the older monuments, to in effect “silence the past” (Trouillot 1995). Such prominent landscape features such as the Mount Taylor Mortuary monuments of earth and shell would not have gone unnoticed by Orange period peoples and they would have encountered them during the course of daily activities. Their presence would have required explanation and incorporation or concealment as a means to assert their own identity and register their own presence.

Possibly Orange mounds have been misidentified as St. Johns I period burial mounds. Recent research has demonstrated that St. Johns pottery is of considerable antiquity (Jenks 2006; Russo and Heide 2004) and Orange fiber-tempered pottery and St. Johns pottery are contemporary and were manufactured along side each other since at least 4100 B.P. (Jenks 2006; Sassaman 2003b). There exists the possibility that some of the mounds identified as St. Johns I or having St. Johns I components may, in fact, belong in the Late Archaic and are contemporary with Orange. Though why Orange pottery would not also occur, or at least has not been identified as yet, is

curious. Good candidates for being Late Archaic Orange period mounds are the Tick Island Burial Mound and the Mulberry Mound. At both of these mounds plain St. Johns ceramics only were found, and not in any substantial quantities. Similarities exist between the internal structure of the Tick Island Burial Mound and Mound A at Thornhill Lake. Perhaps this similarity in the architectural grammar of these monuments is signaling continuity in mortuary mound ritual practice. Without actually dating the suspected Orange period mounds there is only speculation.

The Place of St. Johns Archaic Mounds in the Southeastern Archaic Mound Tradition

Florida Archaic monuments are different from others in the southeastern U.S. in that most, if not all, were constructed specifically for mortuary purposes. Most other mounds in the southeast are considered only “ritual” in nature though a few have been built over what appears to be human cremations at Monte Sano Bayou and Mound B at Poverty Point (Saunders 1994), or else have intrusive burials from later periods (Piatek 1994; Russo 1994, 1996). Gibson (1994:178) states “I think we are simply going to have to accept the lack of human bones as an indication that Archaic mounds in the Lower Mississippi Valley were not primarily used as tombs.” However, at least one researcher has forwarded a hypothesis that the shell midden mounds of Kentucky, and perhaps other areas of the mid-south, are also burials mounds though their assemblages and features seemingly argue for a more quotidian nature to them (Claassen 1992; Milner and Jefferies 1998). One thing is certain, however, and that is in spite of the fact that there are a few mounds throughout the southeastern U.S. with cremated human remains, none anywhere in this region have as many burials in a

clearly mounded context than Florida. This fact alone makes them unique within the regional context.

In spite of the differences, there are also shared similarities in the siting of both the Florida mounds and those from the Lower Mississippi Valley. Mounds in both regions are constructed on top of older midden deposits; black earth and sometimes shell middens in the LMRV and shell midden mounds in Florida (Arco et al. 2006; Endonino 2003, 2005, 2007a, 2008b; Moore 1894c:88-89; Piatek 1994; Saunders et al. 1997). Another similarity is the use of fire in mound-related rituals (Saunders 1994). Beneath the Florida and LMRV mounds is evidence of extensive burning indicating the use of fire in preparing the surface upon which mounds were constructed. This same practice is known through the ethnohistoric record among the Cherokee (Mooney 1889).

Complexity, variously defined, has been a major topic of discussion in the southeastern U.S. for some time (cf. Gibson and Carr 2004). Florida's Archaic mortuary monuments can contribute positively to this debate as evidence for emergent cultural complexity during this period. Firstly, the Mount Taylor mortuary monuments represent formalized cemeteries which create continuity with place, linking the ancestors, the social group, and the location together and acting as territorial markers. The appearance of territorial markers indicates that a group has settled into a restricted geographic range and has become less mobile and perhaps sedentary for at least part of the year.

Second, differences between individuals are signaled in the differential distribution of grave goods with burials at Harris Creek (Aten 1999) and Thornhill Lake. From this there can be seen a development from the earlier Harris Creek mortuary assemblage

from a rather utilitarian nature to one that is more ornamental and exotic at Thornhill Lake. Most striking about the Thornhill Lake assemblage is the fact that a minority of individuals are furnished with exotic grave goods whereas the majority were given none. Even within this small subset of the general population of the mound, there are differences with some burials having shell beads only, some a few stone beads, and still others with bannerstones and pendants made from bannerstones as well as shell and stone beads. The fact that these data were reconstructed based on Moore's field notes (1894a, 1894b) as well as his publications on Thornhill Lake (1894c, 1894d) present problems for just how representative these division are, not to mention other differences that may have existed but were not identified such as differences in age and gender with regard to the distribution of grave goods within the mounds. Taken at face value, there were differences in the distribution of grave goods within both the mounds at Thornhill Lake and hint tantalizingly at potential for discerning inequality among the sites inhabitants.

In sum, the Mount Taylor period Archaic mortuary mounds of the SJRV and Atlantic coast represent a departure from the "ceremonial" mounds of the Archaic of the greater southeast in that they were constructed and used primarily for mortuary purposes. They are also different in that they have produced evidence suggesting a level of social inequality not only within the social groups creating them, but also perhaps between groups who did not make them. Saunders (2004:154) questions whether the presence of mounds in and of themselves is sufficient to infer inequality and social complexity among the Archaic mounds of northeast Louisiana and ultimately concludes that they are not and could easily have been created by hunting and

gathering groups without the presence of inequality or complexity. The contribution of Florida's Archaic mortuary mounds is that they have provided some data to suggest that there was indeed some inequality among the members of society as well as complexity as manifest in interregional and intraregional exchange, monumental architecture, formalized cemeteries, and differential access to certain items of material culture if not in life, at least in death. With contributions to the regional prehistory of the region, as well as the study of hunting and gathering societies in general, the place of Florida's Mount Taylor mortuary monuments of the SJRV is assured.

Future Research Directions

With regard to the Thornhill Lake Complex, future research will largely be concerned with the further analysis of material culture as well as the analysis of zooarchaeological remains, feature matrices, and radiometric samples as new questions arise. Analysis of zooarchaeological specimens from Test Units F, J, and L has been undertaken by Jon-Simon Suarez for his master's thesis. Unfortunately this information was not available at the time of this writing. Feature matrices were not analyzed as part of this study but processing and analyses of fill from these contexts is planned. The results of the zooarchaeological analysis and the analysis of feature fill, as well as a full accounting of all other work connected with the TLARP, will be presented in a final monograph through the Laboratory of Southeastern Archaeology at the University of Florida to be submitted to the Florida Division of Historical Resources in order to satisfy the requirements for the 1A-32 permit issued in order to conduct archaeological research on state lands.

At present no additional field work is planned for the Thornhill Lake Complex. However, additional field work has the potential to contribute to the existing data

supporting the intentional construction of shell ridges as part of a planned and intentional mortuary mound and ridge complex. Further work in Mounds A and B should not be undertaken given the high potential of encountering additional human remains irrespective of where units are placed on these monuments. Additional excavation in the North, South, and East ridges can potentially provide additional evidence for ridge construction. Further, close interval augering across the site potentially could aid in revealing further details about the depositional and site formation history leading to a more refined and nuanced picture of how this site formed. Coupled with additional radiocarbon assays, the nature and timing of the construction of site features, such as the one presented at the end of Chapter 6, will be possible.

Organic samples suitable for AMS radiocarbon assay were collected from multiple contexts across the Thornhill Lake Complex. Although funding is not available to date all of the site features or the various strata within a given context, samples are available for analysis as funds become available. Priorities for future radiocarbon assays are several. The South Shell Knoll has been tentatively placed towards the end of site development at Thornhill Lake based on the fact that deposits in TU-I along the western side of the site are younger than those that characterize the deposits on the North and South Ridges, the base of Mound B, and the unmounded midden deposits south of the South Ridge (TU-H). Sufficient organic material from TU-M was collected for dates from multiple strata. Likewise, the East Shell Knoll (STU-4) remains undated and its place within the site development chronology is uncertain other than to say that it formed during Mount Taylor times. Stratum II within TU-F, which caps the intentionally constructed shell ridge on the South Ridge, needs to be dated to provide an ending date

for the ridge construction in this location. Lastly, the shell-free midden deposits across the site need to be dated to determine whether they are the product of later Orange and St. Johns peoples or if they represent deposits laid down by Mount Taylor groups. Organic samples are available from this stratum in the form of charcoal and large deer bone.

Future work at other Mount Taylor period mortuary mound sites within the SJRV and along the Atlantic coast is clearly in order to either substantiate or disprove past and current thinking on the subject, including that of this study. Among these are the Tomoka Mound Complex, Orange Mound, the Mound at the North End of Lake Monroe, Persimmon/Baxter Mound, and the DeLeon Springs Mound. Nuts-and-bolts archaeology is needed at these sites, framed by theory that acknowledges them as having symbolic and ideological import and conceives of them as being something more than mere quotidian refuse. Research designs ought to minimally include topographic mapping of sites and their features, limited stratigraphic excavation to reveal depositional histories and practices as well as to recover materials to aid in identifying site activities and chronology and, related to the latter, and the collection of organic materials for radiometric assay. Including these minimally provides some basis for comparison with the research presented in this study. Radiometric assays are particularly important in order to establish the temporality of mortuary monument construction during Mount Taylor. A few dates are available but more are needed.

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BIOGRAPHICAL SKETCH

Jon C. Endonino grew up in the Dunnellon area of Marion County, Florida spending much of his childhood fishing the lakes and exploring the woods around his home. Jon attended elementary, middle, and high school in Dunnellon and later attended Central Florida Community College where he began his career in archaeology. He attended the University of South Florida (USF), Tampa where he would earn a Bachelor of Arts in anthropology in December 1996. Shortly after graduating from USF, Jon was hired by Southeastern Archaeological Research, Inc. of Gainesville, Florida where he has worked for the past 15 years. In October 1997 Jon and his first, true love Heather Goolsby were married. In the Fall of 1998 Jon began his graduate studies at the University of Florida (UF) under Kenneth Sassaman, receiving a Master of Arts in anthropology in May 2003. Jon's interests turned to the topic of monument construction during the Archaic period in Florida and the greater southeastern United States and pursued it during this dissertation research, again at UF and under the direction of Ken Sassaman. Jon and Heather have made their home in Ocala, Florida since 1997 where they live with their three Jack Russell Terriers.