FEASTING AND COMMUNAL RITUAL IN THE LOWER MISSISSIPPI VALLEY, AD 700–1000

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ABSTRACT

Megan Crandal Kassabaum: Feasting and Communal Ritual
in the Lower Mississippi Valley, AD 700–1000
(Under the direction of Vincas P. Steponaitis)

This dissertation examines prehistoric activity at the Feltus site (22Je500) in Jefferson County, Mississippi, to elucidate how Coles Creek (AD 700–1200) platform mound sites were used. Data from excavations undertaken by the Feltus Archaeological Project from 2006 to 2012 support the conclusion that Coles Creek people utilized Feltus episodically for some 400 years, with little evidence of permanent habitation. More specifically, the ceramic, floral, and faunal data suggest that Feltus provided a location for periodic ritual events focused around food consumption, post-setting, and mound building.

The rapidity with which the middens at Feltus were deposited and the large size of the ceramic vessels implies that the events occurring there brought together large groups of people for massive feasting episodes. The vessel form assemblage is dominated by open bowls and thus suggests an emphasis on food consumption, with less evidence for food preparation and virtually none for food storage. Overall, the ceramic assemblage emphasizes a great deal of continuity in the use of the Feltus landscape from the earliest occupation, during the Hamilton Ridge phase, through the latest, during the Balmoral phase.

Evidence from the food remains further supports these conclusions. Faunal remains indicate that the Feltus diet consisted mainly of large mammals and fish, and botanical remains suggest a focus on nuts and wild seeds, with limited evidence for domesticated

chenopod. An emphasis on exceptionally large animals (including bear) and easily amassable plant resources further implies large, communal eating events. The presence of ritually important plants, smoking pipes, and bear remains in the Feltus deposits suggest that the meals that occurred during these events were ceremonial.

The final chapter offers a general scheme for identifying, describing, and comparing feasting events in the archaeological record. Based on this comparative framework, I argue that the feasts and communal rituals taking place at Coles Creek sites need not have been competitive, but rather may have emphasized community building and highlighted the shared identity of the participants.

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CHAPTER 1

INTRODUCTION

The Mississippi River played a defining role in the prehistory of the eastern United States. In particular, the Lower Mississippi Valley (LMV) is among the richest archaeological regions on the continent. Due in part to the natural abundance of the river and its associated floodplains (Smith 1978), the region has always been advanced in terms of monumental constructions and is home to thousands of earthen mounds (Steponaitis 1998). These mounds demonstrate high levels of variation in terms of form, size, and elaboration across time and space, and have given rise to many unresolved debates as to their functions and meanings.

The earliest mound construction in the United States occurred during the Middle Archaic period in the LMV (e.g., Saunders 2012). While conical and dome shaped mounds like these continued to be built throughout Archaic and Woodland times, the end of the Woodland period brought about a dramatic change in mound building practices. During this time, people in the American South shifted from building conical mounds primarily used for burial of the dead to larger, flat-topped, platform mounds most often used as foundations for structures or other activity areas. Such mounds continued to be constructed in large mound-and-plaza complexes throughout the subsequent Mississippi period and were still being used when Europeans arrived.

It is often assumed that the shift from building conical to platform mounds reflects parallel social, political, and economic shifts (e.g., from a more egalitarian to a more hierarchical social order) (see discussion in Pauketat and Alt 2003:160-161). However, the timing of these shifts is still debated and thus many questions remain about early platform-mound-and-plaza centers and the communities that constructed and used them. Some of the earliest examples of these complexes are found on Coles Creek (AD 700–1200) sites in southwestern Mississippi and east-central Louisiana (Figure 1.1). Coles Creek immediately predates the more heavily studied Mississippi period Plaquemine culture and archaeological excavation of Plaquemine sites suggests some degree of institutionalized status differentiation and reliance on domesticated crops (Brown 2007). Moreover, ethnographic literature on the Natchez indicates that they had a highly centralized political system of which mound building was an important expression (e.g., McWilliams 1991:125; Swanton 1911). Combined, these archaeological and ethnographic analogies provide the basis for current understandings of the function and meaning of Coles Creek platform mounds. However, recent research has recognized that Coles Creek sites differ from these later examples in important ways (e.g., Fritz and Kidder 1993; Kassabaum 2011; Roe 2010).

This dissertation examines prehistoric activity at the Feltus site (22Je500) in Jefferson County, Mississippi to elucidate how Coles Creek platform mound sites were used. Although the final layout of Feltus, with four mounds surrounding an open plaza, approximates the mound complexes that became common during later times (Figure 1.2), much of the activity at the site took place during Baytown and early Coles Creek times, before the mounds were constructed. Moreover, once the mounds were built, it is not clear that they served the same functions as later platform mounds. By investigating the activities that preceded and were

associated with the construction of these monuments, this dissertation clarifies the role such mound sites played in Coles Creek society. This overarching inquiry is addressed through four primary research questions: (1) How does Feltus fit into the accepted chronology of late prehistoric groups in the LMV? (2) What was the nature of the activities taking place at Feltus? (3) How did that change through time? (4) What can this tell us about the broader social dynamics of Coles Creek people?

The Prehistory of the Lower Mississippi River Valley

In laying out a chronology of human occupation in the LMV, I focus here on changes related to the form, construction techniques, and use of earthen mounds and how these changes reflected parallel shifts in the social, religious, political, and economic institutions. The chronology of the LMV has been comprehensively studied and divided into broad periods. Within each of these periods are a number of archaeological cultures, defined on the basis of geographic and material similarity. In the LMV, it is common to also refer to the time spans during which these cultures existed as periods. These cultural periods are further divided into phases that delineate important shifts in material culture (Kidder 2002:67). The chronology presented in Figure 1.3 represents the cultures that existed in the Natchez Bluffs region of southwestern Mississippi from initial human occupation past the point of European contact.

The earliest known earthen mounds date to the Middle Archaic period. Though mound construction may have begun as early as 5000 BC, radiocarbon dates verify that it was underway at some sites by 3700 BC (Saunders 2012:25). Though comparatively little is

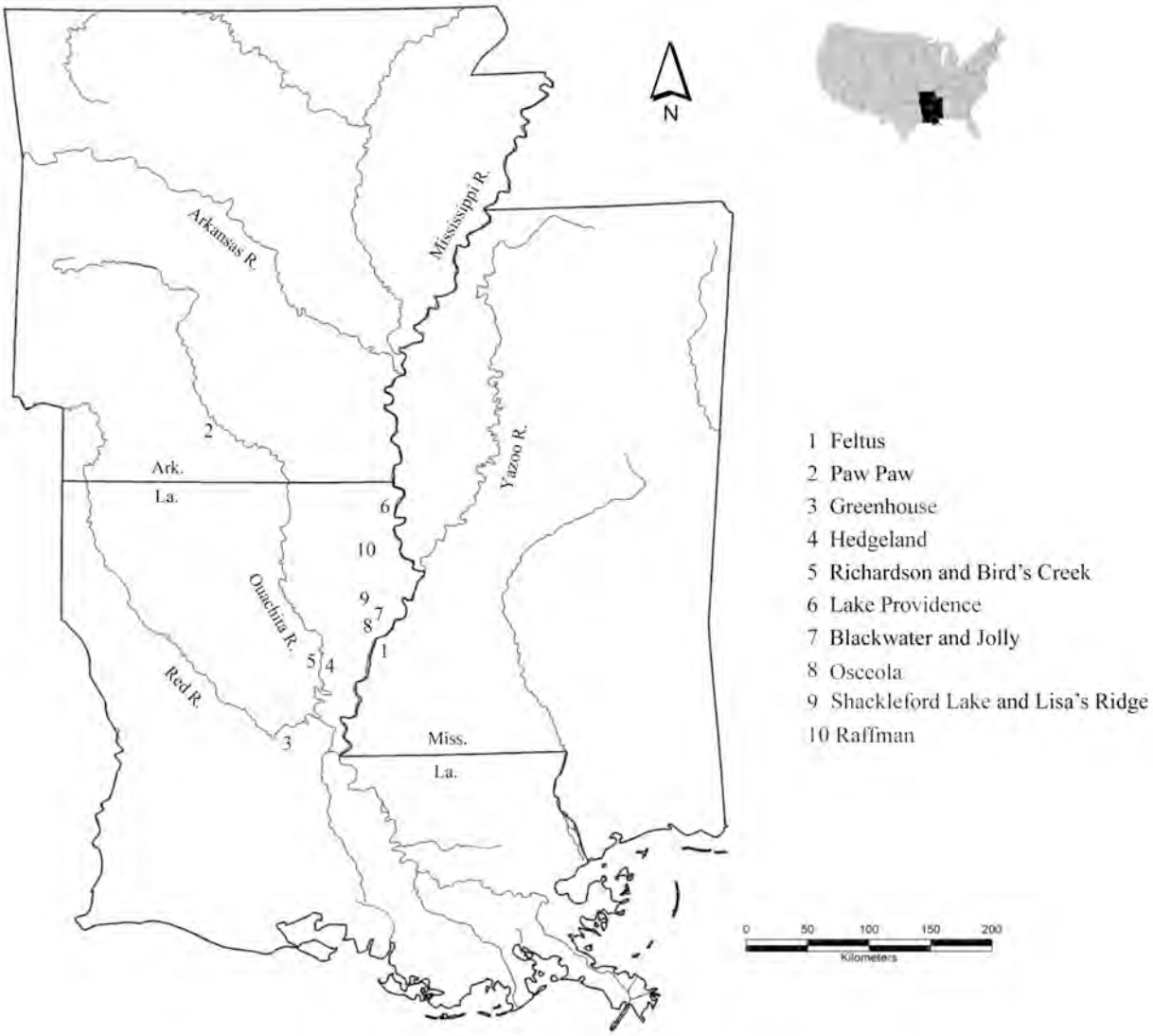

Figure 1.1. Map of the Lower Mississippi Valley showing the locations of the Coles Creek sites discussed in this text (adapted from Roe 2010:Figure 2.2).

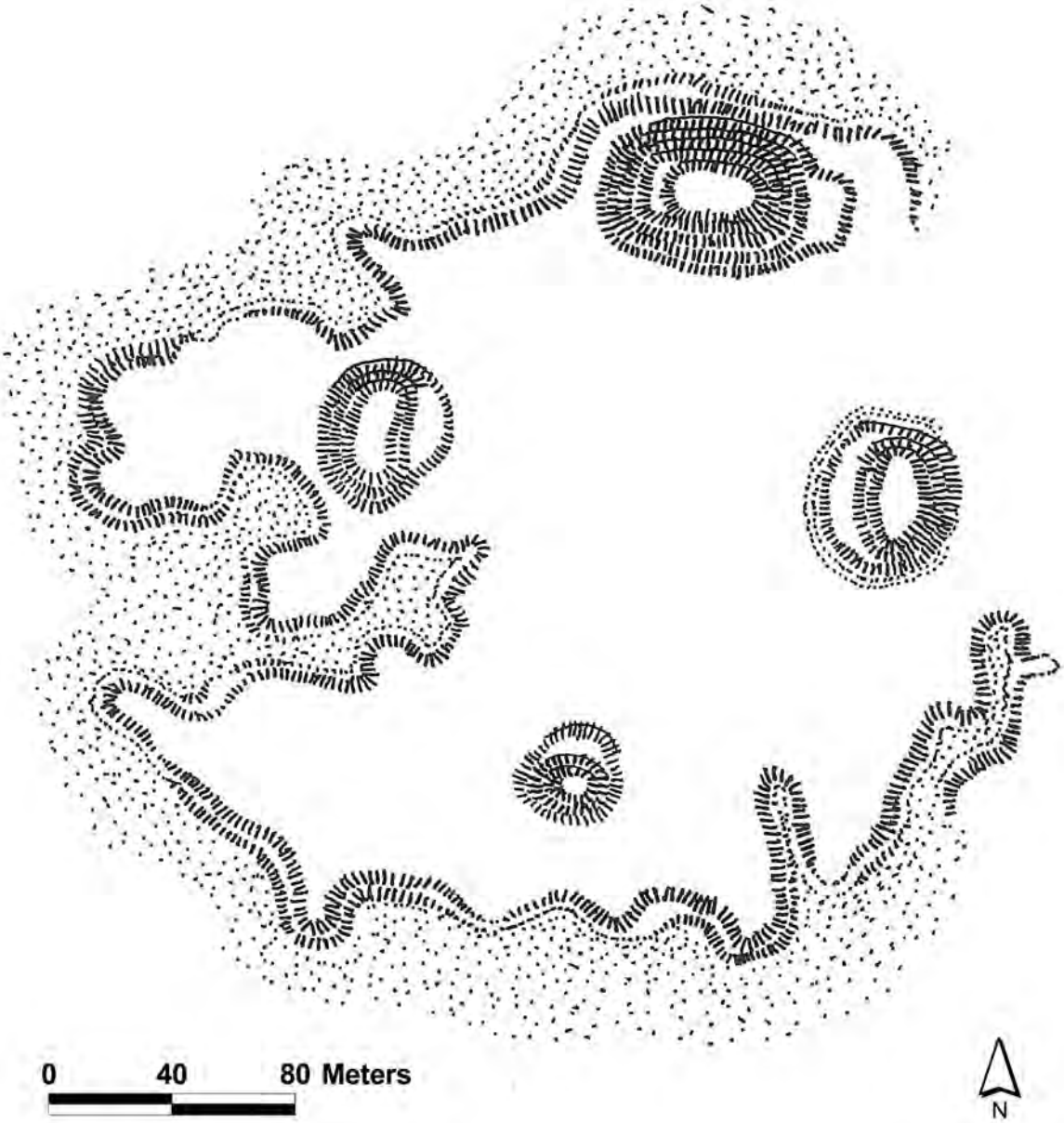

Figure 1.2. Sketch map of the Feltus site showing the shape, size, and position of the four original mounds as well as the physiographic location of the site atop the steep bluffs (drawing by Doug Kassabaum).

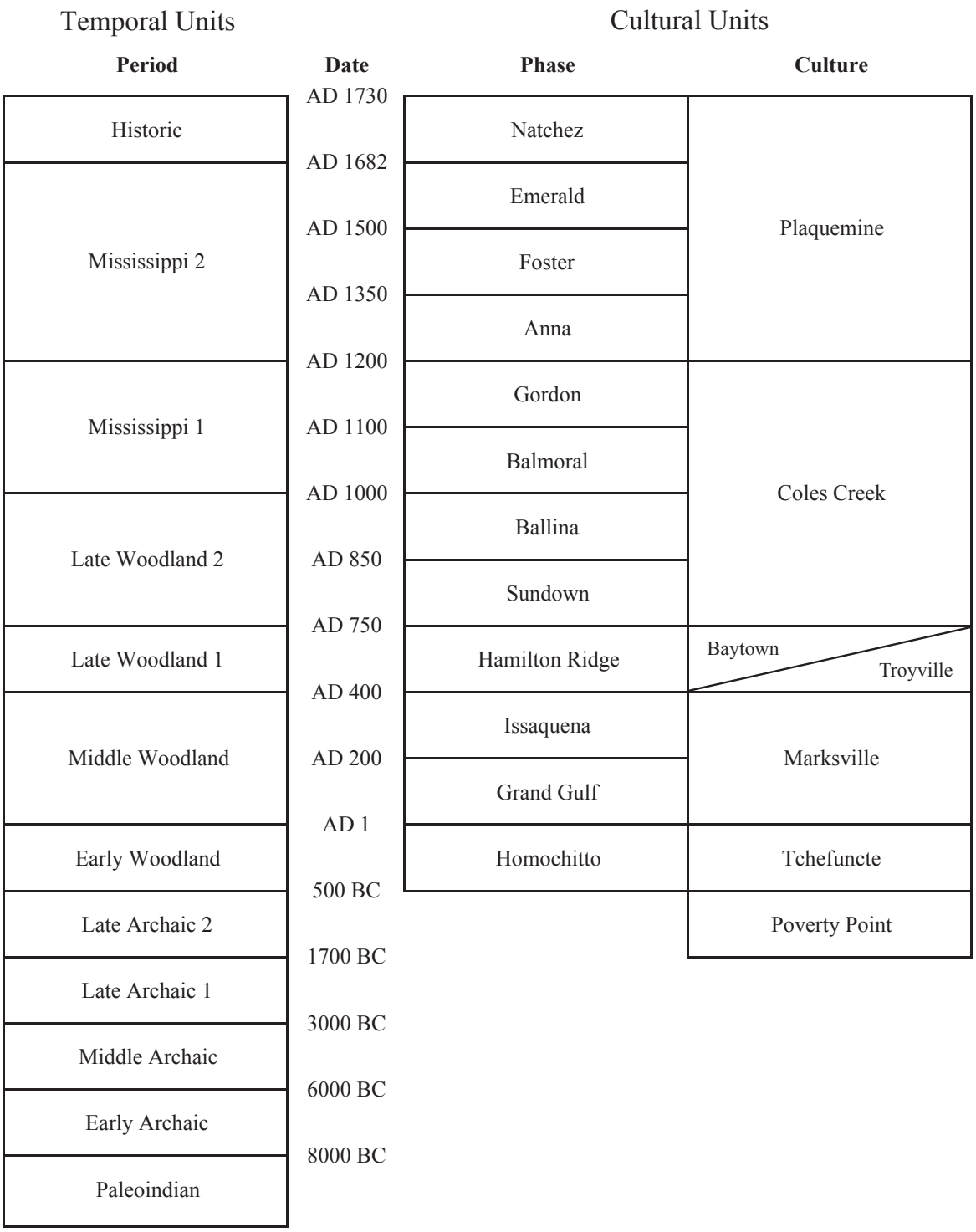

Figure 1.3. Chronology of the Natchez Bluffs region of the Lower Mississippi Valley (adapted from Brain et al. n.d.).

known about the activities that took place on these early dome-shaped and conical mounds, excavation has "identified little evidence of significant differences in the economy and society of the pre-mound and mound occupations. The builders appear to have been egalitarian, localized fisher- or hunter-gatherers" who used the mounds as residential base camps (Saunders 2012:26-27; see also Saunders 2010).

Around 2700 BC, at the beginning of the Late Archaic period, it appears that mound building in the LMV may have abruptly ceased, not resuming until 1,000 years later with the Poverty Point culture (Saunders 2012:45-46).[1] While some terminal Archaic mounds were constructed gradually with each stage having been used before it was covered over (Milner 2004:49), recent research at Poverty Point has shown that Mound A was constructed rapidly with no major breaks in construction (Ortmann and Kidder 2013). Like earlier Archaic period groups, Poverty Point people continued to fish, hunt, and gather wild foods. However, unlike the populations before them, they also took part in an elaborate system of interregional exchange and gathered at large regional centers to carry out communally focused activities. The degree to which these activities led to differentiation in social rank is still debated. Around 1200 BC, Poverty Point was abandoned and mound building in the LMV again slowed (Ortmann and Kidder 2013:76).

Centuries later, a major shift in mound building took place with the Early Woodland Tchefuncte culture (500 BC–AD 1). Dispersed conical burial mounds took the place of large mound centers, and the long distance trade and lapidary industry that characterized the terminal Archaic ceased; with these changes came the first intensive use of ceramic technology in the LMV. Tchefuncte people fished, hunted, and gathered wild resources from

[1] Given the relatively few radiocarbon dates from Archaic mound sites, it is likely that this hiatus in mound building will be filled in as more sites are confidently dated.

relatively permanent villages grouped around burial sites that sometimes contained mounds (Hays and Weinstein 2010).

Marksville communities expanded the practice of building burial mounds and constructed elaborate earthworks during the Middle Woodland period (AD 1–400). The Marksville culture is the LMV expression of the Hopewell phenomenon, and like its more extravagant northern cousin, is characterized by exchange of raw materials, widely shared decorative styles, and elaborate earthwork complexes consisting of conical burial mounds, earthen embankments, and occasional platform mounds. Marksville communities were largely egalitarian hunter-gatherers, though excavations at some sites suggest incipient social differentiation (McGimsey 2010). The platform mounds built during this time likely served a variety of functions, but "the ceremonies held on these surfaces, regardless of their specific form or purpose, involved lighting fires and erecting posts" (Milner 2004:73), practices that remained important to platform mound ceremonialism throughout the rest of LMV prehistory.

Because Late Woodland sites across the eastern United States lack the spectacular artifacts and interregional trade common in the preceding Middle Woodland and subsequent Mississippi periods, they have often been paid scant attention. Yet, there is a rich archaeological record of important social, religious, political, and economic changes that took place during this time, particularly in the LMV. Two Late Woodland cultures—Baytown (or Troyville) and Coles Creek—will be the focus of the next two sections, and so are only briefly discussed here. In the LMV, people continued to construct conical mounds while the construction of large platform mounds became ubiquitous during Late Woodland times. Though often these early platform mounds are discussed as the precursors to Mississippian mounds, their functions were variable and undoubtedly included both the

continuation of long-standing traditions (e.g., interment of the dead, public ceremonies, and feasts [e.g., Knight 2001] and the development of new ones (e.g., as foundations for elite structures [e.g., Ford 1951]).

Plaquemine culture (AD 1200–1730) in the LMV shows only some of the patterns used to define the Mississippi period in the Eastern Woodlands more broadly (Rees 2010). It is characterized by the development of societies that practiced large-scale maize agriculture, built large platform mounds, displayed settlement patterns showing overt site hierarchy, and had chiefdom-like social organization (Brain 1978; Steponaitis 1986). Unlike with earlier groups, there is little argument about whether Plaquemine societies exhibited marked status differentiation as aspects of both residential and mortuary patterns reflect increased social hierarchy (Bohannon 1963; Brain 1978; Brown 2007). Plaquemine platform mounds supported chiefly residences, temples, charnel houses, and public buildings, but also served as locations for feasts and other ceremonies (Beasley 2007; Lindauer and Blitz 1997). The presence of both significant changes and striking continuities in the archaeological record of the late prehistoric LMV suggest that "while Mississippian peoples may have enlarged on or perfected some of the major subsistence, social, political and economic adaptations developed in the Woodland, few characteristics that define Mississippian in the Lower Mississippi Valley were truly novel" (Kidder 2002:66; see also Rees 2010).

The interpretation of Plaquemine societies as highly hierarchical is at least partially based on ethnohistoric accounts of the Natchez who, at the point of European contact, had the most centralized political system documented in a society north of Mexico. Early ethnographic literature focuses on their complex social structure and religion (McWilliams 1991; Swanton 1911). Mound building and mortuary practices were the most obvious

expressions of these in both the archaeological and ethnographic records. The platform mounds built by the Natchez served as foundations for sacred buildings and elite residences (McWilliams 1991:125; Quimby 1942:259). High-ranking officials lived permanently at the mound centers while most people lived on widely dispersed farmsteads and gathered at the mounds only periodically for social and religious activities (Barnett 2007; Brown 1985).

The archaeological record of the LMV thus displays both strong continuity and dramatic change from the time of its earliest inhabitants through the arrival of European explorers. For approximately 6,000 years of this history, mound building played a major role in the ceremonial lives of the people inhabiting this naturally abundant environment. The functions and meanings of these constructions undoubtedly shifted through time, as evidenced by changes in their form and use as well as the religious, economic, and political systems in which they were enmeshed. One of the most dramatic shifts took during the Late Woodland period when platform mounds became the dominant type of monumental earthwork constructed in the LMV. The cultures of this period are the focus of the rest of this dissertation.

The Baytown Period

Partially because of dramatic and persistent differences in terminology (Belmont 1982; Bitgood 1989; Gibson 1982), the first part of the Late Woodland period, the cultures and phases it contains, and its key characteristics remain nebulous and ill defined. The Baytown period contains two distinct cultures — Baytown and Troyville. Baytown culture sites are generally located further north in the LMV and in the Yazoo Basin while Troyville culture sites are generally located further south in the LMV and in Louisiana (Lee 2010:135).

The Baytown period (AD 400–750) has long been described as a period of cultural decline, a "good gray culture" of the Late Woodland (Phillips 1970; Williams and Brain 1983; Williams 1963:297). However, recent research has demonstrated its importance as "a time of population growth and culture change with related socioeconomic and political developments that provided a foundation for the later development of more complex Coles Creek societies" (Lee 2010:135). In the Natchez Bluffs, Baytown is represented by one or two phases—Hamilton Ridge, and sometimes, Sundown (cf. Brain et al. n.d.; Bitgood 1989). Here, I have chosen to include the Sundown phase as part of the Baytown period due to the presence of coincident changes in ceramic decorative technique and site use at Feltus (see Chapter 3).

Much like earlier peoples, Baytown period populations continued to build earthen monuments that served as burial platforms and locations for civic and ceremonial events, and low platform mounds become increasingly common during this time. These mounds show complicated constructional histories and were invariably built in stages (Belmont 1982; Walker 1936). "Mound building during the Baytown period was likely characterized by some form of ideological influence and ritual engagement of local societies and the surrounding population, rather than economic control" (Lee 2010:138). Through these events and other means, some individuals may have achieved higher status than their contemporaries, but this power was impermanent and not inherited, ascribed, or made visible in the mortuary program and was less marked than in both the preceding Middle Woodland and succeeding Mississippi periods (Belmont 1982; Lee 2010).

Many Baytown mound sites have sizeable premound components, and were likely important symbolic locations before mounds were constructed. Both the premound and mound deposits are often associated with evidence of large-scale food consumption (e.g.,

large oval-shaped middens and bathtub-shaped cooking pits) that likely represents intercommunity events (Belmont 1982:88). Baytown people likely lived in small, dispersed hamlets, and like earlier groups, subsisted on wild resources including mammals, reptiles, fish, birds, fruit, nuts, and a variety of non-domesticated seeds. The long-distance circulation of raw materials that characterized the earlier Marksville culture lessened during this period but continued to some degree with societies living to the south and east of the LMV (Belmont 1982; Lee 2010).

Overall, discussions of LMV Baytown groups emphasize a great deal of continuity with both earlier Marksville groups and subsequent Coles Creek groups (see Bitgood 1989; Lee 2010). The ceramic assemblages change gradually with Marksville motifs continuing well into the Baytown period at which point they are slowly replaced by early iterations of Coles Creek motifs (Gibson 1982:31-32). Moreover, elaborate earthworks like those at the Troyville site link Marksville monument construction with that practiced by Coles Creek people and the oval-shaped middens common during the Baytown period, likely provided the structural prototype for Coles Creek mound-and-plaza complexes (Belmont 1967).

Coles Creek Culture

Coles Creek culture (AD 750–1200) spans the Late Woodland and Mississippi periods in the LMV and previous research has largely focused on how it served as a precursor to Mississippian developments. In other words, for much of it existence as a concept, Coles Creek has been viewed as a regional variant of emergent or early Mississippian (Roe 2010:8; Lee 2010:158). However, Coles Creek also shows a great deal of

continuity with its predecessors and can just as easily be envisioned as a late or terminal expression of Woodland period cultures.

In general, Coles Creek mound centers are characterized by two or more flat-topped mounds arranged around open plazas. These plazas were carefully curated, being kept free of debris and at times, were artificially leveled (Kidder 2004). With the possible exception of ritual specialists, mound centers themselves were vacant with the surrounding population gathering at them only occasionally. “Most people resided in small, non-mound hamlets or villages, marked today by midden and artifact scatters usually covering less than three thousand square meters” (Roe 2010:23). Coles Creek people hunted, fished, and gathered wild plant and animal resources, and eventually adopted a number of domesticated indigenous seeds crops.

The question of where Coles Creek falls along the shift from more egalitarian to more hierarchical forms of social organization has been the focus of much recent research (Barker 1999; Kidder 1992; Kidder and Fritz 1993; Roe 2010; Schilling 2004; Wells 1998); however, the material evidence remains ambiguous. The emphasis on building platform-mound-and-plaza complexes has been taken as a sign of social differentiation (Barker 1999; Kidder 1992; Steponaitis 1986; Wells 1998). Specifically, Coles Creek mound-and-plaza centers are larger than earlier examples, may have supported elite structures, and show widespread commonalities in site layout indicating a broadly disseminated and formalized site plan (Williams and Brain 1983:407). Combined, this evidence has been used to argue that larger polities with a more structured system of social, religious, and political institutions centered on emerging elites formed during Coles Creek times.

However, most models for the development of sociopolitical hierarchy rely on the emerging elites' abilities to control and distribute a surplus, and Coles Creek sites lack evidence for large-scale consumption of corn or any other cultigen (Fritz 2000; Fritz and Kidder 1993; Kidder and Fritz 1993; Listi 2008; Roberts 2006). Likewise, the Coles Creek mortuary program implies a more egalitarian social structure consisting of mass burials with no grave goods (Kassabaum 2011; cf. Barker 1999). While there is no evidence for long-distance trade or accumulation of status items at Coles Creek sites, recent research has identified subtle differences between the assemblages at mound and non-mound sites with mound assemblages sometimes containing more decorated pottery and different cuts of meat (Lee 2010; Wells 1998). Finally, evidence concerning the use of Coles Creek mound summits is variable with some showing formal buildings, others showing periodic use of temporary structures, and still others showing no evidence of buildings at all (e.g., Belmont 1967; Ford 1951; Fuller and Fuller 1987; Roe 2010; Williams and Brain 1983; see discussion in Lee 2010:163-164).

Though the various expressions of Coles Creek culture share a great deal, separate regional chronologies have been defined for the Lower Yazoo Basin, the Tensas Basin, the central Ouachita River valley, the lower Red River valley, coastal Louisiana, and the Natchez Bluffs. In the Natchez Bluffs, the focus of this dissertation, Coles Creek is divided into four phases—Sundown,[2] Ballina, Balmoral, and Gordon (see Figure 1.3). The changes that occurred from early to late Coles Creek were gradual but significant, and it is because of this

[2] Bitgood (1989) suggests that the Sundown phase may best be classified as a late expression of the Baytown culture given the continuation of decidedly Woodland traits and a more distinct break between the Sundown and Ballina phases. The Mount Nebo phase in the Tensas Basin and Bayland phase in the Yazoo Basin are also considered transitional periods (Roe 2010:20). The evidence for and against this assignment in the Natchez Bluffs data is discussed in Chapter 3, based on the data from Feltus.

range of variation that Coles Creek can be considered both a terminal Woodland and an emergent Mississippian culture. Through time, Coles Creek mound centers increased in size and complexity and non-mound settlements increasingly aggregated around them (Roe and Schilling 2010). Moreover, the prevalence of various ceramic decorative motifs and vessel forms shifted and there was an increase in the use of cultivated plants. With these changes, it is likely that the use and meaning of mounded landscapes also changed to reflect the shifting sociopolitical structure of Coles Creek communities.

Current Research

Feltus provides an ideal location from which clarify how early Coles Creek mounds were used and refine our understanding of the relationship between Coles Creek and Baytown cultures. Platform mounds had a long history in the LMV by the time Coles Creek mounds were being constructed, and the open plazas of many Coles Creek sites may have actually been formalized during preceding Baytown times. Moreover, excavations at Coles Creek mound centers imply that "Coles Creek culture did not follow the same path of development seen in Mississippian societies elsewhere in the Southeast" (Lee 2010:158). They have not produced evidence of large-scale maize agriculture or symbols of status differentiation, and mound summit use at Coles Creek sites is highly variable. It thus seems that earlier mound building cultures may provide equally, if not more, compelling analogies for Coles Creek than Mississippian and historic period chiefdoms.

More and more often, researchers are acknowledging that elite control of labor is not a prerequisite for the construction of large-scale earthworks (Anderson 1994; 2004; Kidder and Sassaman 2009; Pauketat 1994; Pauketat 2004; Saunders 2004; Yerkes 2002). As many

other cultural characteristics changed dramatically from the beginning to the end of Coles Creek times, the function and use of mound centers may also have changed. As noted by Roe (2010:7), current understandings of Coles Creek sites and, by extension, Coles Creek society suffer from a lack of detailed archaeological studies; this deficiency is particularly marked with early Coles Creek sites, and sites on the eastern side of the Mississippi River (i.e., in the bluffs). This dissertation provides a rich and contextualized study of one site that helps to elucidate the function and meaning of these Coles Creek mound centers.

Chapters 2 and 3 build a chronology of site use at Feltus based on excavation data and stylistic analyses of the ceramic assemblage. Chapter 2 summarizes our 2006–2012 excavations as well as prior investigations that took place from 1852 to 1971. Excavations on and around Mounds A, B, and C, and near the former location of Mound D reveal episodic use of the Feltus landscape focused on food consumption, mound building, and other ritual activities with little to no evidence of permanent habitation. Understanding the chronology of this repeated use is the primary focus of Chapter 3, which employs stylistic analyses of the Feltus ceramics to enhance the basic history presented in Chapter 2 and refine our understanding of Coles Creek chronology more broadly. In addition to defining the types and varieties present in the assemblage (primarily dating from the Hamilton Ridge, Sundown, and Ballina phases of the Baytown and Coles Creek periods), Chapter 3 presents an analysis of pottery attributes that reveals distinctions not reflected in established varieties. In general, this chapter suggests that activity at Feltus was concentrated in the early Coles Creek period and ends by summarizing both changes and continuities in the use of the Feltus landscape through time.

Chapters 4 and 5 aim to elucidate the nature of activities taking place at Feltus through analyses of the collected material and comparisons with related sites. Chapter 4 focuses on identifying and interpreting vessel shape and size as a key to determining site function. An abundance of large serving vessels suggests that feasting was the primary food-related activity at Feltus. Important spatial and temporal differences between contexts are also identified. These differences are discussed both in terms of changes in site use over time, and shifts in the character of Coles Creek ceramic use more broadly. Chapter 5 focuses on the food remains, including both the floral and faunal assemblages from Feltus. The floral material suggests a reliance on nuts and starchy and oily seeds while the faunal material reveals a strong emphasis on fish and large mammal resources. While these are all easily amassable wild resources, the assemblage also shows some of the earliest evidence for cultivation of native plants in the LMV. The collections also show significant use of ritually important plants and animals.

Chapter 6 synthesizes the data presented in Chapters 2–5 in a discussion of ritual activity at Feltus. I identify a repeated ritual cycle of feasting, post-setting, burial of the dead, and mound construction. The feasting remains from Feltus consist of large quantities of more-or-less everyday goods deposited quickly in publically accessible site areas. I argue that this pattern is consistent with a communal and noncompetitive interpretation of the events taking place at Feltus. The chapter ends with a discussion of how a noncompetitive construal of the site affects interpretation of the function and meaning of the monumental constructions there. The evidence suggests that platform mounds were not always tools for creating and legitimizing status differences between people. Rather, the process of constructing early Coles Creek platform mounds likely played an important roles in the

broader ritual cycle focused on strengthening the bonds and emphasizing them similarities among participants.

CHAPTER 2

FELTUS EXCAVATIONS

The Feltus site sits on the edge of the bluff overlooking the Mississippi River alluvial plain and originally consisted of four mounds surrounding a plaza (Figure 2.1). Mounds A, B, and C still stand today, while Mound D was destroyed in the mid 20th century. Mound A, the largest mound at Feltus, is 7 m tall and stands on the north side of the plaza. It is a sub-rectangular (i.e., rectangular with rounded corners) platform mound with a summit measuring approximately 40 m east to west and 20 m north to south. The mound sits directly on the bluff edge and it is difficult to tell where the mound stops and the bluff begins. Mound A is relatively intact, though bulldozing in 1993 disturbed the summit. It has a large, artificially constructed platform extending east from its base.

Mound B, the second largest mound at Feltus, is 6 m tall and stands on the west side of the plaza. It is a sub-rectangular platform mound with a summit measuring 15 m east to west and 30 m north to south. A small platform extends towards the plaza from its eastern edge. Mound B is the most intact mound at the site with a flat and clearly identifiable summit; however, erosional gullies are encroaching from the southwest and north, posing imminent danger to its integrity. For this reason, the complete excavation of Mound B should be a priority for future work.

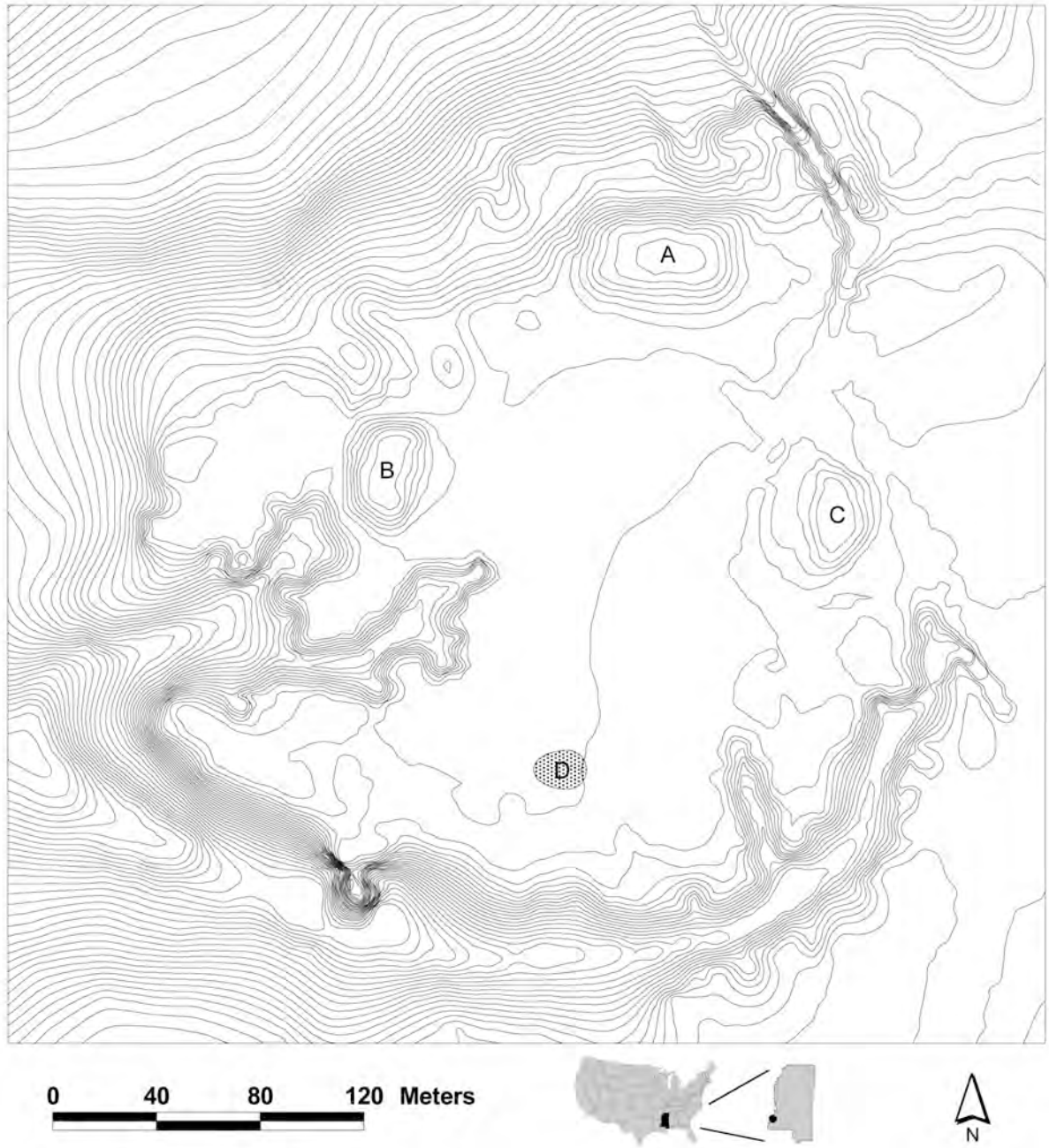

Figure 2.1. Topographic map of Feltus, contour interval, 1 m. Hypothesized location of Mound D is shown as a shaded oval (from Kassabaum et al. 2014:Figure 1).

Located on the eastern side of the plaza and 4 m high, Mound C is a burial mound. The summit of Mound C was highly disturbed by early excavations and pot hunting, but it was likely somewhat rounded originally. It also has a low terrace, 1 m high, that extends westward toward the plaza and the mound and platform are surrounded on at least three sides by a ditch. The now-destroyed Mound D was also a burial mound. Wailes (1852) described it as a dome-shaped mound, 8 feet high, sitting atop a rise that was 4 feet higher than the plaza. We believe the latter was an artificial terrace, suggesting that all four mounds at Feltus had a platform of some kind.

In this chapter I will outline recent investigations undertaken by the Feltus Archaeological Project from 2006 to 2012. The project has conducted over nine months of excavation on the three extant mounds and in off-mound areas. These excavations have allowed us to confidently date the site's use, determine the types of activities taking place there, and eventually, draw some conclusions about the nature of the society in which those activities took place. The descriptions and interpretations that follow draw heavily on the collaborative work presented previously in a series of conference presentations not yet in print (Steponaitis et al. 2007; Steponaitis and O'Hear 2007, 2008; O'Hear and Steponaitis 2008; O'Hear, Steponaitis, and Kassabaum 2009; Steponaitis, O'Hear, and Kassabaum 2010; Kassabaum, O'Hear, and Steponaitis 2011; Steponaitis, Kassabaum, and O'Hear 2012; 2013; Steponaitis, O'Hear , and Kassabaum 2012; O'Hear et al. 2012).

History of Investigations

Feltus, also known by the names Ferguson and Truly Plantation, has a long history of archaeological investigations. It began in the 1840s, when Dr. Montroville W. Dickeson

sketched the site, collected artifacts, and dug into Mound A. Subsequent work included a map made by Benjamin L. C. Wailes in 1852, excavations in Mounds C and D by Warren King Moorehead in 1924, visits by Havard Mcpherson, Carl Clausen, and James A. Ford in the 1930s, and test excavations by Harvard University's Lower Mississippi Survey in 1971. Here, I will review this history with particular emphasis on how the records of these investigations have allowed us to reconstruct aspects of the site that are now lost or destroyed and how they set the stage for our current research.

Dr. Montroville W. Dickeson (Culin 1900:122) was the first to describe Feltus (then Ferguson) in 1846 as a group of seven bluff-top mounds, with the four largest forming an oval or rectangle (Figure 2.2). The three additional mounds were situated more distantly and we now assume they refer to nearby sites (e.g., Pumpkin Lake [22Je517]). In 1852, Dickeson commissioned John J. Egan to paint a panorama to accompany his lecture on the "Monumental Grandeur of the Mississippi Valley" (Veit 1997). The eighteenth panel of this panorama depicts Feltus and remains the most dramatic envisioning of the site to date.

While at Feltus, Dickeson excavated in Mound A. He reports, "The first three feet was a rich alluvial soil, similar to that of the surrounding fields. Lower, the mound varied from the usual arrangement, being filled up with bones of inferior animals and broken pottery" (Culin 1900:122). From this excavation, Dickeson collected a boatstone (now understood as representing an underwater panther) (Figure 2.3) and a carved stone pipe representing a human figure holding a bowl in its arms (Figure 2.4). He also dug in at least one of the smaller mounds, though he does not specify which one. He reports, "In the side of one of the small mounds we found a skeleton of gigantic size. At its head lay three finely finished vases filled with ashes and curiously wrought ornaments" (Culin 1900:123). Though

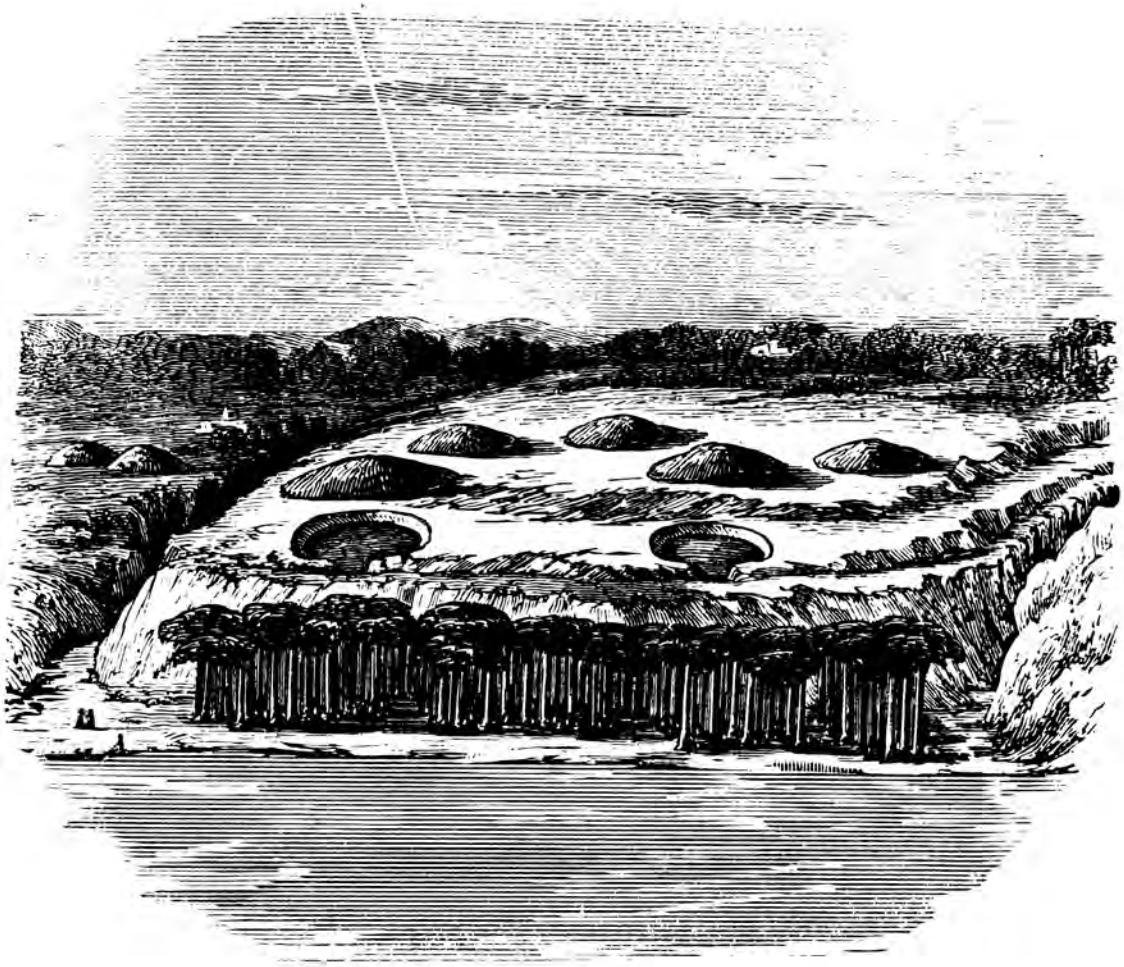

Figure 2.2. Sketch by Dr. Montroville W. Dickeson showing the bluff-top location of the four mounds at Feltus. The Mississippi River is at the base of the bluff. The two negative features that figure prominently in front of the mounds are no longer visible (from Culin 1900:Fig. 63).

Figure 2.3. Underwater panther boatstone found by Dr. Montroville W. Dickeson, 11 cm long (adapted from Brown 1926:Fig. 151).

Figure 2.4. Carved stone pipe found by Dr. Montroville W. Dickeson, representing a human figure holding a bowl, 13.5 cm high (adapted from Brown 1926:Fig. 227).

the presence of burials in Mounds C and D is known, the description of this particular burial is at odds with other descriptions of the Feltus burials (cf. Moorehead 1932) as well as Coles Creek burial practices more generally (cf. Kassabaum 2011). It is possible that this represents exaggeration by Dickeson, or that this burial was in one of the three unrelated mounds in his site description.

Not long after Dickeson's excavations, Benjamin L. C. Wailes visited Feltus (still known as Ferguson). Though Wailes did not excavate, he kept detailed notes on the appearance and configuration of the mounds in his journal (Wailes 1852). These notes included the most accurate early drawing of the site (Figure 2.5). Wailes recorded compass bearings between the mounds,[1] and Steponaitis (2012) has used these bearings to locate the missing earthwork, Mound D. Importantly, Wailes described Mound D as dome-shaped with the tallest portion offset to the west and noted that it was 12 feet high, and sitting a top a rise that was 4 feet taller than the rest of the plaza. The presence of this "rise" is important to our interpretations of the archaeological features in the Mound D area.

Warren K. Moorehead visited the site in 1924 after reading Dickeson's account (Moorehead 1932:163-164). He again reported four mounds arranged around a plaza and draws a sketch map showing two large platform mounds (A and B) and two smaller domed mounds (C and D). He reported on the excavation of over thirty bundle burials from Mound C and his field notes show that he excavated at least eight more from Mound D. Though his records leave much to be desired, he documents the stratigraphy he encountered in Mound C and emphasizes that "not a single mortuary offering accompanied the interments" in either mound (Moorehead 1932:164). While the damage caused by his excavations is still evident on Mound C, they provide the only record of Mound D's function as a burial mound and confirm that the Feltus burials fit the typical Coles Creek pattern (Kassabaum 2011).

Throughout the following decade, Feltus was visited by Carl Clausen in 1930, Clausen and Havard Macpherson in 1932, and finally James A. Ford in 1935. All three refer

[1] Wailes also takes compass bearings on what he calls the "southernmost mound" or "distant mound" across a ravine. These bearings converge nearly 1000 m southwest of Feltus Mound A and pass directly over the summit of the Pumpkin Lake mound. This tells us that Pumpkin Lake was indeed visible from Feltus and confirms that it is likely one of the seven mounds described by Dickeson (Steponaitis 2012).

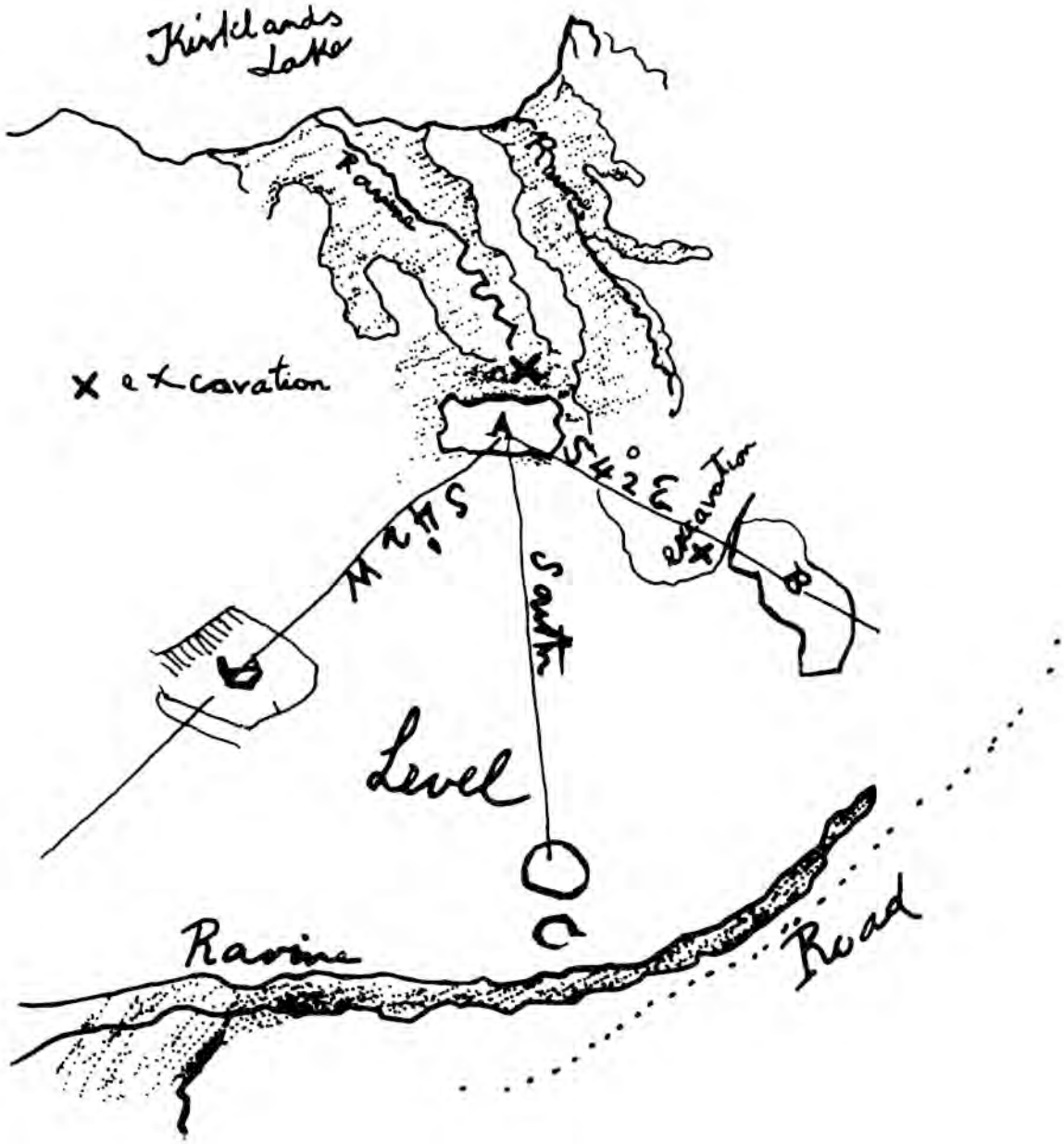

Figure 2.5. Sketch of Feltus by B. L. C. Wailes showing general site layout and compass bearings between each of the four mounds and possibly the locations of Dickeson's previous excavations (redrawn from Wailes 1852:39).

to the site as Truly Plantation. Clausen provides only brief reports on his investigations in letters and short field reports. His concise artifactual descriptions sound much like our collections from Feltus, including the description of gar scales, a particularly abundant class of material in the Feltus middens (Clausen 1930). Two years later, he and Macpherson focused their attention on Mound D. Their sketch of the mound is consistent with Wailes's description of its shape and his brief notes on suggest Mound D was built in two stages and contained minimal material (Macpherson 1932:37). Three years later, Ford (1936:198-199) again recorded four standing mounds, providing the latest indisputable record of Mound D's existence. Though Ford did not excavate, he made an extensive surface collection. This collection is dominated by Coles Creek pottery, initially suggesting that Feltus was occupied primarily during this early period, and not the subsequent Mississippi period (Ford 1936:199).

When excavation at the site resumed with the Lower Mississippi Survey (LMS) (Brain et al. n.d.) there were only three mounds remaining. Because they did not recognize this site as Truly or Ferguson, they called the site Feltus after the landowner at the time, assigned it the number 26-K-42, and labeled the remaining mounds A, B, and C. The fourth mound, which we now call D, had been destroyed between 1935 (when Ford visited) and 1947, as indicated by the absence of the mound in a 1947 aerial photograph (Steponaitis et al. 2012). They mapped the site, again showing its relationship with nearby Pumpkin Lake, and excavated two units at the base of Mound B. They interpreted their stratigraphic sequence as representing a clay cap overlaying a primary midden. The ceramics from these units suggest that the earliest occupation of Feltus was during the Hamilton Ridge and Sundown phases, which fits well with our current understanding. However, they also report Gordon phase

markers in the lower levels of excavation, thus beginning the decades-long debate about whether Feltus was an early to middle Coles Creek site or very late Coles Creek to Plaquemine site (Brain et al. n.d.).

Current Research at Feltus

The Feltus Archaeological Project, directed by Dr. Vincas Steponaitis of the University of North Carolina, Chapel Hill and John O'Hear, then of Mississippi State University, conducted nine months of excavation at Feltus from 2006 to 2012. This included University of North Carolina Burch Field Research Seminars in 2006 and 2007, a volunteer excavation in 2010, a weeklong project in 2011, and a summer field school in 2012. The purpose of the project was to determine the dates of occupation at Feltus and develop an understanding of the use and construction history of the mounds. Survey and excavation data combine to document the spatial distribution of cultural material across the site. Data for mound construction chronology include limited coring and geophysical work, stratigraphic profiles, relative dates from diagnostic ceramics, and radiocarbon dates from organic material. Finally, data on site use are compiled from features and artifact assemblages excavated from primary and secondary deposits. The remainder of this chapter will outline the 2006–2012 investigations at Feltus; the following chapters will explore the meaning and significance of the recovered materials for our understanding of Coles Creek society.

Site Surveys (2006)

The first step in our fieldwork was to create a map, which documents the site's distinctive physiographic setting (see Figure 2.1). A surface collection conducted in 2006

showed concentrated material in the southern end of the plaza, between Mounds A and B, and south of Mound D (Figure 2.6a). This distribution suggested that the mounds were built on an oval or parentheses-shaped midden similar to that at Greenhouse (Belmont 1967). A grid of shovel tests confirmed the presence of this oval midden surrounding the plaza (Steponaitis and O'Hear 2008). Density maps of artifact types, especially ceramics, showed the midden's extent (Figure 2.6b). This pattern of debris indicated that the site was not occupied haphazardly before the construction of the mounds, but rather the occupation was a planned use of space, which already included the purposeful creation of the central plaza (see also Pauketat 2007:89-100). At Greenhouse, this early site plan consisted of "an oval ring of occupied area including midden, burials and sometimes flat-topped mounds, with no signs of occupation either inside or outside the ring" (Belmont 1967:30). Named by Belmont, this "Black River site plan" was common at sites from the late Baytown period, however recent research at sites such as Feltus, Mazique (LaDu 2013), Fredericks (Girard 2000), Jackson, Marsden, Insley (Belmont 1982) implies that it may have been a common feature at Coles Creek sites as well.

In 2006 and 2007, Jay Johnson and Bryan Haley of the University of Mississippi and John Peukert with the Army Corps of Engineers in Vicksburg, Mississippi conducted geophysical surveys at Feltus. Initial survey included magnetic gradiometry, electrical resistivity, and ground penetrating radar (GPR). The GPR did not produce interpretable results, likely due to the fine-grained loess soils, and the resistivity identified similar anomalies as the gradiometry. Our primary interpretations were thus based on the results of two magnetic gradient systems: a Geoscan FM36 and a dual Bartington 601 (Haley and Johnson 2008).

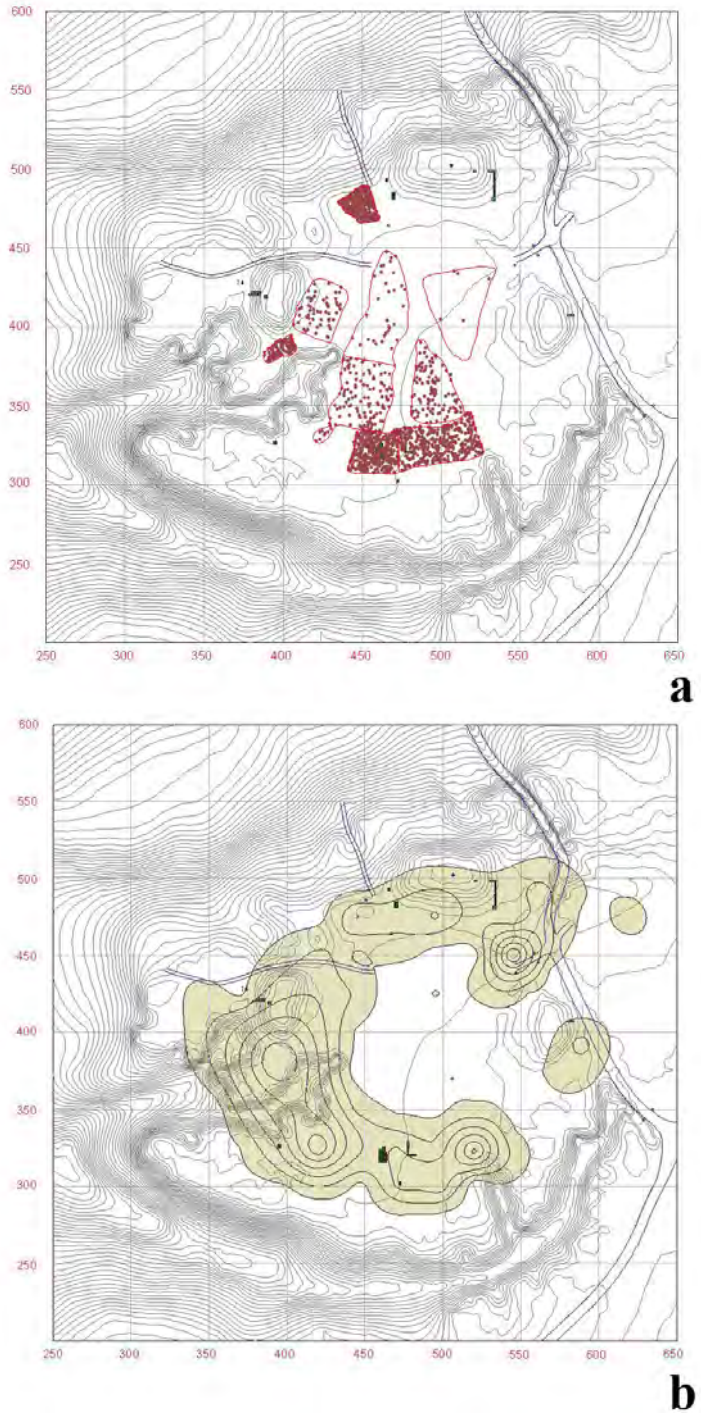

Figure 2.6. Demonstrations of the oval-shaped midden at Feltus. (a) Results of the pre-excavation surface collection at Feltus showing concentrations of material in the South Plaza, between Mounds A and B, and south of Mound B. Dots represent the number of artifacts collected from a particular surface collection area. (b) Density map of ceramic artifacts recovered during shovel testing at Feltus. (From Steponaitis and O'Hear 2008.)

Magnetic gradiometry is an effective technique for locating prehistoric features, especially burned houses and midden pits (Haley and Johnson 2008). Though some weak magnetic anomalies were present, the plaza at Feltus generally showed little evidence of features (as might be predicted if Belmont's [1967] description of Greenhouse is taken as a model). However, the data from the Mound D area showed two anomalies with high magnetic susceptibility that were initially interpreted as burned structures due to their size and strong magnetic signature. Excavation of these and other anomalies is discussed in the following sections by site area.

Excavation Methods

We excavated in four major site areas at Feltus — Mound A, Mound B, Mound C, and the area surrounding the former location of Mound D. Three smaller excavation blocks not associated with any mound were also excavated (Figure 2.7). The following terminology will be used to discuss these excavations. *Areas* are portions of the site that have internally consistent stratigraphic sequences, usually surrounding a single mound. Within these sites areas, excavations are divided into *blocks* defined by spatial proximity. The stratigraphic sequence within a block is clear because each excavation shares at least a portion of its profile with the others. It is thus from these blocks that stratigraphic analysis units were made. *Cuts* are subdivisions of blocks that separate larger excavations into smaller pieces that may need to be described or discussed separately. Often these cuts are defined by a change of direction in the excavation trench. Each cut is made up of a number of *units*, which correspond to the horizontal extent of excavation units as they were dug in the field. Units are identified using northing and easting grid coordinates with reference to an arbitrary site

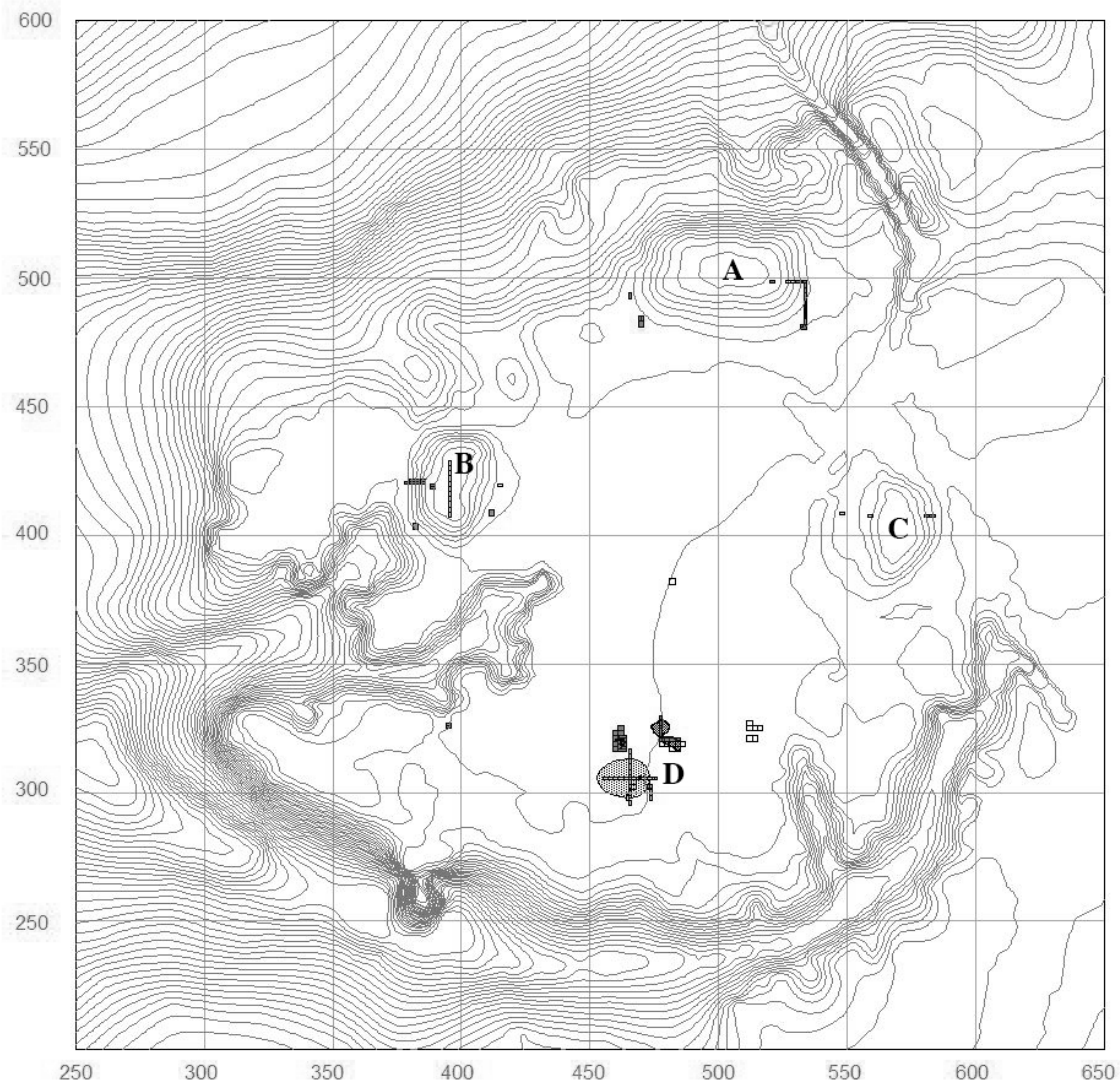

Figure 2.7. Topographic map of Feltus showing the 2006–2012 FAP excavation units as well as the 1971 LMS units at the base of Mound B.

datum (e.g., N500E500) and named according to their southwest corner. Individual units will be discussed infrequently, as information is generally more usefully presented by block or cut.

Every excavated area on the site can thus be referred to using the following nomenclature: AreaBlock.Cut-Unit (e.g., A1.1-N498E532). When discussing mound excavations, the stratigraphy of the mounds is described by construction episode, or *fill,* and *surface* proceeding from the bottom of the mound (or earliest episode) to top of the mound (or latest episode). Therefore, stratigraphic analysis units are referred to using the following nomenclature: Area.Fill (e.g., A.F1) or Area.Surface (e.g., A.S1).[2]

Excavation in mounds was primarily undertaken as 1 x 2 m units. The excavations were conducted by removing A-horizon soil to eliminate modern contamination, then digging arbitrary 10–20 cm levels through mound fill until surfaces were encountered. Whenever possible, transitions between fill episodes and surfaces were excavated in natural levels (i.e., zones), following the stratigraphy. When in mound fill, soil was dry screened through half-inch mesh. If little to no material was encountered, a sample of 40 gallons of soil was screened from each level until artifact density increased. Surfaces and features were water screened through sixteenth-inch mesh and 10-liter flotation samples were taken.

Horizontal excavation blocks in off-mound areas were primarily dug in 1 x 1 m, 1 x 2 m, and 2 x 2 m units. We first removed the plow zone (extending 15–25 cm below the current surface) to eliminate modern contamination; this was dry screened through half-inch mesh. In most cases, this revealed either E or B_t-horizon subsoil and features stood out clearly. When possible, features were cored out without removing the surrounding subsoil;

[2] A block designation can be added after the area designation if necessary for distinguishing between stratigraphic sequences that are not consistent through the entire mound.

they were bisected to determine zones and then the second half was excavated by zone. A 10-liter flotation sample was taken from each zone and any remaining soil was water-screened through sixteenth-inch mesh. Particularly large features like those in D2 were removed in 10 cm levels and flotation samples were taken from each level.

All digging was by hand using either shovels or trowels unless otherwise noted in the sections below. Plan-view sketch maps and plan and profile photographs were taken at the end of each level; when features were encountered, their plan and profile shapes were either mapped or plotted using the total station. Final excavation profiles were drawn and orthographic photomosaics were created when excavation blocks were completed.

Mound Geophysics

In 2012, we utilized two geophysical techniques that explore depths beyond those commonly targeted in shallow geophysics (i.e., more than 1 m below surface) to provide a more complete view of mound construction and use at Feltus (Kassabaum et al. 2014). Specifically, we employed electrical resistivity tomography (ERT) and down-hole magnetic susceptibility (DMS) to: (1) locate and map the extent of subsurface archaeological features (e.g. clay floors, burned features, and middens), and (2) assess the nature and cadence of mound construction. The results of this survey will be included in the site area discussions below.

Electrical resistivity tomography (ERT) measures the ability of soil to resist an introduced electrical current. Electrical resistivity (ρ) is affected by porosity, degree of saturation, pore water resistivity, and clay content. Although not commonly used in archaeological contexts, ERT has been applied across Europe to explore the internal structure

of burial mounds, buried buildings, and barrows (Astin et al. 2007; Nuzzo et al. 2010; Tonkov and Loke 2006). ERT data at Feltus were collected with the Advanced Geosciences SuperSting R8 IP.[3] Down-hole magnetic susceptibility (DMS) is a geophysical technique developed specifically for archaeology that involves lowering a small sensor into core holes removed with an Oakfield soil corer. DMS measures volume magnetic susceptibility (κ) and detects the same features as the in-phase component of an electromagnetic induction instrument (i.e., burned surfaces, midden pits, mound stages, enriched living surfaces, and buried A-horizon soils). At Feltus, DMS data were collected with the Bartington MS2H.[4]

Mound A Investigations

Excavation, coring, and DMS have provided a clear view of the construction history of Mound A, contributed to our understanding of its use, and provided significant assemblages from which to characterize the submound deposits. The mound was built in four stages atop a dense midden. It yielded no evidence of wooden buildings or occupational debris on its summits, though we discovered large fire pits on one surface. Within the Mound A area, there were two excavation blocks—A1 and A2 (Figure 2.8). A1 was on the eastern side of Mound A and was dug during 2006, 2007, and 2012. It was made up of four cuts. A1.1 was an 8 x 1 m trench running east to west into the eastern flank of the mound. A1.2 was a 1 x 2 m unit on the eastern edge of the summit. A1.3 was a 2 x 2 m excavation off the southeast corner of the mound. A1.4 was a 16 x 1 m trench running north to south and

[3] Data collected with the SuperSting were processed using the Advanced Geosciences EarthImager 2D software package. We used a smooth model inversion to process our data.

[4] Readings were obtained every 2 cm from 10 to 300 cm below the surface. Data were visualized as both scatter plot core lines and interpolated multi-core profiles in Golden Software's Voxler software. The profiles received minimal processing with a smoothing filter.

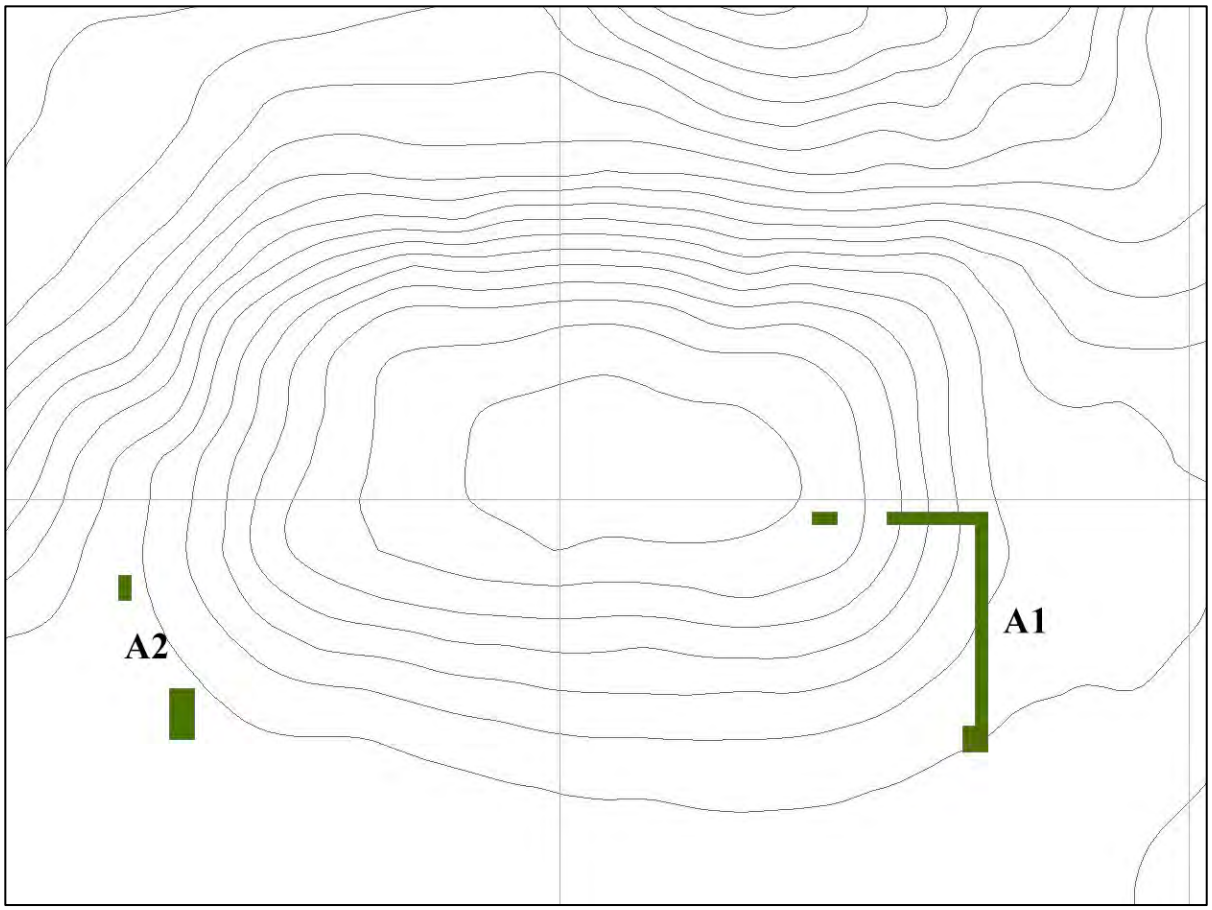

Figure 2.8. Detailed topographic map of Mound A at Feltus showing 2006–2012 excavation units.

connecting A1.1 and A1.3. It was excavated mechanically to the submound midden and then hand excavated. A2 was located off the southwest corner of Mound A and was dug in 2007 as a single cut. It consisted of a 2 x 4 m window into the submound midden.

Block A1: Mound Stratigraphy

A1.1 and A1.2 are the primary excavations on which our understanding of Mound A's stratigraphy is based (Figure 2.9). When combined with DMS data from 2012 (Figure 2.10), they revealed four construction episodes (A.F1–A.F4). A mound surface defined the

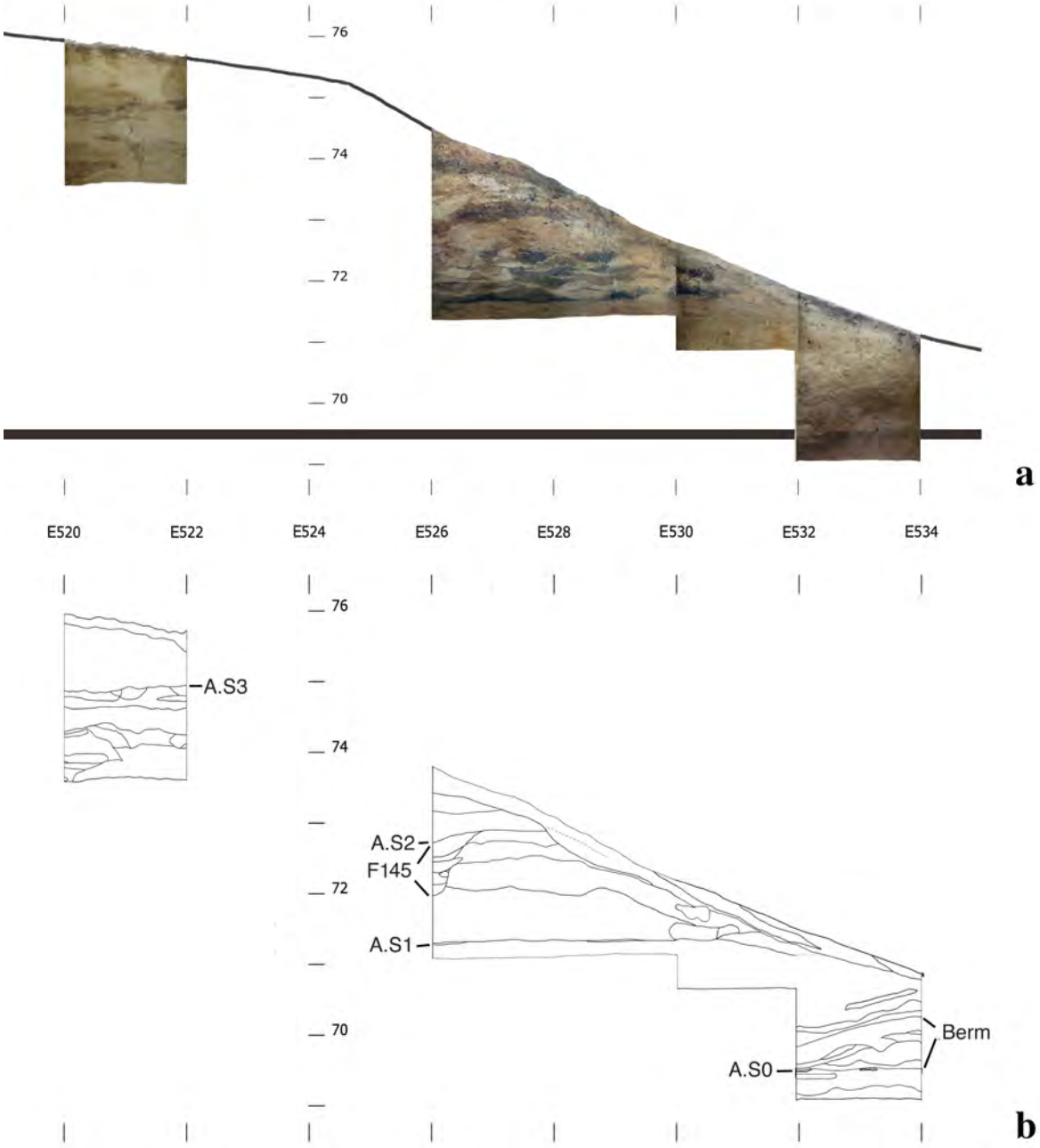

Figure 2.9. Northern stratigraphic profile of A1.1 and A1.2 showing the premound midden (A.S0), four mound construction stages (A.F1–A.F4), mound floors (A.S1–A.S3), earthen berm, and a portion of the large bathtub-shaped pit. (a) Photomosaic. (b) Drawn profile. (Adapted from O'Hear et al. 2012.)

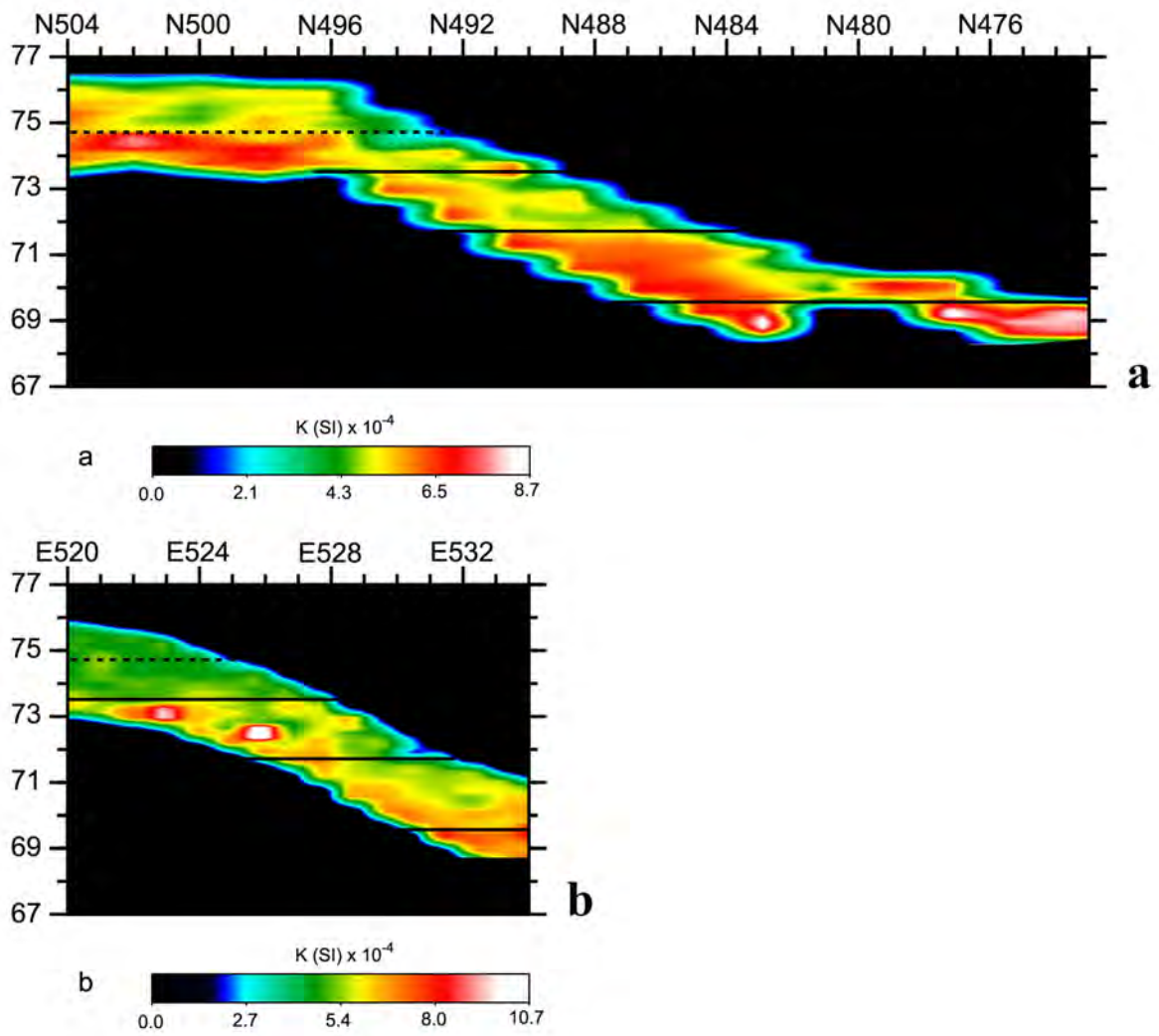

Figure 2.10. Down-hole magnetic susceptibility data from Mound A. Solid black lines indicate floors identified via excavation (A.S0–A.S2). Dotted lines indicate additional floors identified in the geophysical data (A.S3). (a) Southern slope showing mound floors, and potential constructional berm. (b) Eastern slope showing mound floors, constructional berm, and two bathtub-shaped pits (From Kassabaum et al. 2014:Figure 7.)

beginning and end of each of these episodes. The submound midden is termed A.S0, and the subsequent surfaces are called A.S1 through A.S4, the last of which was significantly disturbed by bulldozing in 1993.

A.F1 was over 2 m thick (69.6–71.7 m) and encompassed the entirety of the platform to the east of Mound A as well as the mound proper. It contained virtually no artifacts.

Excavated profiles and DMS data suggest that an earthen berm was used to create the initial platform on which the mound was built (see Figures 2.9–2.10). The berm itself was heavily basket-loaded and dark, while the fill inside and atop it was lighter was color and more homogenous. Here, the term *berm* refers to a purposeful, localized piling up of earth that was then filled in during the construction of a larger monument.[5] Berms are reported from a variety of sites, particularly those showing rapid construction of large earthen monuments, and are thought to increase the stability of an earthen platform during its construction (Bareis 1975; Boudreaux 2005; Sherwood and Kidder 2011:75, 82).

Topping this first construction stage, A.S1 showed in the excavation profiles as an unburned floor veneered with thin layers of black and then white sediment (Figure 2.11b). Its magnetic signature was much stronger in the DMS data from the southern mound slope (see Figure 2.10), perhaps indicating that portions of the floor not encountered in excavation were burnt (Kassabaum et al. 2014:33). Here, the term *veneer* refers to any surface of a mound coated with a thin layer of contrasting sediment.[6] Veneers are generally interpreted as having both symbolic and practical functions. Symbolically, the colors used in veneers would have been striking and possibly associated with specific meaning (Pursell 2004). Practically, "their fine texture and smooth, consistent outer surface may have served to repel rainwater, discouraging infiltration of the mound fill beneath" (Sherwood and Kidder 2011:80-81).

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[5] This is variably referred to as the "haystack," "berm," "modified 'buttress," or "bulwark" method "wherein multiple piles of sediment were accumulated to a height of 1–4 m with a natural angle of repose (often maintained using sod blocks), these piles were then joined with bridging strata that created a semi-level surface on which the next series of dirt was placed in a similar fashion" (Sherwood and Kidder 2011:82).

[6] Sherwood and Kidder (2011:79) are more limited in their definition stating that a veneer consists of "layer(s) of different source material that have been applied to an external slope (~35 degrees) or stepped surface" that range in thickness from 2–15 cm. Importantly, they differentiate between veneers (which are sloped and not directly associated with the remains of buildings) and prepared floors or living surfaces (which are flat and associated with buildings). As all of the Feltus "veneers" are on flat surfaces, perhaps another term would be better suited.

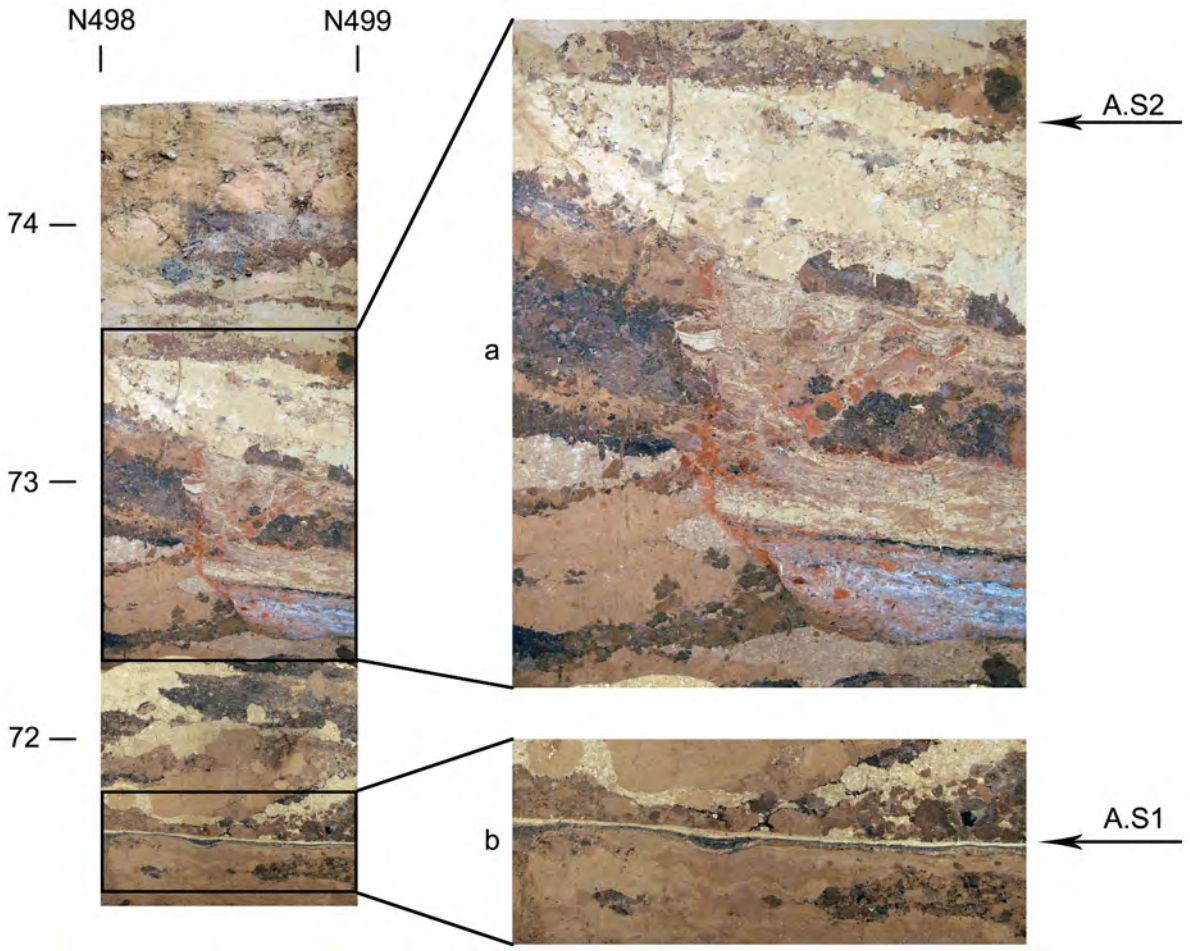

Figure 2.11. Partial photomosaic of the western wall of A1.1. (a) Portion of the profile showing A.S2 and the bathtub-shaped pit extending down from it. (b) Portion of the profile showing the veneered A.S1 (from Kassabaum et al. 2014:Figure 8).

A.F2 was over 2 m thick (71.1–73.5 m) and consisted of contrasting basket-loads. Much more ceramic material was collected from this stage than from A.F1. At the beginning A.F2, basketball-sized balls of gleyed, grey clay were placed on A.S1 (Figure 2.12). Clays of this type are common only on the floodplain and thus the clay must have been procured and transported some distance (Sherwood 2008); the spherical shape of these deposits indicated they were placed into the mound while wet. Again, such construction features may have had symbolic and/or practical purposes. The inclusion of river clay in the Feltus mounds may refer to specific origin myths and customs surrounding world renewal (Cummings 2008).[7]

A.S2, which capped this mound stage, did not show clearly in the excavation profiles, and showed only faintly in the DMS data. Its existence is undisputed, however, because of a large, bathtub-shaped fire pit that extended down from it (Feature 145) (Figure 2.11a). The steep walls of the pit were heavily fired and the base of the pit contained stacked deposits of ash as though the feature was used, then cleaned out and used again. This degree of burning shows clearly in the DMS data and the similar signature just to the west of the excavated anomaly is almost certain to be a second such pit on A.S2.

Though only clipped in our excavation unit, horizontal coring showed that Feature 145 resembles ten pits at Greenhouse in both dimension and character of fill (Ford 1951:104-105). The pit measured approximately 2 m along the north-south axis and 1 m along the east-west axis. Similar pits have been found at Baytown period sites including Gold Mine, Marsden, and Neely (Belmont 1982; Bitgood 1989:62; Lee 2010:138). At neither Feltus nor

[7] "Though there are many stories and varying details, the story of the Earth Diver is essentially this: In the beginning, there was only water. A council of creatures from the air and water meets and decides that there should be land. The Creek story has it that a dove first attempted and failed to find land, the Yuchi that the beaver and the otter failed. But all traditions agree that the crawfish was successful. The crawfish dove down beneath the water and came up after a long time with dirt in his claws. According to the Creek text, a ball was made from this dirt. The Earth was made of this ball of wet dirt" (Cummings 2008:1). This interpretation relates to Knight's (1989) idea that mounds among southeastern Indian groups operated as world symbols and that their construction and maintenance was inextricably tied to world renewal.

Figure 2.12. Partial photomosaic of the western wall of A1.1 showing balls of gleyed clay placed on A.S1 while still wet.

Greenhouse were the pits associated with buildings. The location of the pits on Feltus mound summits contrasts with those that occurred around the edges of the plaza at Greenhouse. Ford (1951:104) considered the possibility that these pits represent crematory basins or pottery kilns, but dismissed those explanations due to the lack of charred human bone or broken ceramic vessels. During excavation, Gerard Fowke interpreted the Greenhouse features as "barbeque pit[s] made for the roasting of meats" and Ford suggested archaeological and ethnographic analogies in which similar "fireless cookers" were employed (Ford 1951:104). The abundance of feasting remains at Feltus supports this cooking-pit interpretation. An ash-lined post hole (Feature 144) was identified immediately above Feature 145 in A.F3 and will be discussed in more detail later in this section.

A.F3 raised the mound an additional 1 m (73.5–74.5 m) with relatively clean, yellow loess. Few artifacts were recovered and visible basket loading was minimal. A.S3 was identified in the DMS data as a strong lateral anomaly of high susceptibility in the southern flank profile (see Figure 2.10). Oakfield cores removed in advance of the DMS revealed an ashy layer with burned clay at this elevation. While this burned surface was not encountered in A1.2, there was a subtle but continuous change in fill at roughly the same elevation suggesting that this surface may be more distinct in some locations than others.

A.F4 raised the mound at least another 2 m and the remaining portion was made up of clean yellow loess. So little material was recovered that much of the fill was not screened. No clear evidence remained of A.S4, though there was likely a surface atop this final construction episode. It is possible that some of the late artifacts reportedly recovered from Mound A originate from this surface (Culin 1900).

Though A1.3 and A1.4 were primarily excavated as a means of sampling the submound midden (see below), important stratigraphic information was also uncovered. The stratigraphy in the northern end of A1.4 confirmed the presence of constructional berms in A.F1. These berms also showed in the western and southern DMS profiles (see Figure 2.10). A1.3 and the southern end of A1.4 show significant wash covering the submound midden (Figure 2.13). Made of yellow loess, this wash likely originated from the ultimate or penultimate mound construction stages. Capping the wash was a 15 cm-thick layer of pure, gleyed clay; this same deposit was clearly visible in the southern end of the A1.4 trench (Figure 2.14). Given that this clay must have been procured and transported from the alluvial floodplain below the bluff, it is likely to have had a specific purpose, and the wash directly underlying it suggests the possibility that it was meant to control erosion.

Block A1: Submound Deposits

A1.3 and A1.4 were excavated primarily to sample the submound midden (A1.S0). A1.4 also provided a wider area from which to identify feature patterns on and under the midden; it will be the primary focus of this section, though information from A1.1 and A1.3 will also be included. Because so little material was found in A.F1, a backhoe was used to remove the mound fill in A1.4. The midden deposit itself was excavated by hand in 1 x 1 m units. Twenty-one features were identified on the surface of the midden. Most were areas of surface burning, though possible post holes and pits were also identified (Figure 2.15a–b). The nature of these features indicates regular, short episodes of burning not occurring in formal hearths.

Figure 2.13. North profile of A1.3 showing wash deposits and a layer of gleyed clay overlaying the submound midden.

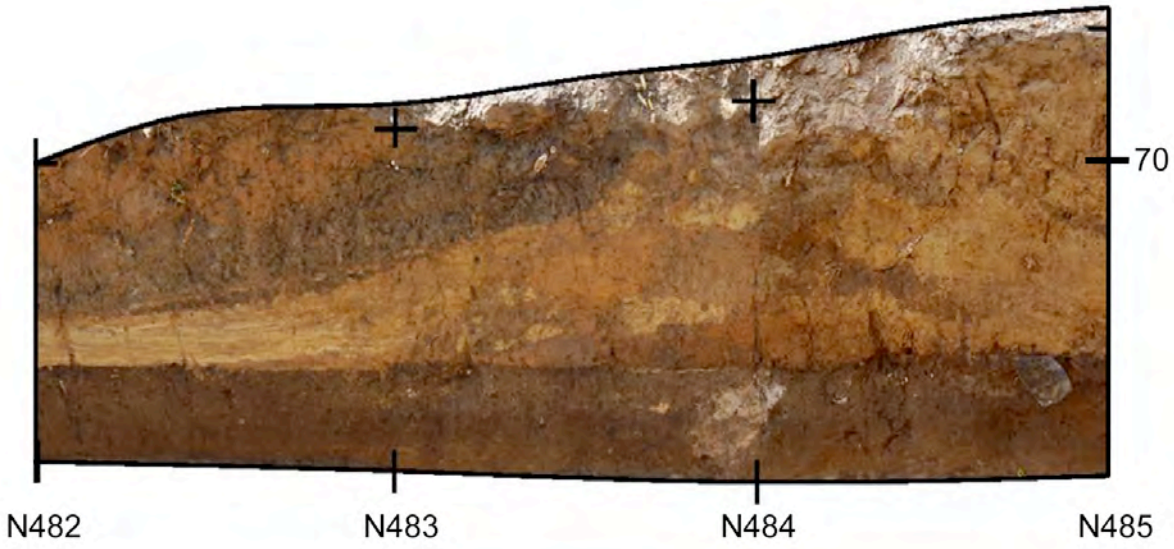

Figure 2.14. Photomosaic of the southern end of the western wall of A1.4 showing the gleyed clay cap overlaying the wash layer on the submound midden (adapted from Steponaitis et al. 2012).

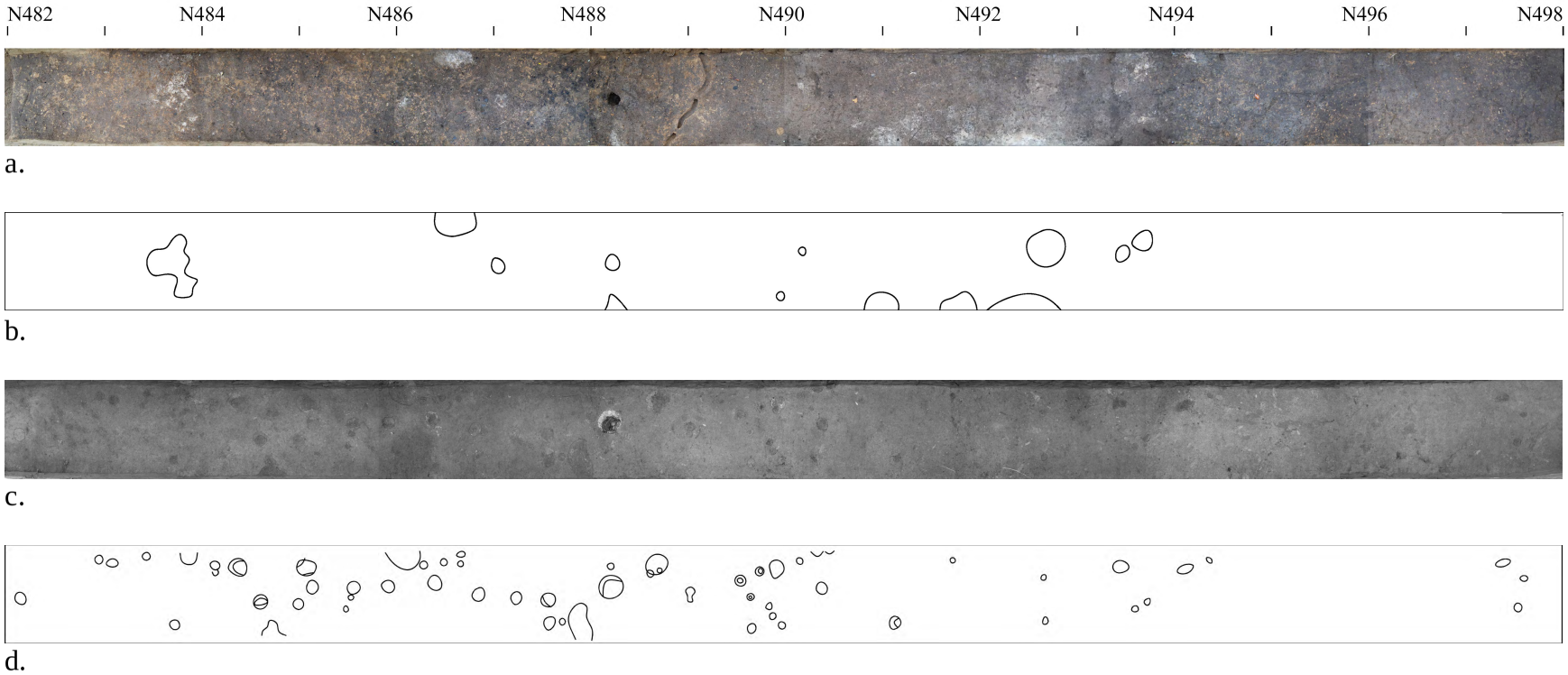

Figure 2.15. Plan view drawings of the A1.4 trench floor. (a) Photomosaic of the surface of the midden showing 21 identified features. (b) Drawing of the surface of the midden pictures above. (c) Photomosaic of the base of the midden / top of the E-horizon showing numerous small post holes. (d) Drawing of the base of the midden pictures above. (Adapted from Steponaitis et al. 2012.)

The surface of the midden was covered in artifacts lying horizontally. In the center of A1.4 (Units N486E533–N488E533), a thin layer of exceptionally dense material overlaid the midden. This refuse layer was so full of fish scales, animal bones, and charcoal that it could not be troweled and was instead excavated using a ShopVac. It is likely that this represents a discrete deposit put in place immediately before mound construction began, as it showed no signs of weathering or trampling and even the most fragile artifacts were remarkably well-preserved.

After the refuse layer was excavated, A1.S0 was removed in 1 x 1 m units. Flotation samples were taken from each unit. The amount of material in the midden was extraordinary with each 1 x 1 m unit averaging 170 (922 g) sherds, 240 (89 g) bone fragments, 13 lithic fragments, and small amounts of fired clay, pebbles, charcoal, shell, and pigment (when screened through half-inch mesh). The unit with the heaviest concentration of material contained 464 (2859 g) sherds, 701 (214 g) bone fragments, and 28 lithic fragments. Though not fully tabulated, quarter-inch and sixteenth-inch material was also collected in massive quantities and included sherd fragments, small bones, fish scales, charcoal, and fired clay. Additional areas of surface burning were identified 4–6 cm below the midden surface. Their presence may indicate a second, temporarily utilized surface within the midden.

At approximately 15 cm below the original midden surface, we hit the buried A-horizon; artifact counts decreased significantly and the soil lightened slightly in color. Our final 15 cm level took us into the sterile E-horizon. Many features became visible upon clean troweling, mostly posts ranging from 5 to 21 cm in diameter (with an average diameter of 11 cm) (Figure 2.15c–d). Without more extensive excavation, it is impossible to know whether

these posts represent the remains of buildings or more ephemeral structures such as screens, scaffolds, and drying racks.

Two posts under and one post within the fill of Mound A deserve specific attention. While removing the mound fill from atop the refuse layer overlaying the midden, we uncovered a circular void, indicating a post pulled immediately before mound construction began. Once the refuse layer was removed, we were able to see that this post hole (Feature 37) was lined with ash (like those that will be discussed from the Mound D area investigations) (Figure 2.16). The fact that this ash was not visible on the surface of the midden indicates that after the post was erected, the refuse layer accumulated rapidly around it. Before this debris weathered, the post was pulled and the first 2 m of Mound A were immediately constructed atop the remaining void. This post hole is differentiated by its size (30 cm), its depth (86 cm), its contents (including shell fragments, a crawfish claw, and river-worn pebbles), the fact that it is lined with ash, and the fact that it leans approximately 10 degrees to the east. A second ash-lined post was identified at the base of the midden in A1.3 and may be a second example of this type of deposit under Mound A. Finally, an ash-lined post (Feature 144) was also found above Feature 145 in A1.1. Though it is likely that this post extended down from A.S5, this surface was truncated in the unit profile and could not be identified. These ash-lined posts and their probable role within the Feltus ritual cycle will be discussed in Chapter 6.

Block A2: Submound Deposits

A2 confirmed the presence of, and sampled, the midden west of Mound A. Beneath the A-horizon was a zone of historically mixed material possibly from the 1993 bulldozing of

Figure 2.16. Feature 37 after the ash-zone appeared, 5 cm below the midden surface.

Figure 2.17. Southern stratigraphic profile of A2, showing thin wash episodes overlaying the midden deposit.

the mound summit. Beneath this were three distinct zones of wash capping the midden (Figure 2.17). At the interface of the wash and the midden, we excavated three areas of surface burning, indicating that this surface was used briefly before the wash covered it. Like A1.S0, the deposit in A2 was filled with ceramics and bone and mottled with fired clay and charcoal. It became progressively thinner from north to south, indicating that our excavation may have been approaching its southern extent. Unlike A1.S0, A2.S0 showed no internal differentiation and sherds from the surface and base of the midden have been refit, indicating that it was rapidly deposited in a single event. Also unlike A1.S0, the base of A2.S0 revealed no post holes or pits suggesting that the area was not heavily used prior to midden deposition.

In addition to this unit, we systematically augered the western toe of the mound at 4-m intervals to map the extent and thickness of the midden. The midden remained at a constant elevation but got progressively closer to the current ground surface as we moved west, eventually being mixed into the plow zone (because less historic fill and wash covered it). The midden disappeared entirely about 25 m south of our A2 excavation block.

Mound B Investigations

Excavation, coring, and geophysical work (ERT and DMS) have provided an adequate construction history of Mound B. Our excavations have also contributed significantly to our understanding of the use of its summits, which differ dramatically from those in Mound A. Five stages of construction were evident and each was capped with a clearly defined floor. The first two stages were topped with yellow and/or gray veneers, the next two showed evidence of post holes and fire-reddened surfaces, the penultimate revealed

both veneering and burning, and the final is littered with daub and relatively late ceramics. Compared to Mound A, there was little in the way of submound deposits.

Within the Mound B area, there were three excavation blocks — B1, B2, and B3 (Figure 2.18). B1 was located on the western slope of Mound B and was excavated in 2006 and 2007. It was made up of two cuts: B1.1, a roughly 8 x 2 m trench running east to west into the western flank, and B1.2, a 2 x 2 m unit on the western edge of the summit. B2 was located on the mound summit and was dug in 2012 as a single 22 x 1 m trench. Because so little material was found in B.F5, this trench was partially excavated with a backhoe. The two surfaces encountered, B.S4 and B.S5, were excavated by hand. B3 was located off the eastern slope of the mound and was also dug in 2012 as a single 1 x 2 m cut.

Block B1: Mound Stratigraphy

B1.1 and B1.2 are the primary excavations on which our understanding of Mound B's constructional history is based (Figure 2.19). DMS data confirmed this understanding (Figure 2.20). Some information from the B2 and B3 excavations are included in this section as they clarified certain aspects of the stratigraphic sequence. Our excavations revealed five mound construction stages (B.F1–B.F5) with developed surfaces defining the beginning and end of each episode (B.S0–B.S5) (see Figure 2.19). Except for the last, each episode raised the mound approximately 1 m. The extent and nature of the floors topping the episodes were explored through ERT (Figure 2.21) as well as traditional excavation. The Mound B surfaces showed more evidence of use than those in Mound A with post holes, burned surfaces, and flank middens indicating the presence of wooden structures and other activity areas.

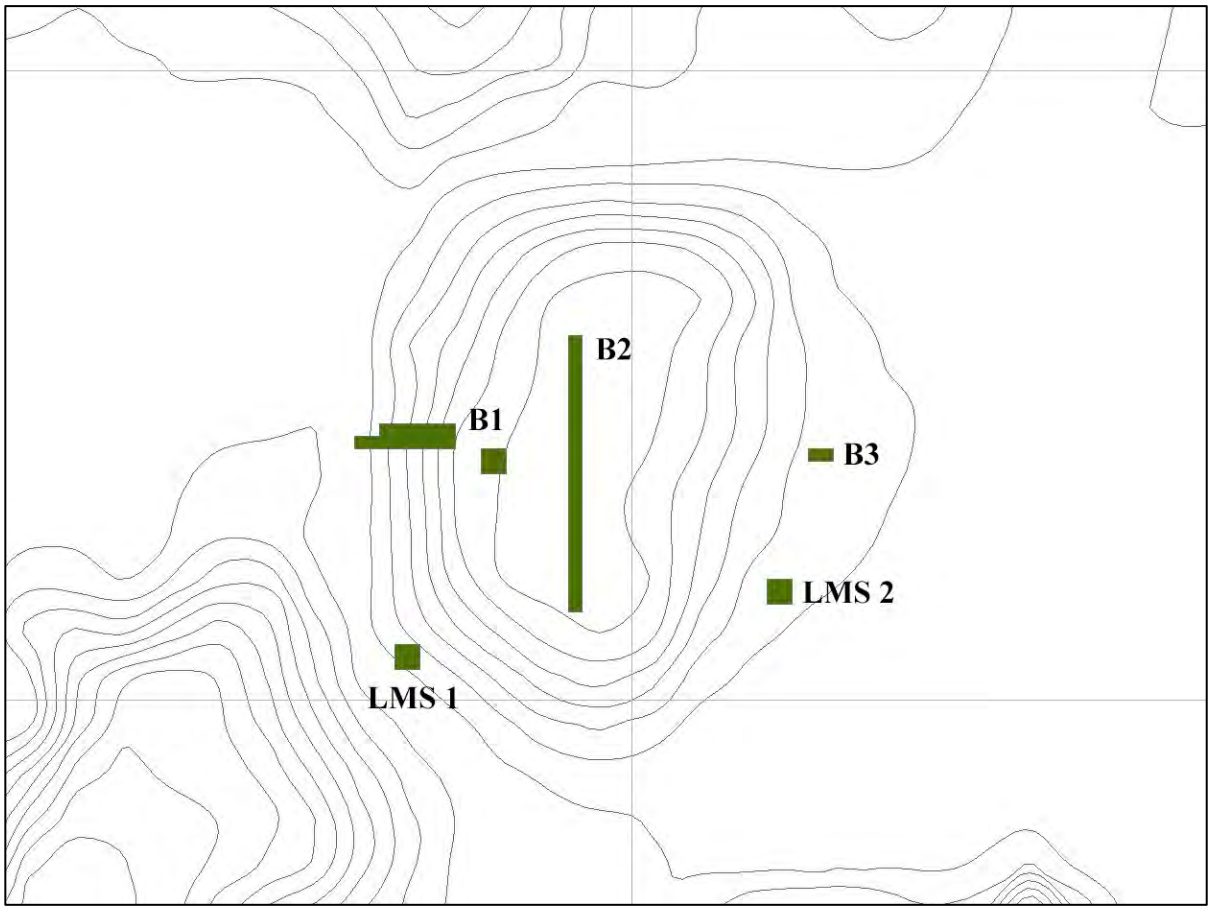

Figure 2.18. Detailed topographic map of Mound B at Feltus showing 2006–2012 excavation units, as well as the 1971 LMS excavation units.

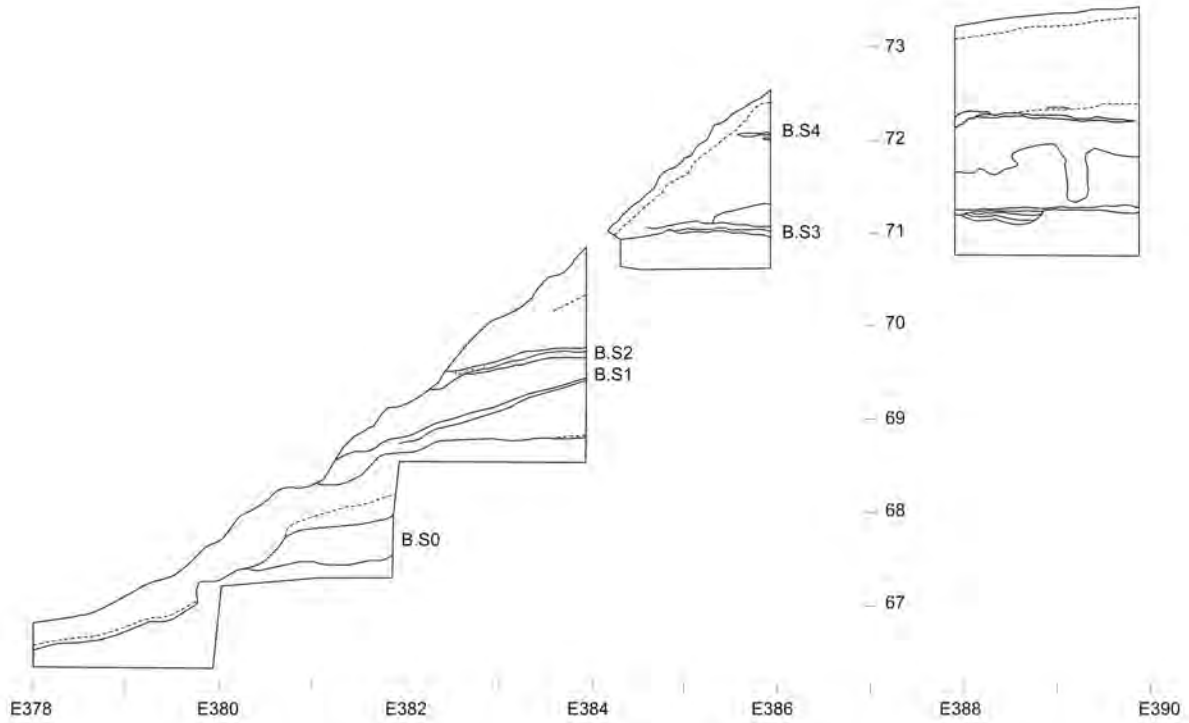

Figure 2.19. Eastern stratigraphic profile of B1.1 and B1.2 showing surfaces (B.S0–B.S4) (adapted from O'Hear et al. 2012).

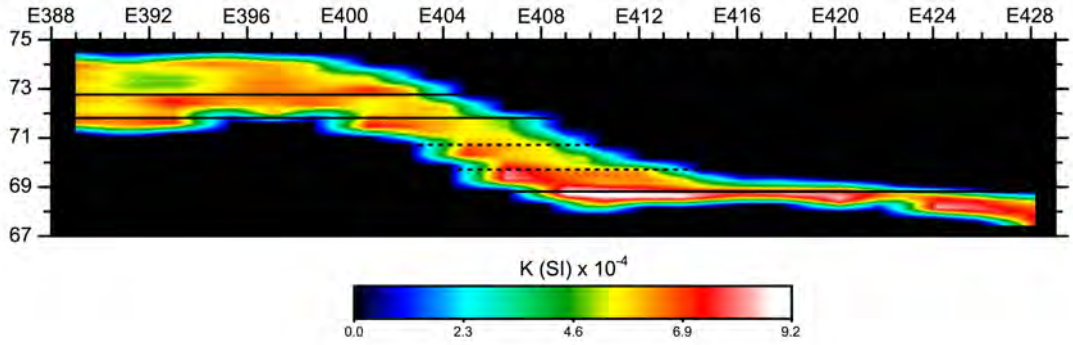

Figure 2.20. Down-hole magnetic susceptibility data from the eastern slope of Mound B. Solid black lines indicate floors identified via excavation (B.S0, B.S3, B.S4). Dotted lines indicate additional floors identified in the geophysical data (B.S1, B.S2) (from Kassabaum et al. 2014:Figure 4).

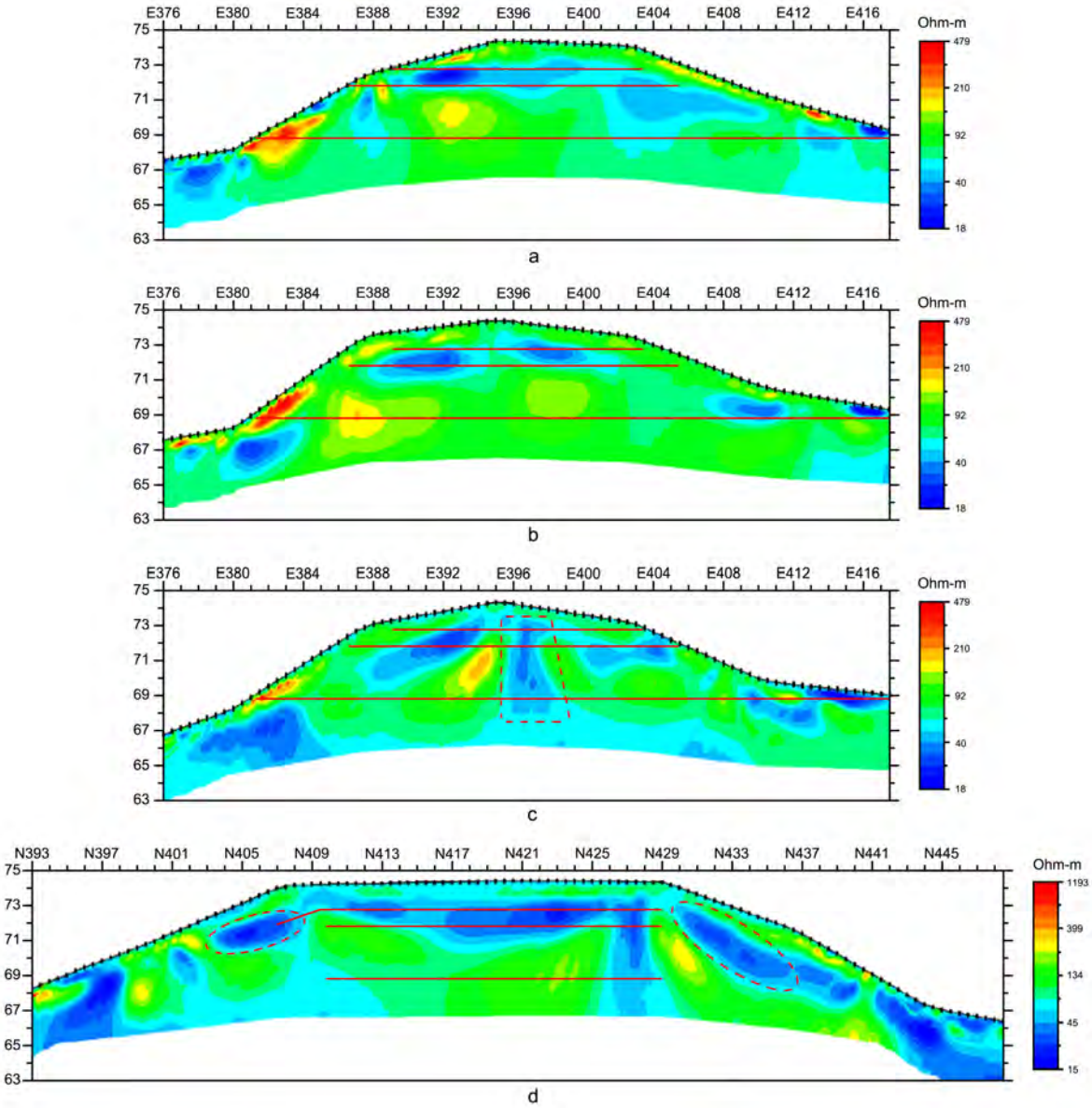

Figure 2.21. ERT pseudosections of Mound B. Solid lines indicate surfaces encountered during excavations. Dashed lines surround confirmed and possible flank middens. (a) East–west transect 1. (b) East–west transect 2. (c) East–west transect 3. (d) North–south transect 4. (From Kassabaum et al. 2014:Figure 3.)

The premound use of the Mound B area was represented by a buried A-horizon containing little material (B.S0). This horizon was also encountered in B3 and appears in the DMS data as a linear area of high susceptibility at an approximate elevation of 68.8 m (see Figure 2.20). Our excavations in B1.1 revealed evidence of activity on this premound surface (Figure 2.22). In N421E380, a low spot in the natural ground surface was filled in with a small midden deposit. The fill contained an interesting ceramic assemblage with Baytown period decorative styles (see Chapter 3). This amorphous deposit was surrounded by 13 possible post holes; no patterning was evident among these posts.

B.F1 was approximately 1 m thick (68.8–69.7 m) and consisted of basket-loaded fill ranging from brown to gray. There was charcoal and fired clay mixed throughout the fill, and when compared to the fill in Mound A, it was artifact-rich indicating it came from an area with at least some prior human occupation. B.S1 sat atop this mound stage and consisted of thin layers of light yellow and dark gray silt, possibly purposeful veneers (Figure 2.23a). The yellow silt was clean while the gray contained artifacts and charcoal and may represent small accumulations of midden on the living surface. No features were identified. Though our excavations only clipped the far western edge of the floor, the DMS profiles confirmed that this floor extends across the entirety of the mound (see Figure 2.20).

B.F2 raised the mound an additional meter (69.7–70.8 m) without increasing its footprint. This was a more homogenous fill deposit of light brown silt. Capping it was B.S2, another surface made up of layers of clean yellow and artifact-rich gray silt (see Figure 2.23a). Again, these may represent purposeful veneers. B.S2 also showed one small patch of hard-fired earth that may indicate that parts of the surface were burned. The fact that B.S2

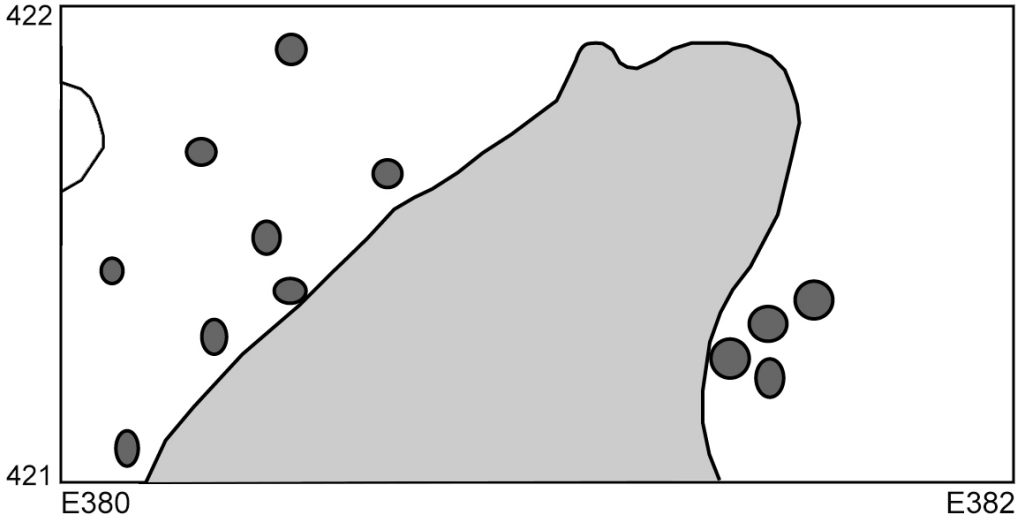

Figure 2.22. Plan view of features encountered at the base of Mound B. Post holes are shaded dark gray, midden-filled depression is shaded light gray.

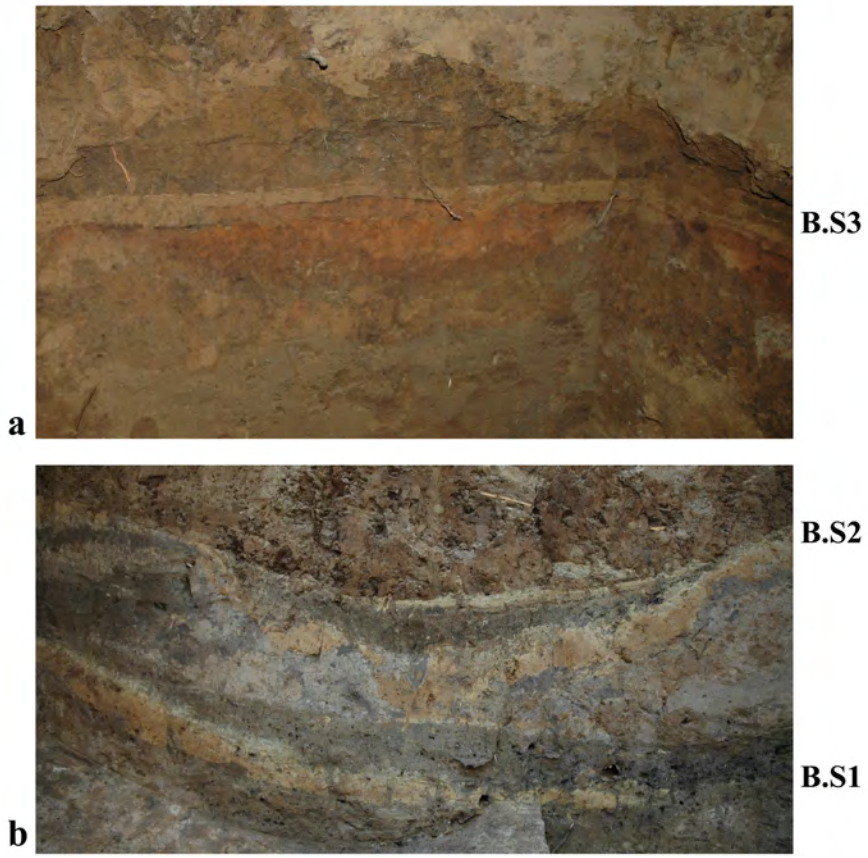

Figure 2.23. Close-up of the surfaces in the eastern profile of B1. (a) Veneers on B.S1 and B.S2. (b) Multiple stacked surfaces making up B.S3.

showed up strongly and consistently in the DMS data supports this possibility (see Figure 2.20).

B.F3 was also approximately 1 m thick (70.8 –71.8 m) and was added to the summit without extending down the mound slopes. It was made up almost entirely of clean, B_t-horizon soil, possibly mined from the area west of Mound B.[8] B.S3, encountered in both B1.1 and B1.2, consisted of multiple, stacked, burned floors with amorphous pit and post features cutting through them (Figure 2.23b). This surface corresponded with the lower portion of a linear, low-resistivity anomaly in the ERT (see Figure 2.21) and a linear high in the DMS (see Figure 2.20). Due to the narrow scope of the excavation, it was impossible to determine how many occupations were represented or which features were contemporaneous. Generally, it appeared this surface was repeatedly burned and extended entirely across the mound summit. Because no structured daub was recovered, the question of whether or not the surface supported a wooden building was left unanswered.

Like the previous mound construction episodes, B.F4 also raised the mound one meter (71.8 –72.8 m). It consisted of two primary zones of fill, one dark, basket-loaded zone sitting atop B.S3 and another of clean, B_t-horizon soil. B.S4, the surface that caps it, is the most completely excavated floor in Mound B and will be discussed in more detail below. Generally, it consisted of a developed mound floor with alternating zones of burning and veneering including large posts and small hemispherical pits. The upper low-resistivity anomaly in the ERT (see Figure 2.21) and the upper linear high in the DMS (see Figure 2.20)

[8] The stratigraphy at the base of our excavations showed that the area behind the mound was cut down nearly a meter; this is why the pre-mound A-horizon appeared so far up our basal profile (see Figure 2.28). Systematic shovel testing that included the plateau to the west of Mound B indicated that A, E, and B_t-horizon soil was removed, artificially flattening and lowering the area behind the mound. In addition to providing fill, this would have had the effect of making the mound appear taller when viewed from the west. Though there is no way to determine for sure whether this fill was used during the construction of Mound B, its proximity and the large amounts of clean, B_t-horizon soil included in B.F3 and other construction episodes makes it likely.

correspond with this surface. A flank midden extends downslope from the southern end of the mound and ERT data suggest that a similar midden exists at the northern end (see Figure 2.21).

B.F5, the final episode of construction on Mound B, differed from the previous episodes. First, it raised the mound nearly 2 m (72.8 –74.5 m), making this episode twice the thickness of the others. Second, excavations in the southern end of B2 revealed that B.F5 more closely resembled Plaquemine mound building practices in that it consisted of a mantle laid over the entirety of the mound structure rather than a layer covering only the summit (Belmont 1967).[9] This section of the profile further indicated that a berm (like that used in the first stage of Mound A) was used in the latest stage of Mound B (Figure 2.24a). The fill used in this stage consisted of zones of basket-loaded gray and relatively homogenous B_t-horizon fill; relatively few artifacts were recovered. Unlike Mound A, we have a good sample of material from the final summit of Mound B (B.S5). The top 15 cm of B2 were hand excavated and large amounts of structural daub (i.e., with cane impressions) and relatively late ceramics indicate the final mound surface supported a wooden building. It is likely that this building was burned at the end of its use-life.

Block B2: Summit Use

B2 is a 22 x 1 m trench excavated to explore the nature of summit use on Mound B (see Figure 2.18). The first 15 cm were hand excavated to explore B.S5, then a backhoe was

[9] Though this pattern is not well discussed in the literature (cf., Belmont 1967; Jefferies 1994), it is more broadly recognized among LMV archaeologists (Vincas Steponaitis, personal communication). Moreover, the descriptions of the profiles from Greenhouse support the belief that Coles Creek mounds show a “pancake” or stacked method of construction (Ford 1951:32-36) while the descriptions of Plaquemine mounds such as Emerald clearly demonstrate a mantle method (Cotter 1951:21). Our excavations at Feltus, and particularly the shift in construction practices during the end of the Mound B construction sequence, provide a great deal of support for this pattern.

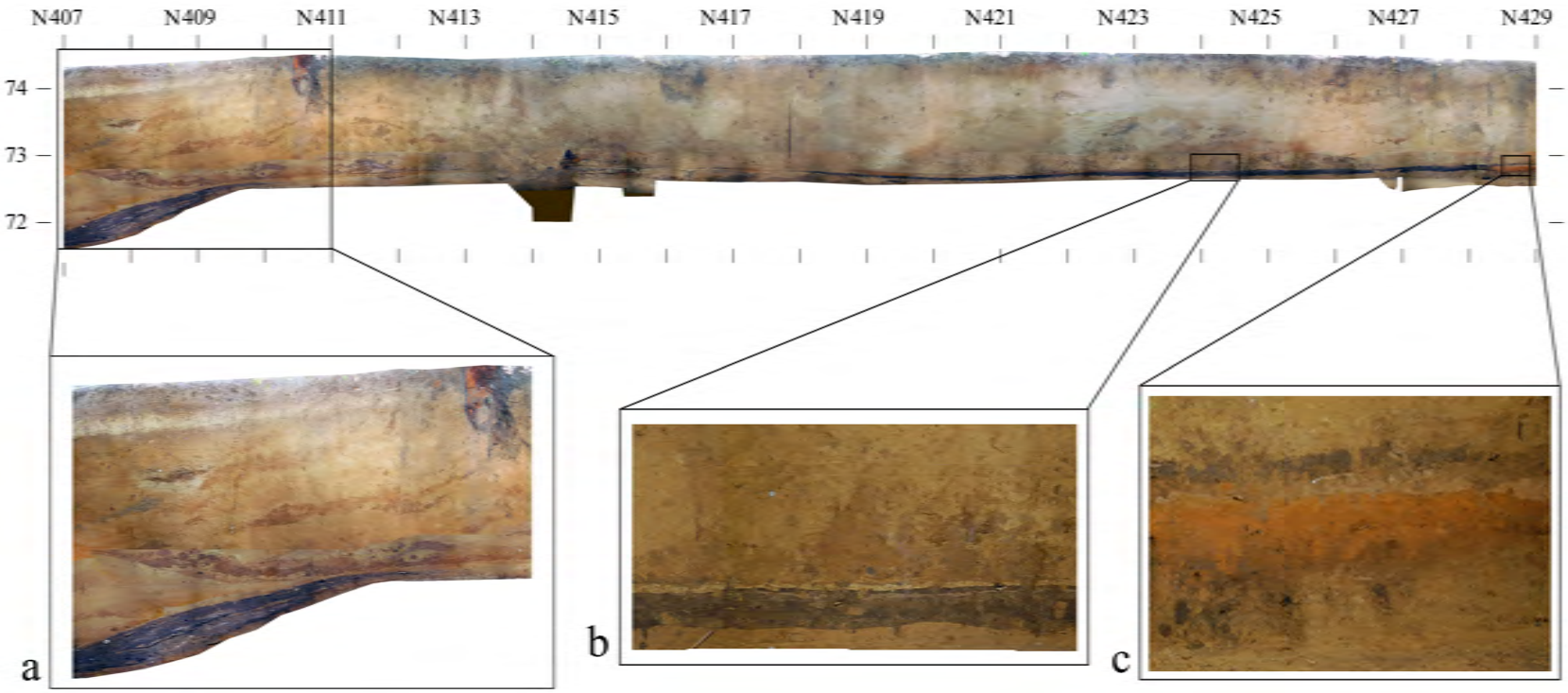

Figure 2.24. Photomosaic of the western profile of B3. (a) Close-up of the southern end of the trench showing the berm method of construction and flank midden. (b) Close-up of B.S4 showing surface veneering. (c) Close-up of B.S4 showing surface burning. (Adapted from O'Hear et al. 2012.)

used to remove the fill in B.F5 to an elevation 20–30 cm above B.S4. Because so few artifacts were recovered from B.F5 in the B1 excavations, this fill was not screened. The fill just above B.S4 and the surface itself were removed by hand.

The first level of excavation in B2 relates to the final use of Mound B (B.S5). Though no intact mound floor was identified, the artifacts recovered relate to the final occupation of the summit. The ceramics from this occupation differ from the other contexts at Feltus and indicate that it is one of the latest contexts at the site. Moreover, it is the only context from which we have definite evidence of burned wooden buildings, because, as mentioned previously, large quantities of daub showing cane impressions were collected. No features were identified in plan view; however, once we excavated the trench, a number of features originating on this surface were identified in the profiles, including post holes, large pits, and two burials. It is likely that the dry, baked condition of the mound summit prevented these features from being identified in plan view. However, broader excavation atop Mound B could reveal post hole patterns or other important feature outlines.

The two burials identified in the trench profile as coming down from B.S5, Features 150 and 151, were examined by Nicholas Herrmann and Molly Zuckerman of Mississippi State University. Feature 150 contained at least two long bones, a cranium, and several unidentifiable fragments. The cranium was from an adult of indeterminate sex and its curvature suggested occipito-frontal flattening. Feature 151 contained four femora and a concentration of at least seven rib fragments, a clavicle, and a humerus, clearly representing more than one individual (Herrmann and Zuckerman 2013). Given the evidence of cranial modification, it is likely that both pits contained human remains of Native origin though

whether they date to the primary occupation of B.S5 or represent intrusive burials is not clear.

B.S4, the penultimate surface, is the most completely excavated summit context at Feltus; however, its interpretation is complicated and would be greatly advanced by wider excavation. Like B.S3, B.S4 was made up of a series of stacked floors. These were impossible to pull apart during excavation, especially as some did not extend across the entire mound summit and others changed dramatically in nature throughout the trench. Some floor areas were veneered with either black or white sediment (Figure 2.24b) while others were heavily burned (Figure 2.24c). This may represent variable use of the summit over time, or variable treatment at the time of its decommission. It is possible that all of the surfaces in Mound B display this level of variability and that their classification here as either veneered or burned is an accident of sampling. Twenty-three features were uncovered during the excavation of this surface, though it was often impossible to determine contemporaneity (Figure 2.25). The features fall into three primary classes — small hemispherical pits, large posts, and a substantial flank midden.

Turning first to the small, hemispherical pits, there were 11 examples that range in depth from 2–28 cm. Many of them contained unusual sediments such as white clay, white silt, purple-hued loam, or red burnt soil; others contained concentrations of charcoal or burnt earth. Though some looked like posts from above, their unusual fills and extremely shallow, rounded bases indicated that they were actually small pits. In the northern end of the trench (N428E395), the largest of these pits (Feature 174) was surrounded by at least six smaller ones (Features 175, 177, 179, 180, 183, and 185), each with a distinctly colored fill (e.g., black, gray, brown, red, and purple) (see Figure 2.25). It is impossible to know what purpose

Figure 2.25. Plan view drawings and photomosaics of the stacked floors that made up B.S4 in B3. (a-b) Level 3. (c-d) Level 4. (e-f) Level 7. (g-h) Level 8. Features are outlined in black, areas of burning are shaded orange.

these may have served, but it is conceivable that they were dedicatory deposits put in place at the completion of a mound stage. Another small pit uncovered in B1 was filled entirely with burned sweet-gum balls and may represent a similar deposit.

Turning now to the posts, there were three deep post features (Feature 158, 182, and 184) associated with an intact section of burned cane (Feature 161) in N414E395. Feature 158 consists of a post hole approximately 95 cm deep with two separate post molds within it (Figure 2.26). The feature was originally identified because a portion of a red cedar post was burned in place and preserved in the next fill episode. The presence of intact burned material in B.F5 demonstrated that the final episode of mound construction began without the post being removed. Below the *in situ* burned post was a void, likely where an unburned portion of the post had rotted after mound fill sealed it. Like Feature 37 under Mound A, this post was leaning approximately 10 degrees to the northeast. A non-leaning post had previously been set in the same hole but was removed at some point and replaced with the leaning post described above. Also like the Mound A post, the base of Feature 158 was lined with ash.

Feature 182 was discovered approximately 1 m east of Feature 158 and also consisted of a post hole and post mold leaning slightly to the north (Figure 2.27). This post was 1.3 m deep, and the fill in the post mold was loose, while the post-hole fill was hard packed. A layer of gray and red, charcoal-rich material overlaid the entire feature indicating that this post was pulled before the next episode of mound construction took place. Feature 184 was discovered approximately 1 m north of Feature 158 and consisted of a 1-m-deep post mold (with no visible post hole) that also leaned very slightly to north. A void above this post suggests that, like Feature 158, it may have been left in place while the mound was constructed around it.

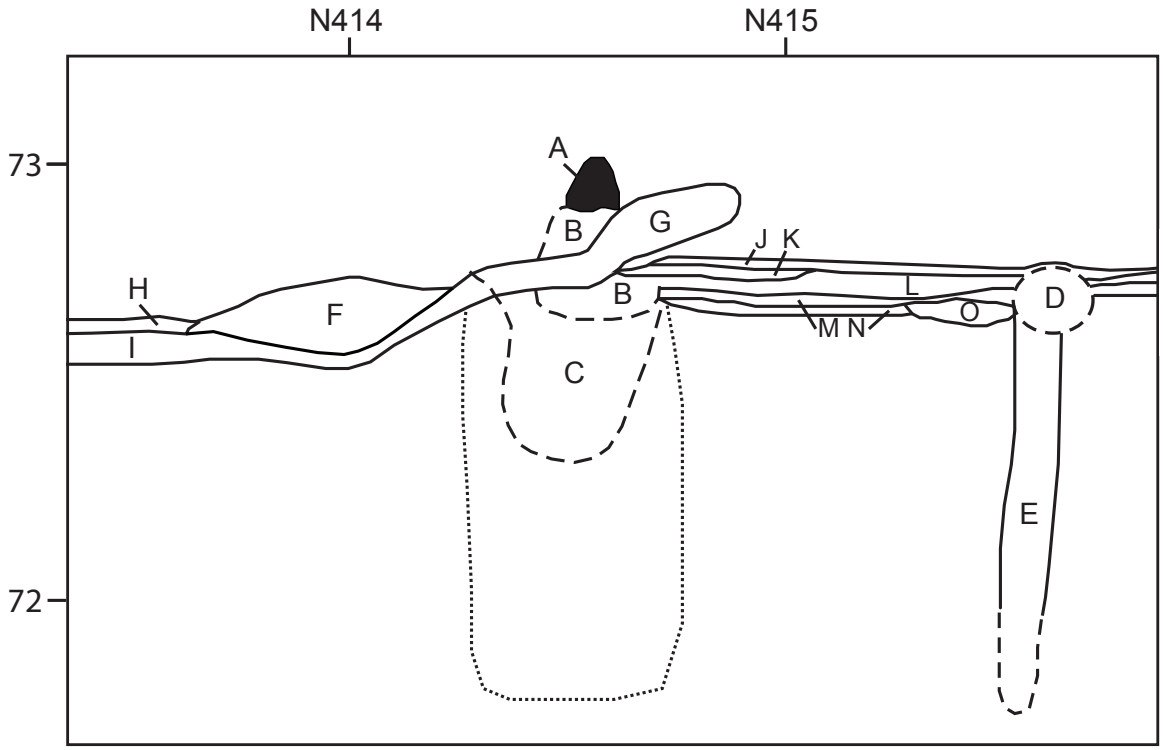

Figure 2.26. Partial profile drawing of the western wall of B.S4 in B3. Key: (A) Feature 158, charred post. (B) Feature 158, void. (C) Feature 158, post hole visible in the wall. (D) Feature 184, void. (E) Feature 184, post hole. (F) Fill in possible drip line. (G) Burned wall fall. (H-O) Stacked black, yellow, and burned red floor deposits. Dotted line represents the extent of Feature 158, which was not visible in the profile wall due to the lean of the post.

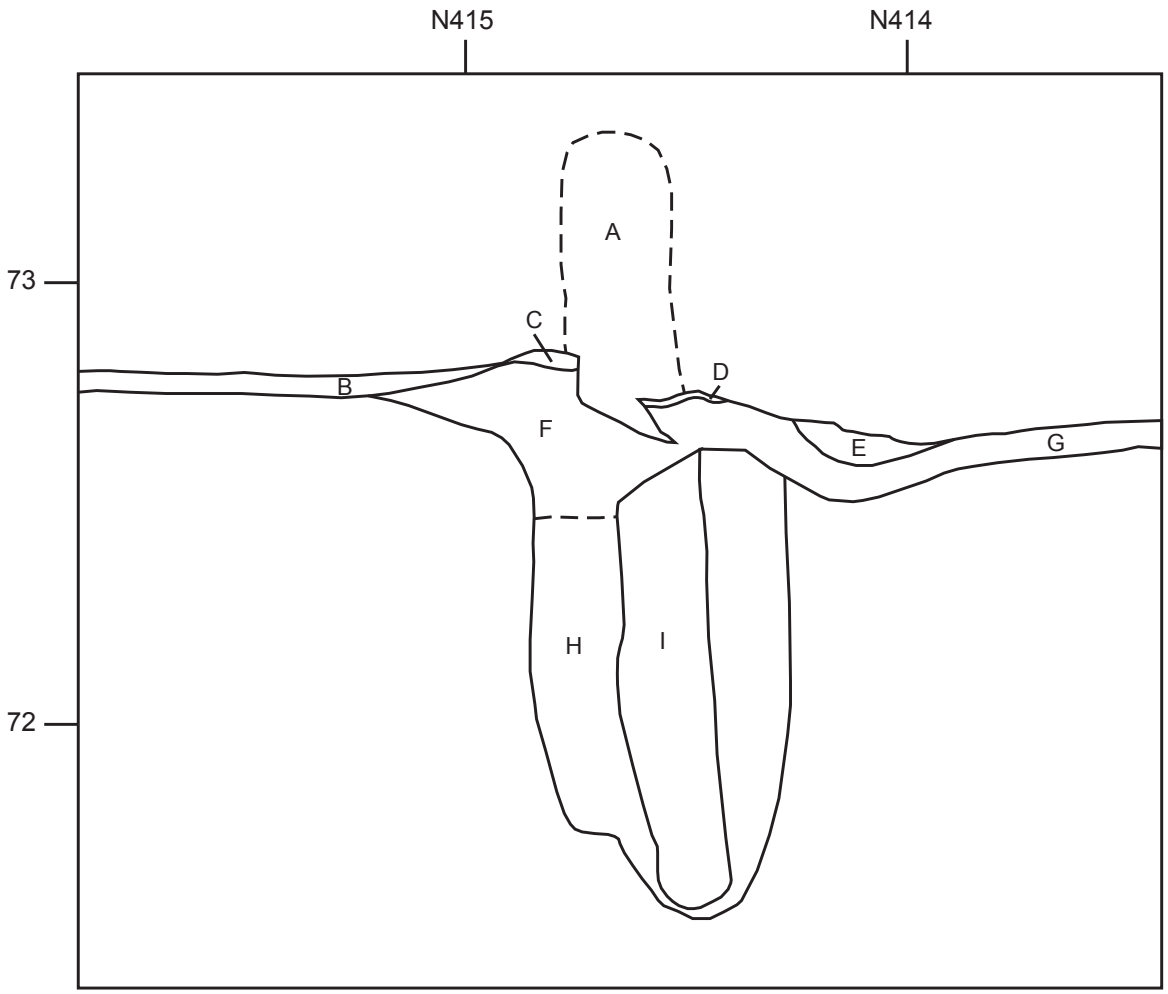

Figure 2.27. Partial profile drawing of the eastern wall of B.S4 in B3. Key: (A) Crumbly area above post hole. (B-C) Burned floor deposits. (D) Burnt cane. (E) Fill in possible drip line. (F) Loose gray fill over post hole. (G) Stacked floor deposits. (H) Consolidated post-hole fill. (I) Loose post-mold fill.

The area of burned earth and cane between these posts has incredibly complex stratigraphy that consisted of stacked layers of black, yellow, and red fill. Within it, some areas were hard fired while others appeared completely unheated. Overlaying these stacked deposits was a 2–5 cm thick layer of burned cane. Though this was initially interpreted as thatch, it may be the remnants of cane matting.[10]

Overall, the features present on B.S4 suggest a complicated history of use. The presence of the three large posts and the possibility of a drip line along two of them seem to argue for the presence of a wooden building, as does an area of burned cane (see Figure 2.25). Differences between the surface treatment north and south of these posts may also indicate a structure, with heavy burning occurring on what would be the inside, and unburned and/or veneered surfaces occurring on what would be the outside.

That said, our excavations failed to reveal conclusive evidence of this type of construction. Burnt earth was abundant in the collections, but no daub was collected. Given the amount of burning on the surface, this lack of daub would suggest that either B.S4 did not support a structure, supported a structure not constructed using wattle and daub, or that the structure was dismantled prior to the burning of the summit. However, we know at least one post was left in place. Moreover, the post features were exceptionally large and deep, one was reset while the others were not, and they all leaned as much as 10 degrees to the north or northeast. Finally, no line of posts that might indicate a wall on the other side of the structure was located further north in the trench. Given this, explaining the post features as parts of non-building constructions such as screens or as standing posts fits more closely with evidence from other contexts at Feltus (see the descriptions of the posts under and in the fill

[10] Layers of cane in a complex sequence of mound construction are also found at Troyville in Catahoula Parish, Louisisana. Like at Feltus, these layers of cane are also associated with large, sometimes leaning, posts, areas of veneering, and widespread episodes of burning (Walker 1936:14-31; see also Figures 7-12).

of Mound A and the discussion of the Mound D area posts)[11] and archaeological interpretations of large post pits at other Woodland sites.[12]

At the southern end of B2, we encountered a large flank midden (Feature 163) (see Figure 24a). This midden extended from B.S4 down the southern mound slope and was entirely covered by B.F5. It shows clearly in the ERT data as a semi-trapezoidal anomaly and this shape suggests that the midden deposit was not spread evenly across the entire southern flank, but that there was a single dumping location from the top of the mound (see Figure 2.21c). Furthermore, the presence of a similar anomaly at the northern end of the mound may indicate a flank midden there as well (see Figure 2.21d). This second feature was just beyond the limits of our excavations. Feature 163 had distinct zones indicating at least two depositional episodes and was dominated by ceramic and faunal remains; however, the ceramic assemblage differed in important ways from the earlier middens at Feltus, with vessels being, on average, smaller and with some showing unique treatment (i.e., red pigment rubbed into the surface decoration).

Block B3: Platform Construction

We excavated B3 to explore the nature of the platform extending eastward from Mound B and to corroborate the LMS findings. Our 1 x 2 m excavation encountered the

[11] It is possible that our trench managed to "thread the needle" between the posts making up the other wall, but this would mean that they were spaced more widely on the northern side of the structure than on the southern side. The post mold patterns atop the Greenhouse mounds certainly show uneven post spacing that is, at times, more than a meter (Ford 1951:Figs. 6, 7, and 10). However, there are summits at Greenhouse both with and without clear structural patterns (Ford 1951:32-37).

[12] Freestanding posts, though seldom recovered archaeologically, were common on Woodland period sites and have been ascribed various functions. For example, at McKeithen and Cold Springs, large posts were used during complex mortuary rituals (Jeffries 1994; Milanich et al. 1984). At Walling and Kolomoki, nonstructural posts were associated with mound summits and interpreted as evidence of scaffolding and feasting (Knight 1990; 2001). At Biltmore and Garden Creek, shamanic paraphernalia suggests that large posts played a role in religious ceremonies (Kimball et al. 2010). Finally, at Range, central posts are found in the courtyards of village areas, signaling a shared community space and marking its center as symbolically meaningful (Kelly 1990).

same strata as the 1971 excavations, showing natural A, E, and B_t-horizons overlain by a thick layer of laminated, yellow slope wash. After this slope wash accumulated, a thick layer of gray clay capped the deposit (Figure 2.28). Like in Mound A, this clay cap immediately followed a period of significant erosion and may have served an anti-erosional function. Combined, our excavation and the LMS investigation suggest this clay deposit makes up much of the platform and confirmed it was an artificial construction.

Figure 2.28. Northern profile of B4 showing significant amounts of wash overlaying the premound surface and then a thick zone of gleyed, grey clay.

Mound C Investigations

Comparatively small excavations and minimal coring have left us with an incomplete picture of Mound C's construction history. For this reason, stratigraphy in this section will be discussed by block rather than area to avoid potential misrepresentation. Our excavations have confirmed at least two construction stages (though a third is likely) and have determined that the platform was added to an already extant mound. While we know that Mound C was a burial location at the end of its life, its earlier functions remain unclear. We assume that the ditch surrounding the mound (Figure 2.29) was a prehistoric feature due to a small, informal excavation that revealed no historic artifacts; however, we do not know if the apparent "causeways" crossing the ditch are historic or prehistoric. In the ancient American South and Midwest, ditches or moats may have served as "spirit barriers," a feature one might expect near a mound containing burials (Bacon 1993; Carr and Case 2005; Hall 1976; Romain 2009:120-122). This interpretation is supported by the presence of a similar feature around the burial mound at the contemporary Smith Creek site in Wilkinson County, Mississippi (Kassabaum et al. 2014b).

Within the Mound C area, there were three excavation blocks: C1, C2, and C3 (Figure 2.30). C1 was located on the eastern slope of Mound C and was dug in 2006 as a single 1 x 4 m cut. C2 was dug in the platform in 2011 as a single 1 x 2 m cut. Finally, C3 was dug at the intersection of the platform and the mound's western slope in 2012 also as a single 1 x 2 m cut.

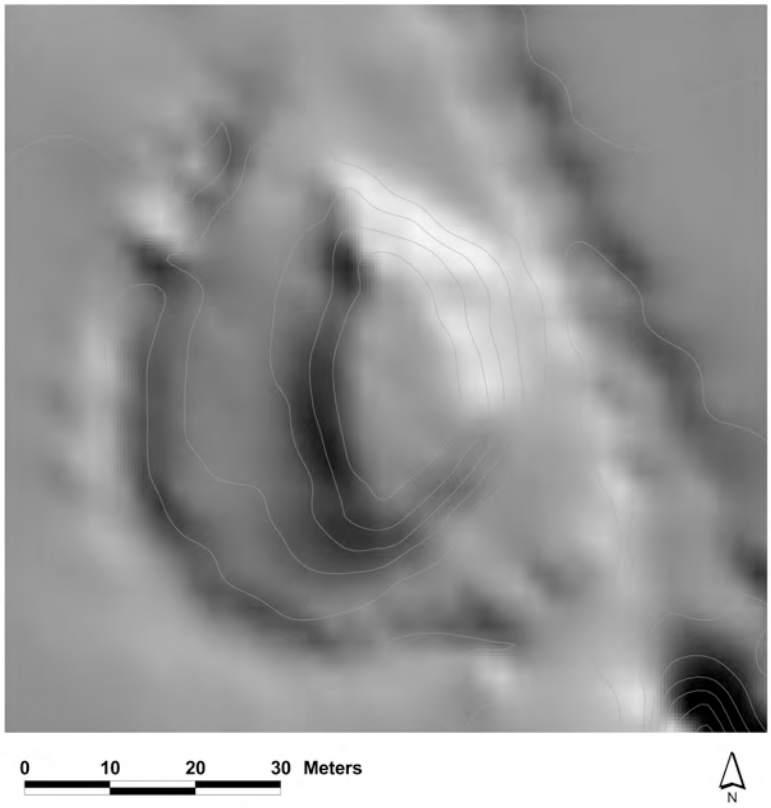

Figure 2.29. Shaded relief map of Mound C showing mound, platform, and ditch(from Steponaitis et al. 2014:Figure 8).

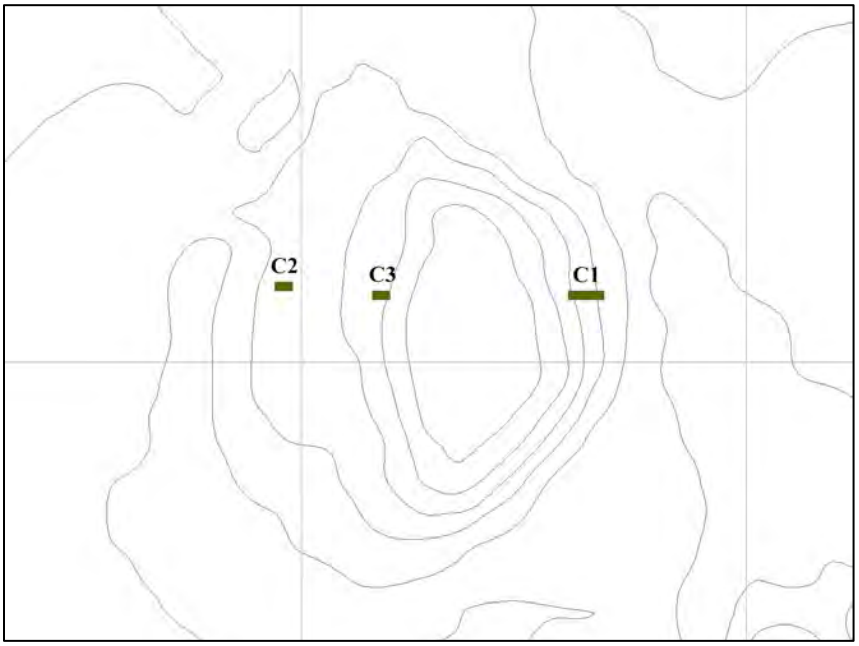

Figure 2.30. Topographic map of Mound C at Feltus showing 2006–2012 excavation units.

Block C1: Mound Stratigraphy

The excavation at C1 showed two distinct stages of construction (Figure 2.31). C1.F1 was heavily basket loaded and contained balls of gleyed clay like those described in A.F2. The dark basket-loads contained many artifacts while the contrasting yellow loads contained none. C1.S1 was a clear break in construction separating this loaded fill from clean, homogenous brown fill above (C1.F2). A small number of sherds sat horizontally on this surface, but few other collections were made. It is likely that an additional mound stage (C1.F3), in which Moorehead encountered Coles Creek burials, exists further upslope, but it was not encountered in our excavations.

The mound fill in C1 sat atop a gray wash layer capping a slightly enriched, buried A-horizon. This submound deposit was less developed than the premound surfaces under Mounds A and B and relatively few artifacts were found. No features were located. It is thus likely that the area on which Mound C was built was not heavily utilized before mound construction began.

Block C2: Platform Construction

This 1 x 2 m unit was excavated into the platform west of Mound C to confirm that the feature was both artifactual and prehistoric. It consisted of approximately 60 cm of mound fill sitting atop a natural soil horizon. The fill contained only prehistoric materials and showed evidence of basket loading, thus implying the platform was a prehistoric construction. Again, no features were found and very few artifacts were recovered from the pre-mound deposits.

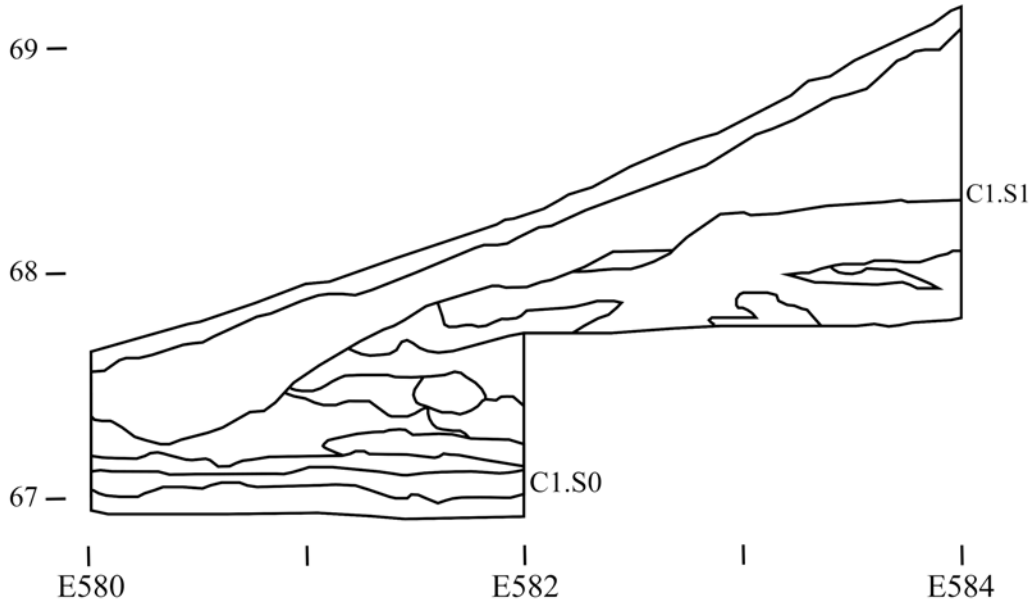

Figure 2.31. Southern stratigraphic profile of C1 showing the buried A-horizon and C1.S1.

Block C3: Mound Stratigraphy and Platform Construction

C3 was excavated at the intersection of the mound and platform. Based on our knowledge from C1 and C2, two possible scenarios existed for the construction history of Mound C: (1) a platform was constructed first and then a mound was added on top of it, or (2) a mound was constructed first and then a platform was added to its side. This excavation answered this question and provided a basis from which to date the construction of Mound C. We were able to confidently determine that the mound was constructed first and then the platform was added. This determination was made on the basis of the stratigraphic profiles showing a mound surface angling downward, separating the mound from the platform, and on the presence of an accumulation of wash at the base of the mound, under the platform (Figure 2.32).

C3 showed evidence of three construction stages. The first stage (C3.F1) was not encountered directly in the excavation, but was indicated by the gray wash deposits at the

base of the unit. The fact that C3.F1 was not visible suggests that, like B.F5, C3.F2 was added as a mantle over the entire mound. Sitting on the surface of this wash layer was another ball of gleyed clay, likely added immediately before C3.F2. C3.F2 made up the bulk of the profile and consisted of zones of basket-loaded fill. Small pockets of wash along the intersections of these zones may indicate brief breaks in construction during the addition of C3.F2. C3.S2 topped this stage and may represent a clay cap like that in A1. As in C1, it is

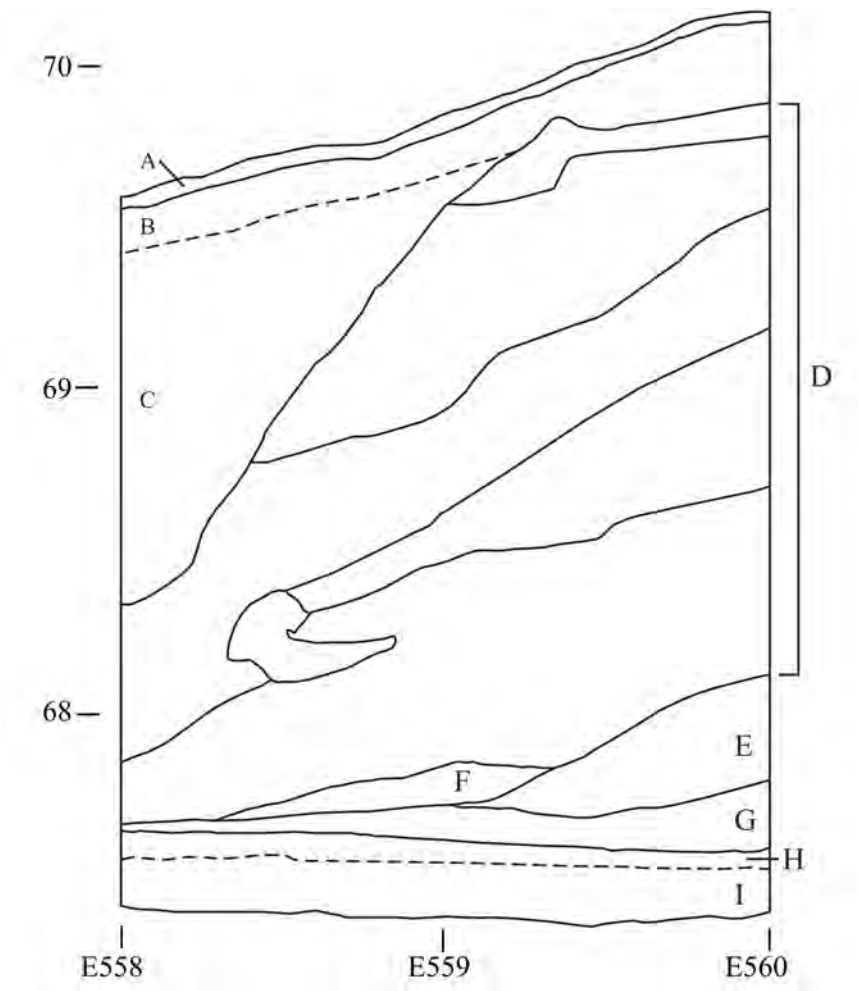

Figure 3.32. Northern stratigraphic profile of C3 showing the angling surface separating the mound fill from the platform fill. Key: (A-B) A-horizon. (C) Platform fill. (D) Mound fill. (E-G) Midden and wash deposits from earlier mound stage. (H) Buried A-horizon. (I) E-horizon.

likely that there is an upper stage to Mound C that was not encountered in this excavation; it would be in this stage that Moorehead uncovered Coles Creek burials. C3.F3 thus encompassed the construction of the platform itself and was more homogeneous than C3.F2. That said, it is possible that the platform was initially added to the mound during C3.F2. In the western edge of the northern wall, C3.S2 flattens slightly, perhaps indicating the earliest surface of the platform. However, because the stratigraphy in C2 showed only one construction stage within the platform, this is unlikely.

Mound D Area Investigations

Moorehead (1932) excavated Mound D and found several bundle burials within its fill suggesting that it was similar in form and function to Mound C. Other than one human tooth in the plow zone, our excavations in the mound's former location have revealed no evidence of fill. They did, however, reveal evidence of a great deal of activity taking place in the area surrounding the mound's former location, both before and after the mound was constructed. Immediately south of Mound D, Coles Creek people dug and then refilled a massive borrow pit (Figure 2.33). Excavations and augering suggest that this feature is over 3 m deep, 60 m long, and 20 m wide. While it was likely connected to the construction and use of Mound D, the nature and timing of that relationship is still unclear.

Also near Mound D were several massive pits (see Figure 2.33). One was 6 m in diameter, 1.6 m deep and full of animal bone and ceramic refuse. The character of this refuse suggested rapid dumping, with pot breaks and partly articulated deer bones. We also recovered three figurine fragments from this feature indicating the inclusion of ritual refuse. The other large pits were filled more gradually and their function is still unknown. A thick

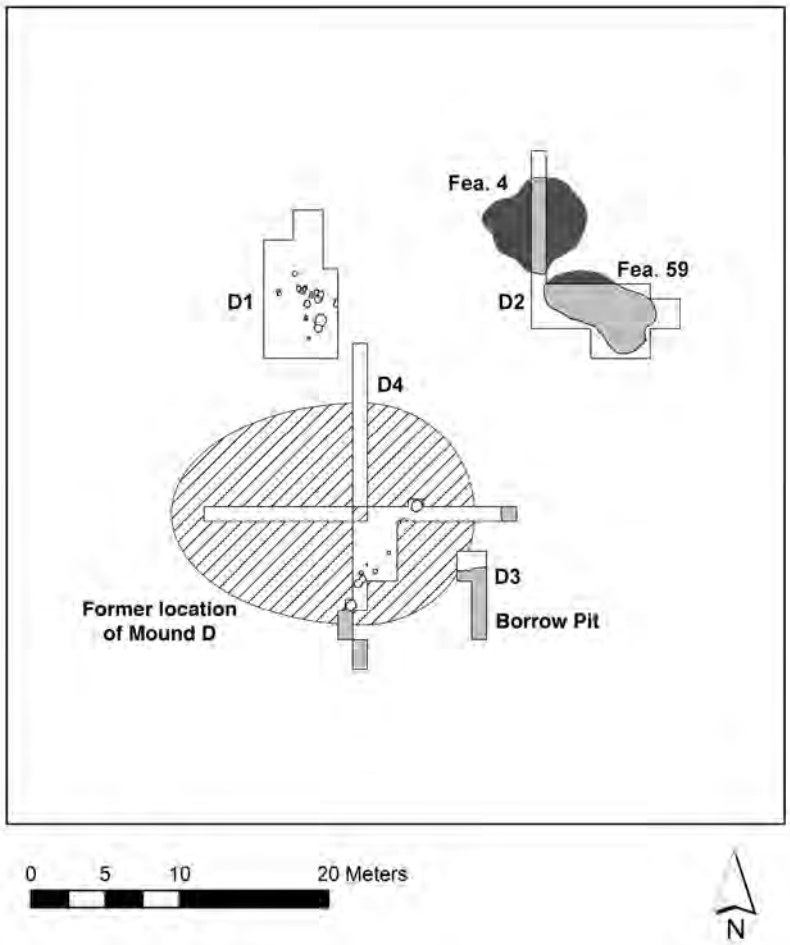

Figure 2.33. Map of the South Plaza area showing the former location of Mound D, 2006–2012 excavation units, Feature 1 and associated concentric posts, the outlines of Features 4 and 59 based on their signatures in the geophysics data, and our trenches into the borrow pit (adapted from Steponaitis et al. 2012).

sheet midden covers the entire area. Like Feature 4 beneath it, this midden also appeared to have been rapidly deposited as primary refuse, as it contained intact portions of animal skeletons and showed no evidence of breaks during its formation. It also contained numerous pipe fragments, possibly indicating that ritual activity also contributed to its formation.

Finally, the area beneath and around Mound D contained a number of large, freestanding posts (see Figure 2.33). The fill packed around many of these posts was unusually rich containing charcoal and ash as well as broken ceramic pipes, bear and deer

bones, and in one case the bones of several infants. The posts appear to have been planted, pulled, and plugged, perhaps as part of a repeated ritual cycle.

This area contained four excavation blocks: D1, D2, D3, and D4 (see Figure 2.33). D1, excavated in 2006 and 2007, sat directly north of the mound's former location and was a 42 sq m excavation centered on Feature 1, a large post hole discovered in 2006. D2, excavated in 2006, 2007, and 2012, was approximately 10 m east of D1 and centered over a series of large magnetic anomalies identified during our geophysical survey. It consisted of one 1 x 10 m cut across Feature 4 and a 36 sq m excavation over Feature 59 and the associated midden. D3 was a 6 x 1 m cut into the large borrow pit south of Mound D's former location, dug in 2007 and 2012. Finally, D4 consisted of four 1-m-wide trenches centered on the mound's location. Dug in 2010, the trenches extended approximately 10 m from the mound's hypothesized center in the cardinal directions.

Block D1: Post Features

During the 2006 shovel testing, we encountered an unusual feature located just north of Mound D's former location (Feature 1). The feature consisted of three zones — a brown "plug" surrounded by an ashy zone with a dark, clayey deposit underneath (Figure 2.34). Looking at its depositional history in more detail, the feature followed a clear trajectory: first, Coles Creek people dug a large hole — 78 cm in diameter and at least as deep. Following excavation of this pit, they lined the bottom of the hole with a dark clay-rich soil, which they would have procured and transported from elsewhere. Along with this lining, they deposited the partial remains of at least 4 young children. Following this, a large post, nearly 40 cm in diameter, was set into the hole and surrounded by ash. This ash closely resembled

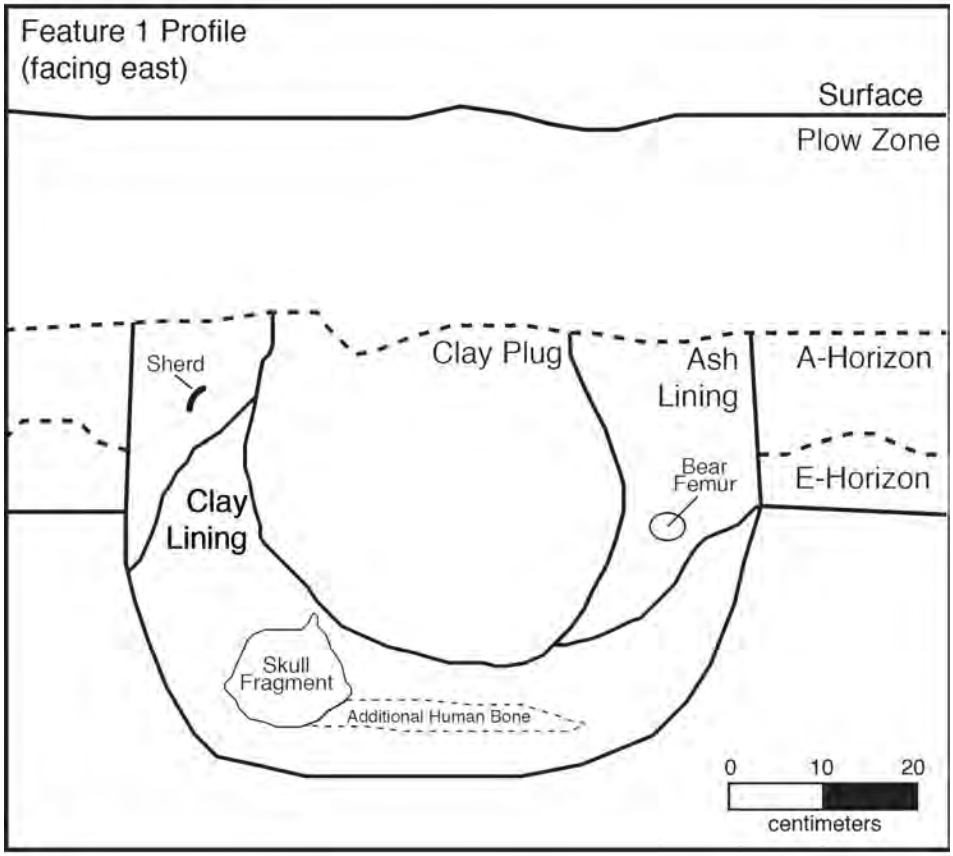

Figure 2.34. East profile of Feature 1 showing the concentric nature of the deposits and unusual inclusions (adapted from Nelson and Kassabaum 2014:Figure 5).

the ash in the base of the bathtub-shaped pit in Mound A and presumably represents the remains of one or more eating events, as it contained fragmentary ceramic vessels, floral, and faunal remains. The ashy lining also contained a bear femur and metacarpal. After the post was set, some sort of post-related ritual activity presumably took place (the nature of these activities are discussed in Chapter 6). Following the termination of this activity, the post was removed and the hole was immediately filled with a deposit of clean, brown clayey soil.

To better understand this feature, we conducted additional excavations in the vicinity from 2007 to 2012. These excavations revealed many other features that resembled Feature 1 in form, though not always in scale. Proceeding on the assumption that such a number of

posts were probably part of a large building, we tried chasing wall patterns, but failed to find any. The lack of wall alignments, combined with the unusual material inclusions and the fact that several posts were repeatedly reset while others were not, led us to the conclusion that these posts were freestanding. These posts will be discussed later along with additional examples uncovered in D4.

Block D2: Large Pit Features

The radiocarbon date from a post in D1 (Feature 1) was identical to one from a nearby pit full of animal bone and ceramic refuse that was originally identified in the 2006 geophysical survey (Feature 4). Just southeast of Feature 4 were Features 59 and 143, two earlier pits with distinctly less material that Feature 4. Overlaying these features was a dense sheet midden; when possible, this sheet midden was excavated separately and feature outlines were determined. When they were clearly discernable, we dug each feature in natural levels, separating by zones. Large, undifferentiated zones were excavated in arbitrary 10 cm levels to keep some vertical control.

Feature 4 was 6 m in diameter and over 1.5 m deep (Figure 2.35). At least four zones of fill were identified, though all were equally rich in artifactual and organic material. The excavated portion of this pit contained well over 2,000 sherds, 100 bones and bone fragments, and 200 stone fragments, along with charcoal and fired clay (when screened through half-inch mesh). While ceramic and bone still dominated the assemblage by weight, it is important to note that this pit contained the most stone artifacts of any context at Feltus. The character of the refuse in Feature 4 suggested rapid primary deposition, with *in situ* pot breaks and partly articulated deer bones. If our trench is ever expanded to include the whole

feature, it may uncover one of the best collections of reconstructable Coles Creek vessels in existence.

Feature 59 was over a meter deep and consisted of at least 15 distinct fill zones, some which appeared to have washed in (Figure 2.36). It is possible that this pit remained open for long periods of time and was filled only sporadically. Even in the non-laminated zones, very few artifacts were recovered and the pit's function is thus difficult to ascertain. Feature 59 contained 150 sherds, 34 bones and bone fragments, and 8 pieces of stone. The diagnostics from this assemblage suggest that this deposit predated the Coles Creek occupation of the site. Feature 143 was similar in nature to Feature 59, though it only reached 48 cm in depth. It was also likely pre-Coles Creek and had three primary fill zones, all nearly devoid of material. After the pit was abandoned, it was left open allowing many thin layers of wash to accumulate before the overlaying midden was deposited. Variations in the subsoil depth at the edges of our 2012 excavations suggested that additional pits may be uncovered with broader investigation.

The sheet midden that overlaid this complex of features was comparable to A2.S0. It was approximately 40 cm thick (thicker in areas where it was filling low spots on top of earlier features) and is of unknown extent. Its geophysical signature indicated it was at least 8 x 3 m in extent, though our excavations show that it extended farther. Above Feature 4, this midden had a single, exceptionally rich zone. Over Feature 143, it had two zones with a lighter layer above the exceptionally rich one. The darker zone appeared to have been deposited in a single event, with no breaks visible in the stratigraphy, portions of intact animal skeletons, and *in situ* pot breaks. The nature of this deposit (and Feature 4 beneath it) suggests that large-scale food consumption (i.e., feasting) took place in this area. The

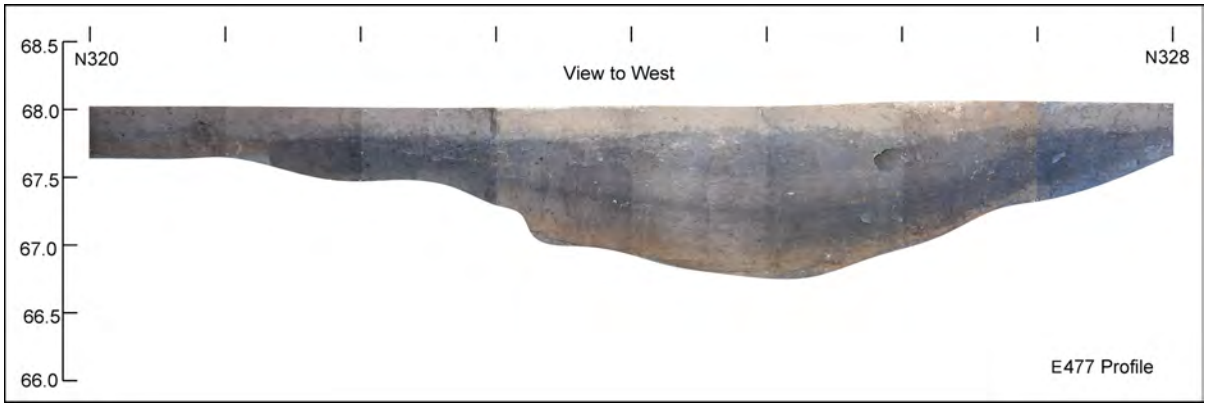

Figure 2.35. Photomosaic of the western profile through Feature 4. Zones are visible as slight horizontal differences in color throughout the fill (adapted from Steponaitis et al. 2012).

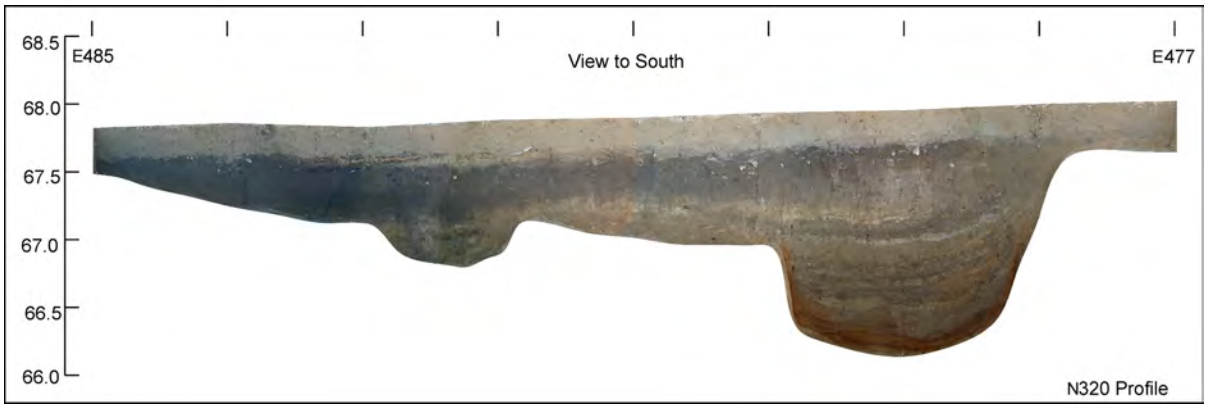

Figure 2.36. Photomosaic of the southern profile through Feature 59. Zones are visible as thin horizontal laminae throughout the fill (adapted from Steponaitis et al. 2012).

inclusion of presumably ritual materials such as pipe and figurine fragments and bear bones in both deposits further supports this conclusion.

Block D3: Borrow Pit

D3 was opened to explore a feature originally identified during shovel testing. Our initial assumption was that it represented another large pit, similar to Feature 59. However, when comparable deposits were encountered in the southern and eastern ends of the D4 trenches, we began to question this assumption. Auguring revealed that all three of these

locations were connected as part of an enormous feature at least 3 m deep, 60 m long, and 20 m wide. In 2012, we used a backhoe to excavate a 6 x 1 m trench into this feature (Figure 2.37).

After Coles Creek people excavated this borrow pit, perhaps as fill for the construction of Mound D, a midden accumulated at its base. Though this midden was not as rich as the midden under Mound A or the one overlaying the feature complex in D2, it contained significant amounts of ceramic and bone material. Both the ceramics and radiocarbon dating suggest that this midden accumulated over a fairly long period of time, but eventually the entire feature was filled with alternating loads of contrasting earth. In some areas, this fill closely resembled basket loading, particularly if the loads were being thrown in from the pit edge. Though it seems likely that the pit was excavated as a borrow pit for gathering the fill for Mound D and left open for a period of time, we do not know why it was subsequently filled, though we do know that it was done in antiquity.

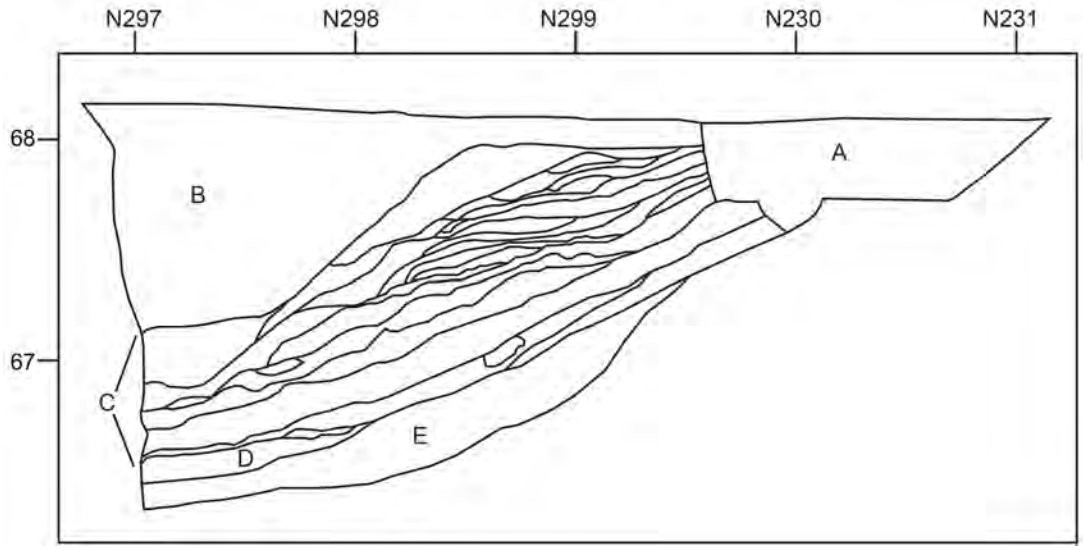

Figure 2.37. Western stratigraphic profile of the D3 trench into the borrow pit. Key: (A) Backfill in 2007 unit. (B) Zone of homogenous fill. (C) Zones of basket-loaded fill. (D-E) Midden deposit lining the base of the borrow pit.

Block D4: Mound D and Additional Post Features

D4 was opened with the express purpose of determining if any portion of Mound D remained. Using Wailes's (1852) survey as a guide, four trenches were placed over the footprint of the mound (see Figure 2.33). These trenches were excavated in 1 x 2 m units and the plow zone was screened through half-inch mesh. Features were clearly identifiable cutting into the E- and B_t-horizons. Most features consisted of large posts like those found in D1 and in the far ends of the southern and eastern trenches, we encountered the borrow pit discussed with D3. This section will focus on what we learned about the mound itself and then on the posts found in D1 and D4.

Throughout D4, the plow zone contained ceramics in addition to stone and bone material. Artifact densities increased as our excavations progressed eastward, going from 0 artifacts per sq m in N305E455 to 172 artifacts per sq m in N305E474. There is a less dramatic pattern in the north-south trench, but artifact counts generally decreased as we moved south (Figure 2.38). The presence of large post features appears to be the primary determinant of high artifact counts in the north-south trench with unusually high artifact counts occurring in units with large features. The same pattern did not occur in the east-west trench. It is more likely that the primary determinant of artifact count in the east-west trench is the likelihood that mound fill was mixed into the plow zone. Excavation profiles and augering were used to determine the depth of natural soil horizons throughout D4. The north-south trench showed that the natural soil horizons closely paralleled the current ground surface while the east-west trench showed that the natural soil horizons gradually became closer to the current ground surface moving eastward (Figure 2.39). The plow zone in the eastern end of the trench (which is outside the estimated circumference of Mound D)

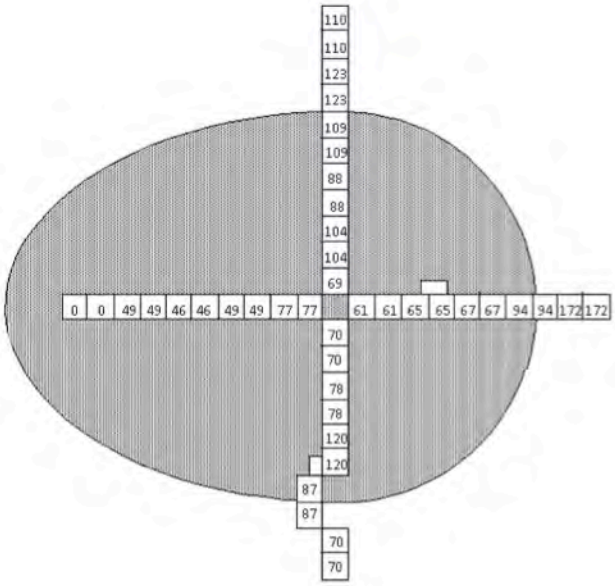

Figure 2.38. Artifact densities from plow zone contexts in D4 showing a dramatic trend from fewer to more artifacts moving west to east and a slight trend from fewer to more artifacts moving south to north (from DeMasi 2010).

a

b

Figure 2.39. Profile photomosaic and drawing based on measurements between soil horizons in D4. (a) North-south trench showing consistent horizon depths and plowing. (b) East-west trench showing that plowing in the eastern end of the trench destroyed the E-horizon while some remaining mound fill may have protected the natural stratigraphy in the western end such that the plow zone left the E and A-horizons intact. Orange represents the unexcavated B_t-horizon, gray represents the unexcavated E-horizon, both identified through coring. (From Kassabaum et al. 2011.)

entirely destroyed the E-horizon; whereas in the western end of the trench (where the tallest portion of Mound D would have been), the plow zone left the E-horizon and most of the original A-horizon intact. This suggests that some mound fill still remained when the field was plowed, adding additional elevation to that portion of the ground and protecting the natural soil profile beneath it. A human tooth was recovered from this area during shovel testing in 2006 and provides additional support for the idea that some mound fill was plowed. Combined, these lines of evidence support the notion that Mound D was a burial mound located precisely where Wailes mapped it. While artifacts from the plow zone are our only direct archaeological evidence of Mound D, this excavation indirectly confirmed its existence, placement, overall design, and reported function.

In the area that would have been under the mound, we identified additional post features that closely resembled those found in D1. In all, we excavated 23 additional post features in D1 and D4 (see Figure 2.33). Of these, eight were less than 10 cm deep and likely represented posts that originated from the platform that Wailes (1852) described as a distinct rise surrounding Mound D. When the platform and mound were destroyed, the post holes on them would also have been destroyed, leaving only the shallow bottom that extended into the original subsoil. This interpretation explains the otherwise puzzling shallow pits while also providing support for the location of Mound D and Wailes's description of its size and shape.

When these shallow posts are eliminated, the remaining 16 posts range in depth from 13 to 50 cm, with three exceptionally deep examples between 60 and 80 cm. They range in diameter from 18 to 58 cm, again with three large outliers. The basic depositional procedure described above for Feature 1 was repeated in nearly all of these posts (Table 2.1). Features 37 and 144, and one additional post under Mound A and Features 158 and 182 on top of

Table 2.1. Summary of the similarities in structure and contents for the D1 and D4 posts (adapted from Nelson and Kassabaum 2014:Table 1).

	Feature															
Post Attribute	**1**	**2**	**3**	**5**	**6**	**7**	**8**	**13**	**17**	**124**	**131**	**132**	**135**	**139**	**159**	**160**
Plugged with clean fill	X		X	X	X	X	X		X	X	X	X	X	X	X	X
Reset with another post	X	X			X			X		X			X	X		?
Ash-lined	X		X	X	X					X	X			X	X	
Clay-lined	X		X	X					?		?	X	X		?	
Mottled zone		X			X	X	X	X	X	X		X	X	X		X
Ceramic inclusions	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Faunal inclusions	X	X		X						X	X		X			
Special inclusions	X										X	X	X	X		

Mound B also shared some striking similarities with this depositional sequence. Of the 16 Mound D area posts over 10 cm deep, 14 were plugged with clean fill; the two that were not plugged were reset with new posts. In total, seven or eight of the posts were reset. Seven posts were lined with ash and as many were lined with clay. A dark mottled zone surrounded ten of the posts. Fourteen contained ceramics and at least seven had faunal remains associated. A smaller number of posts had “special” artifacts. In addition to bear and human remains in Feature 1, the artifacts included pipe fragments, a light-colored, egg-shaped concretion, a lump of clay, and fragment of a tree bark holding a distinct, clean fill.

Plaza Investigations

Three additional locations in the plaza were explored through excavation: X1, X2, and X3 (see Figure 2.7). Block X1, excavated in 2007, was a 2 x 2 m cut in the far southwestern corner of the site on a thin peninsula of land. Small amounts of material were

collected from the plow zone in this location, but no features were uncovered. Block X2, excavated in 2012, was in the far southeast corner of the site. It was centered over a distinct geophysical anomaly that ran the risk of eroding into an encroaching gully. Despite 24 sq m of excavation and a very high concentration of artifacts in the plow zone, no features were identified. It is possible that the sheer amount of fired pottery caused the anomaly in the geophysical data. Finally, X3, also excavated in 2012, was centered over a weak anomaly in the very center of the plaza. Very few artifacts were recovered from the 2 x 2 m cut and a tree tip likely caused the anomaly. Similar anomalies throughout the otherwise clean plaza may also have been caused by similar non-cultural phenomena.

Site Chronology and Use

Fifteen radiocarbon dates from Feltus place it solidly in the Coles Creek period. Here, I will report these dates and provide a starting point for my interpretations of the site's chronology; Chapter 3 will use ceramic data to clarify and refine this chronology. Three distinct clusters of dates suggest that Feltus was utilized episodically rather than continuously (Figure 2.40). These clusters align remarkably well with accepted Baytown and Coles Creek phase designations. The first two clusters contain additional clustering that may indicate important patterns of site use *within* these broad periods.

Use of the site during the Sundown phase (AD 700–850) is represented archaeologically by a series of post and pit features located in the Mound D area. The three dates representing this phase came from Features 1, 4, and 139. Feature 1, the large, ash-lined post pit in D1, returned a mean date of cal AD 762. Feature 4, the large midden pit in V2, returned an identical date. Feature 139, another post that contained unusual inclusions and

was lined with unusual sediments, returned a slightly later mean date of cal AD 813, indicating that there were at least two episodes of setting and removing posts in the area around Mound D during this first phase. It is possible that the midden overlaying Feature 4 is associated with this slightly later episode of activity, though no material was dated from this deposit. These dates indicate that people were using the Feltus landscape by the early Sundown Phase, but stratigraphic relationships between Feature 4 and Feature 59, as well as the ceramic remains from Feature 59 (to be discussed in Chapter 3), suggest that there was also an earlier Hamilton Ridge phase occupation.

A period of mound construction during the Ballina phase (AD 850–1000) followed the initial premound occupation. Portions of Mounds A and B were constructed during this phase, and the borrow pit in the Mound D area was excavated. We have three dates in stratigraphic sequence from the eastern slope of Mound A. Bayesian analysis in Oxcal 4.2 (Ramsey 2009) was used to constrain the results (Figure 2.41). Charcoal from Feature 37, the large ash-lined post hole under the mound, provided a mean modeled date for the premound midden of cal AD 906. Given that we know this feature was covered immediately by the first mound stage, this date also may correspond to the beginning of mound construction at Feltus. Two samples from A.S1 provided mean modeled dates of cal AD 951. This provides an estimate of 45 years between A.S0 and A.S1. No dates were obtained from later in the mound's constructional history; however, a date from the midden southwest of Mound A provided a mean date of cal AD 992. This indicates that the midden under and around the mound was not a single depositional event, and suggests that the southwestern midden represents a flank rather than premound midden deposit. This differentiation is further supported by differences in the character of the two Mound A middens. While Mound A may

have been constructed entirely during the Ballina phase, samples from later episodes may extend this constructional history into the Balmoral phase.

We have four dates in stratigraphic sequence from Mound B, and Bayesian analysis was again used to constrain the results (Figure 2.42). The two earliest samples, from B.F3 and B.S3, returned mean modeled dates of cal AD 935 and cal AD 998 respectively. The date from B1.F3 may indicate that the construction of Mound B began concurrent with or before the construction of Mound A. The two later samples, both from B.S4 (burned cane and bone from Feature 163), returned mean modeled dates of cal AD 1066. This provides an estimate of 68 years between B.S3 and B.S4. Furthermore, the latter two dates fall in the third cluster of activity at the site, meaning that Mound B's construction spanned the Ballina and Balmoral phases. Interestingly, it is approximately at this phase boundary (AD 1000) that the shift in mound building practices from the "pancake" to the "mantle"-style construction occurs.

The final date from the second cluster came from the midden at the base of the borrow pit in the Mound D area. This sample produced a mean date of cal AD 995 and provides a *terminus ante quem* for the excavation of the borrow pit. Importantly, a sample from another part of this midden produced a mean date of cal AD 1082 and provides a *terminus post quem* for the feature's refilling. These dates suggest that the borrow pit was left open for a considerable time while the midden at its base accumulated. It is likely that only after mound construction at the site ceased was the borrow pit refilled.

Mound construction continued at the site during the Balmoral phase (AD 1000–1100) when Mound C was constructed and Mound B was completed. As mentioned above, dates from Mound B's penultimate summit and from the midden at the base of the borrow pit fall

into this phase. Additionally, a sample from the flank midden associated with C3.S1 returned a mean date of cal AD 1073. This date suggests that the mound was constructed entirely during the Balmoral phase, though additional dates from Mound C would help clarify the constructional sequence. Again, this date fits well with the observation that C3.F2 also demonstrates the mantle style of construction.

Post setting also continued during this final phase. A sample from Feature 131, another freestanding post in the Mound D area, returned a mean date of cal AD 1088. This date indicates that the pattern of setting and removing posts in the Mound D area persisted from the earliest stages of the site's use, through its final stages. It seems likely that if samples from other such posts were dated, one would find they span the site's entire occupation.

Coles Creek people thus used Feltus in similar ways for nearly 400 years, but this use may have been episodic. In the first period of intensive use, post-setting and food consumption were the primary activities taking place at the site. During the second period, mound building became important and post-setting and feasting continued. In the third period of intensive use, post-setting, feasting, and mound building all continued, with some mounds being used as burial locations.

CHAPTER 3

CERAMIC STYLE AND CHRONOLOGY

Once ceramic vessels begin being produced, sherds become common artifacts on archaeological sites. On Coles Creek sites in particular, they are the most abundant and informative artifact class. Their analysis is generally used to establish relative chronologies, identify the presence or absence of archaeological cultures at given locations, or identify interregional trade. This chapter and the one that follows describe the ceramics excavated at Feltus, the methods and procedures used to classify and to analyze them, and how they inform site interpretations. The analyses in this chapter enhance the Feltus chronology presented at the end of Chapter 2 and refine our understanding of the Coles Creek chronology overall through stylistic analyses of the Feltus ceramics.

All of the ceramics over a half-inch in size from the 2006–2011 excavations are included in this analysis. Select contexts from the 2012 excavation are also included (i.e., the flank midden in C3, the B2 excavations, and the D3 excavations). Overall, the sample equals over 40,000 sherds. All pottery excavated and collected from the surface at Feltus was classified according to the type-variety system established for the Lower Mississippi Valley (LMV). The first section of this chapter outlines the methods used to analyze the sherds, while the second lays out the types and varieties present at Feltus and describes the sorting criteria used to identify them.

While this is a good starting place from which to craft preliminary interpretations about the chronology of Feltus, an attribute analysis of the ceramic assemblage reveals important distinctions not covered by the current types and varieties. Some sherds from the Feltus assemblage do not neatly fall into discrete groups, but rather represent a continuum of stylistic variation. Moreover, the type-variety system generally emphasizes certain characteristics of the ceramic vessel (primarily certain types of decoration and paste) while ignoring or downplaying others. Finally, the variety descriptions sometimes emphasize some characteristics at the expense of others that best show change through time. The attribute analysis outlined in this chapter allows me to highlight important differences that are not reflected in the traditional types and varieties. When combined with the stratigraphic data and radiocarbon dates presented in Chapter 2, this improved classification is then used to refine the Feltus chronology.

Methods

Coles Creek pottery is grog-tempered, hard, and well made. Both plain and decorated wares are common. Throughout the Coles Creek culture area, there are common trends in decorative methods, though the frequencies of type and varieties vary among sites. Decorative patterns on pottery vessels tend to be abstract, geometric, and often restricted to a band around the rim. Most common are linear incised lines encircling the rim. Curvilinear incised designs with zones of punctations, rocker stamping, or incising are also common. Finally, cord marking is fairly common, though other paddle-stamped pottery is concentrated in the coastal areas.

Each sherd from Feltus measuring at least a half-inch in length was first classified

according to the type-variety system developed by Ford (1951) and Phillips (1970) and expanded by Williams and Brain (1983) and others (Belmont 1983; Bitgood 1989; Brain 1988; 1989; Brain et al. n.d.; Brown 1998; Roe 2010; Ryan 2004; Schilling 2004; Toth 1988; Weinstein et al. 1978; Weinstein et al. 1995; Wells 1998). These data are presented in Appendix 1 (Tables A1.1–A1.3). The same sources were used to assign each variety a temporal span. Additionally, each variety description below lists the decorative modes, rim forms, and vessel forms most commonly associated with the variety both generally and in the Feltus collection. This information was recorded as part of my attribute analysis.

In addition to type-variety classification, vessel wall thickness was recorded for all rim sherds and decorated body sherds. Additional analysis of the rim sherds included recording the following characteristics:

- Sherd height (cm).
- Sherd weight (g).
- Rim treatment: thickened squared, simple squared, simple tapered, simple rounded, thickened rounded, squared out, squared in (Figure 3.1).
- Lip treatment: incised- 1, 2, or 3 lines, incised- perpendicular, punctated line, punctations, or undulating (Figure 3.2).
- Presence and type of lug: Deggan undecorated, Jackson decorated, Jackson undecorated, Joffrion decorated, Joffrion undecorated[1] or other (Figure 3.3).
- Rim angle: strongly out-sloping, slightly out-sloping, straight, slightly in-sloping, or strongly in-sloping (see Chapter 4).
- Vessel form: plate, shallow bowl, simple bowl, deep bowl, restricted bowl, carinated bowl, beaker, restricted jar, necked jar, or pipe (see Chapter 4).
- Rim diameter (cm).
- Portion of rim represented (%).

Some of these characteristics were used in developing the type-variety descriptions below, others were used only in the attribute analysis that follows the defining of decorative categories, and the final set will be discussed as part of the functional analysis in Chapter 4.

[1] Lug types are defined by Belmont (1983) and be either decorated or undecorated. Joffrion lugs consist of what have previously been called “French Fork lugs.” Jackson lugs consist of what have previously been called “ear lugs.” Deggan lugs are like Jackson lugs, but are rounded instead of pointed.

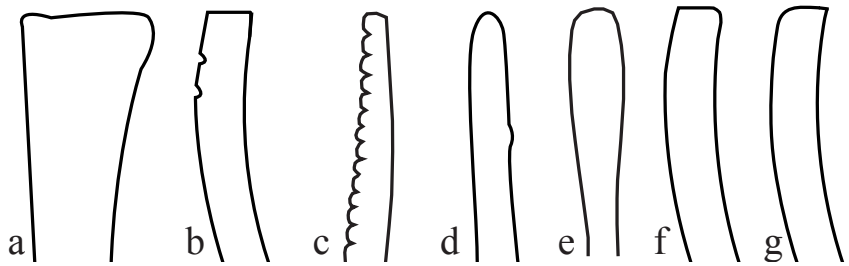

Figure 3.1. Rim treatments identified in the Feltus assemblage. (a) thickened squared, (b) simple squared, (c) simple tapered, (d) simple rounded, (e) thickened rounded, (f) squared out, (g) squared in. Profile exteriors face left.

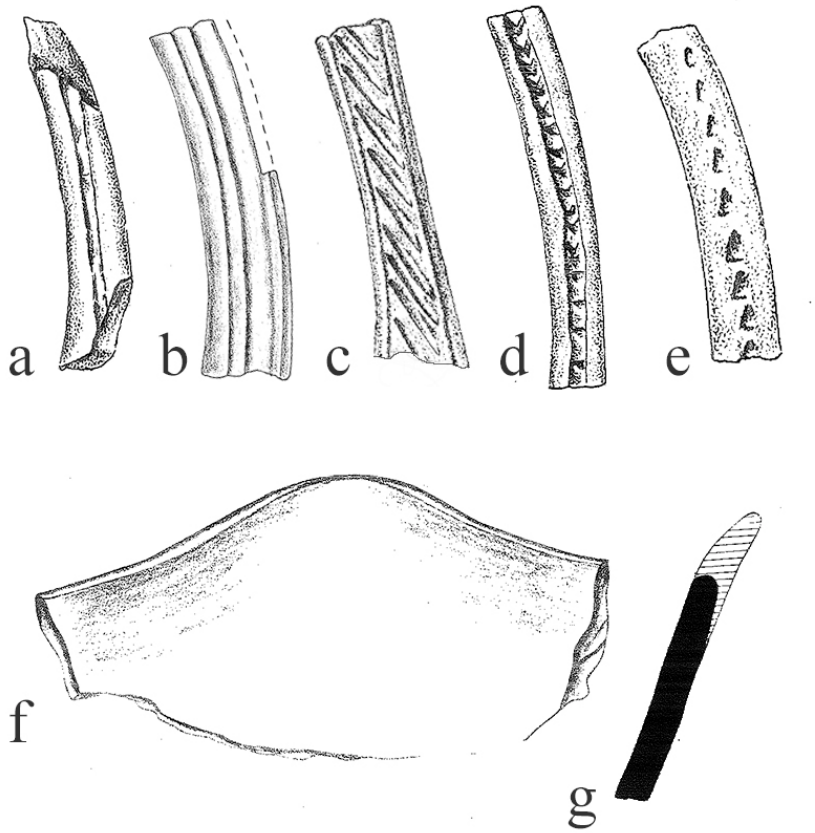

Figure 3.2. Lip treatments identified in the Feltus assemblage. (a) incised- 1 line, (b) incised- multiple lines, (c) incised- perpendicular, (d) punctated lines, (e) punctated, (f) undulating, view from inside vessel, (g) undulating, rim profile view (adapted from Belmont n.d.)

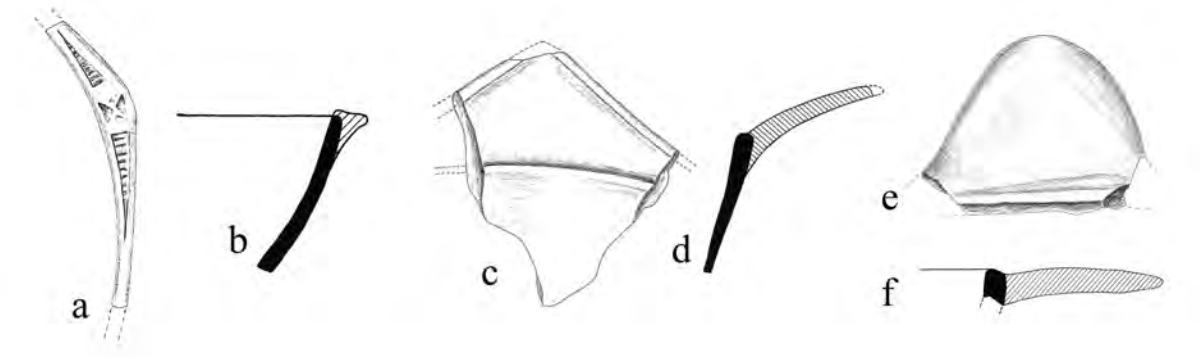

Figure 3.3. Lug types identified in the Feltus assemblage. (a) Joffrion, view from above vessel, (b) Joffrion, rim profile view, (c) Jackson, view from above vessel, (d) Jackson, rim profile view, (e) Deggan, view from above vessel, (f) Deggan, rim profile view (adapted from Belmont n.d.).

Rim profiles were drawn for most sherds representing over 5% of the vessel's circumference and representative examples of all types, varieties, and other important categories were photographed. Finally, to augment my attribute analysis, additional measurements were recorded for all Coles Creek Incised sherds. These data are available in their entirety from the Research Laboratories of Archaeology at the University of North Carolina, Chapel Hill.:[2]

- Number of horizontal incised lines.
- Distance between the top line and the rim.
- Average spacing of the remaining lines.
- Presence or absence of a row of punctations below the lines.
- Whether the lines overhang or not (Figure 3.4).

Types and Varieties

In each of the following descriptions, I outline the sorting criteria used for identifying the type and variety. In some cases, I provide additional information about how a given variety is separated from similar varieties or about important debates regarding the sorting

[2] In addition to the attributes described below, I recoded whether the decoration on the sherd was complete (i.e., whether I was confident that no additional lines would have been present below the break).

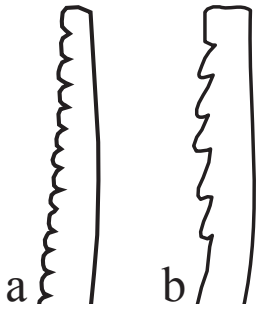

Figure 3.4. Incising methods common in the Feltus assemblage. (a) non-overhanging lines shown on a Coles Creek Incised, *var. Mott* sherd, (b) overhanging lines shown on a Coles Creek Incised, *var. Coles Creek* sherd. Profile exteriors face left.

criteria. I then provide their temporal association. Temporal designations used below are based on the work of Phillips (1970), Brain et al. (n.d.), and Williams and Brain (1983) (as summarized in Brown [1998]) unless otherwise noted. Finally, I discuss in more detail the occurrence of a given variety in the Feltus assemblage. This description incudes its prevalence in the collection overall, the vessel forms represented, the rim forms represented, the presence or absence of lip decorations and lugs, and, at times, patterns of vessel size. These data are summarized in Table 3.1. When possible, the Feltus data are compared with data about these characteristics more generally. In the descriptions of the Coles Creek Incised varieties, I include some of the information about number of lines and line spacing that was recorded as part of my attribute analysis.

Plain Wares

Baytown Plain is the dominant plain ware from the Grand Gulf phase of the Marksville period through historic times (though shell tempered wares are also incorporated to varying degrees after the Mississippi period). It encompasses all grog-tempered wares in the LMV and represents a combination of wares once known as Marksville Plain, Troyville

Table 3.1. Summary of data on ceramic types and varieties in the Feltus assemblage.

Category **Type**	**Variety**	**Body**	**Rim**	**Total**	**Common Vessel Forms**	**Vessel Size (cm)**	**Wall Thick. (mm)**	**Rim form**	**Lip Decoration**	**Lugs**	**Paste**
Plain Wares											
Baytown Plain	*Addis*	0	1	1	-	-	7	rounded	no	no	Addis
Baytown Plain	*unspecified*	35291	1527	36818	variable	3 to 52	5.35	variable	rare	variable	variable
unclassified plain	sand tempered	0	1	1	-	-	4	round	no	no	?
Decorated Wares											
Alligator Incised	*Alligator*	48	24	72	beakers, necked and restricted jars	7 to 30	6.33	rounded (squared)	no	no	Satartia
Alligator Incised	*Oxbow*	49	0	49	-	-	5.57	-	-	-	Reed
Alligator Incised	*unspecified*	9	7	16	variable	-	5.45	variable	no	no	?
Beldeau Incised	*unspecified*	1	0	1	-	-	5	-	-	-	?
Chevalier Stamped	*Chevalier*	8	31	39	necked jars	11 to 29	4.43	rounded	common, undulating	no	variable
Chevalier Stamped	*unspecified*	45	30	75	restricted bowls and jars	9 to 16	5.07	rounded, squared	no	no	variable
Coleman Incised	*unspecified*	2	0	2	-	-	7	-	-	-	?
Coles Creek Incised	*Anathasio*	0	3	3	restricted jars	26	4.67	rounded	no	no	Valley Park
Coles Creek Incised	*Blakely*	0	1	1	restricted jars	-	5	tapered	no	no	Vicksburg
Coles Creek Incised	*Campbellsville*	0	8	8	variable	13 to 53	5.57	variable	common, variable	no	Valley Park
Coles Creek Incised	*Coles Creek*	83	217	300	beakers, restricted jars	8 to 40	5.18	squared (rounded)	rare	no	Valley Park

Table 3.1. Continued.

Type	Variety	Body	Rim	Total	Common Vessel Forms	Vessel Size (cm)	Wall Thick. (mm)	Rim form	Lip Decoration	Lugs	Paste
Coles Creek Incised	*Ely*	0	2	2	bowls	45	5.5	thickened squared	always, 3 incisions	no	?
Coles Creek Incised	*Hunt*	4	67	71	variable	9 to 24	4.73	rounded (squared)	rare	no	Reed
Coles Creek Incised	*Judd Bayou*	0	15	15	shallow bowls	25	4.93	rounded	rare	Jackson decor.	Sharfit
Coles Creek Incised	*Mott*	17	6	23	variable	-	4.65	variable	no	no	Vicksburg
Coles Creek Incised	*Phillips*	1	381	382	bowls, restricted bowls	3 to 42	4.61	variable	common, variable	Joffrion	Reed
Coles Creek Incised	*Stoner*	3	81	84	bowls	14 to 49	4.84	squared (rounded)	common, variable	Joffrion decor.	Sharfit
Coles Creek Incised	*unspecified*	134	373	507	variable	5 to 30	5.33	variable	common, variable	no	variable
French Fork Incised	*French Fork*	35	16	51	carinated and restricted bowls	12 to 33	4.41	rounded, squared	rare	no	Valley Park
French Fork Incised	*Laborde*	11	10	21	restricted jars	11 to 30	4.23	rounded, squared	rare	no	Valley Park
French Fork Incised	*Larkin*	98	41	139	necked jars, restricted bowls and jars	3 to 23	4.46	variable	rare	variable	Valley Park
French Fork Incised	*Wilzone*	29	5	34	beakers	14	5.47	rounded	no	no	Sharfit
French Fork Incised	*unspecified*	26	20	46	variable	12 to 21	4.17	rounded, squared	common, variable	Joffrion decor.	variable
Harrison Bayou Incised	*unspecified*	6	0	6	-	-	5.2	-	-	-	Addis
Hollyknowe Pinched	*Hollyknowe*	5	0	5	-	-	4.6	-	-	-	Reed
Landon Red on Buff	*Landon*	1	0	1	-	-	7	-	-	-	Reed

Table 3.1. Continued.

Type	Variety	Body	Rim	Total	Common Vessel Forms	Vessel Size (cm)	Wall Thick. (mm)	Rim form	Lip Decoration	Lugs	Paste
Larto Red	*Larto*	85	4	89	bowls, shallow bowls	9 to 45	4.69	rounded	rare	variable	Reed
Larto Red	*Silver Creek*	4	0	4	-	-	4	-	-	-	Sharfit
Marksville Incised	*unspecified*	20	1	21	-	-	6.05	squared	-	-	variable
Marksville Stamped	*Mabin*	1	0	1	-	-	6	-	-	-	Marksville
Marksville Stamped	*Manny*	5	0	5	-	-	5.4	-	-	-	Satartia
Marksville Stamped	*Troyville*	5	0	5	-	-	6.6	-	-	-	Satartia
Mazique Incised	*Kings Point*	3	0	3	-	-	3.5	-	-	-	Vicksburg
Mazique Incised	*Manchac*	0	1	1	-	-	5	-	-	-	Addis
Mazique Incised	*Mazique*	3	4	7	necked and restricted jars	35	5.2	rounded (squared)	common, 1 incision	no	Valley Park
Mulberry Creek CM	*Edwards*	127	5	132	restricted jars	26	5.91	rounded	no	no	Reed
Mulberry Creek CM	*Smith Creek*	170	7	177	restricted jars	19 to 34	4.72	rounded	no	no	Sharfit
Mulberry Creek CM	*unspecified*	209	2	211	beakers	27	5.42	squared	no	no	variable
Plaquemine Brushed	*unspecified*	1	0	1	-	-	4	-	-	-	Addis
Pontchartrain CS	*unspecified*	3	2	5	beakers	-	5.4	rounded	no	no	variable
Salomon Brushed	*Salomon*	1	0	1	-	-	7	-	-	-	Reed
Woodville Zoned Red	*Woodville*	30	0	30	plates, shallow bowls	-	4.79	thickened rounded	no	no	Reed

Plain, Coles Creek Plain, and Addis Plain[3] (Phillips 1970:47-48). Though this combination means that Baytown Plain has exceptional temporal variability, it importantly allows for sherds for which paste has not been identified to be classified as Baytown Plain, *var. unspecified*.[4]

Baytown Plain overall has a great deal of variation in surface finish, color, size and amount of temper, and quality of manufacture (Roe 2010:311). Many varieties of Baytown Plain have been defined based on differences in these characteristics and provide more temporal and geographic specificity. The bases for these variety differentiations are subtle, ambiguous, and often exceedingly difficult to replicate. Perhaps the best attempt yet is made by Ryan (2004), who relies primarily on size and amount of temper to define varieties. However, Roe (2010) and others have noted significant issues with applying these varieties beyond the collection in which they were originally defined.

At this time, little effort has been made to differentiate paste in the Feltus collections primarily because the analyses necessary to differentiate pastes using Ryan's (2004) method are beyond the scope of this dissertation. Moreover, the relatively short time span during which Feltus was occupied means that it is unlikely that important temporal differences could be sorted out using paste. Most plain sherds at Feltus fit Williams and Brain's (1983) definitions of *Reed* (*Troyville*, using Ryan's [2004] typology), *Sharfit*, and *Valley Park*

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[3] Addis Plain was first defined by Quimby (1942:265-266; 1951:107) and then made a variety of Baytown Plain by Phillips (1970:48-49). Steponaitis (1974:116-122) and later, Brain et al. (n.d.) re-revised the typological position of *Addis* to be its own type in the Natchez Bluffs. They identified it as a set of varieties characterized by a heterogeneous composition of grog and grit with a considerable amount of organic material (e.g., plant matter, shell, and bone) (see also Ryan 2004:93; Williams and Brain 1983:92). Recent research has called into question the ability of researchers to distinguish between Addis and Baytown Plain, and particularly between varieties of Addis Plain (LaDu 2009:149-150). I have thus chosen to follow Phillips's convention here and refer to all plain wares as Baytown Plain, *var. unspecified* unless variety determination is possible.

[4] Furthermore, this allows for decorated sherds occurring on atypical paste to be classified as the same type as their related sherds rather than creating a new type due to paste differences (Ryan 2004:93).

(*Percy Creek*, using Ryan's [2004] typology). *Troyville* sherds are present in smaller quantities.

Baytown Plain sherds are ubiquitous in the deposits at Feltus (sample: 35,291 body, 1,527 rim; Figure 3.5), and represent all vessel forms and rim forms, though rims are only rarely thickened. Punctations around the rim (with no associated incising) and lip decorations have been considered rim modes of Baytown Plain and are included in this category (Figure 3.6). That said, I see no reason other than precedent for continuing to ignore these simple decorative styles. At Feltus, lip decoration on plain vessels is rare (occurring on only 3% of the Baytown Plain sherds), but all of the lip decoration techniques present in the Feltus assemblage more broadly are also present on the plain sherds. Lugs are more common (occurring on approximately 10% of the Baytown Plain sherds) and represent all of the recognized lug types (Figure 3.7).

Two plain sherds from Feltus are not classified as Baytown Plain, *var. unspecified*. First, one sherd was easily identified as *Addis* due to obvious paste differences and its characteristic Tunica rim form (Figure 3.8). It is generally a marker of the Mississippi period Plaquemine culture, but sherds of *Addis* are also found in contexts dating to the Gordon phase of the Late Coles Creek period. Second, an unclassified, sand-tempered rim sherd is included in the collection (Figure 3.9). As it is too thin to be Alexander Incised, the sand-tempered type with the closest geographic proximity to Feltus, it is possible that this sherd may come from the contemporary Autauga phase site in Alabama.

Figure 3.5. Baytown Plain, *var. unspecified.*

Figure 3.6. Baytown Plain, *var. unspecified*, showing mending holes or rim modes.

Figure 3.7. Baytown Plain, *var. unspecified*, lugs.

Figure 3.8. Baytown Plain, *var. Addis.*

Figure 3.9. Sand-tempered, plain sherd.

Decorated Wares

Whenever possible, decorated sherds from Feltus were assigned to a type and variety based on their fit with previously defined categories. Decorative motif was relied on most heavily, but paste was also considered. The following section lays out these definitions as they apply to the Feltus material.

When a type determination was possible, but the sherd did not fit the definition of any defined variety, it was classified as *var. unspecified.* In many of these cases, variety determination is impossible because of the size or condition of the sherd. However, in some cases, the sherd is unusual and might potentially fit in a variety currently unknown to the author. Finally, sherds that were not classifiable to type were categorized based on decorative method (e.g., incised, punctated, brushed). A small group of unclassified, decorated sherds do not fit any type definition but may be identifiable to other readers.

ALLIGATOR INCISED, *VAR. ALLIGATOR* (Phillips 1970:39; Ryan 2004:100; Wells 1998:119-120; Williams and Brain 1983:117); sample: 48 body, 24 rim (Figure 3.10).

Alligator is characterized by broad, wet-paste incisions consisting of vertical or diagonal, parallel lines coming down from the rim of vessels with relatively coarse paste (equivalent to Baytown Plain, *var. Satartia)*. Temporally, *Alligator* is a Late Marksville and Baytown variety (Issaquena and Hamilton Ridge phases). Though it is generally thought not to continue into Coles Creek, Ryan (2004:100) suggests its continued importance, and her recognition is supported by the Feltus data.

Alligator can be differentiated from similar varieties of Mazique Incised based on paste, the presence of wet-paste incisions, and the presence of accent punctations at the ends of most lines. In some situations, the decoration is not limited to a band around the rim, as it is with Mazique Incised (Figure 3.11).[5] Weinstein et al. (1978:28-29; see also Ryan 2004:135) define Mazique Incised, *var. Bruly*. Given their description of variety, I suggest that the sherds categorized here as *Alligator* could just as easily be called *Bruly*, perhaps implying that there is no difference between the two. The similarity of these two varieties calls into question the division of Alligator Incised and Mazique Incised more broadly, and suggests the types should perhaps be combined.[6]

At Feltus, and in general, *Alligator* is found on necked jars, restricted jars, and beakers. Usually, these vessels have rounded rims though some are squared; lugs and lip decorations are not present. *Alligator* sherds are concentrated in three very early contexts at Feltus: in Feature 4 and the midden deposit that overlays it, and in B.S0.

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[5] At Feltus, there is evidence of whole-body decoration on two vessels. One is a vessel with concentric arced lines not characteristic of other examples of *Alligator*. It is possible that this arced decoration should define a new variety, but at this time, it is classified as *Alligator* based on typical rim-band decoration.

[6] A similar argument can be made about Wells's (1998:152) Mazique Incised, *var. Hendrix* (cf. Williams and Brain 1983:117); it is likely that other varieties also exist that could link these two types should the literature be search more thoroughly.

Figure 3.10. Alligator Incised, *var. Alligator*.

Figure 3.11. Alligator Incised, *var. Alligator*, vessel showing whole body decoration.

ALLIGATOR INCISED, *VAR. OXBOW* (Phillips 1970:39-40; Ryan 2004:100-102; Williams and Brain 1983:118); sample: 49 body (Figure 3.12).

Oxbow is characterized by narrow, rectilinear incised lines with no recognizable pattern, often crisscrossing one another on paste equivalent to Baytown Plain, *var. Reed*. At Feltus, *Oxbow* occurs on characteristically gray-to-orange pastes, making it easy to identify. Temporally, *Oxbow* is a Baytown variety focused in the Deasonville phase in the Lower Yazoo Basin (Brain 1988; 1989) and the Marsden and Mt. Nebo phases in the Tensas (Ryan 2004:102). Presumably, this makes it a Hamilton Ridge variety in the Natchez Bluffs.

At Feltus, only small body sherds were found; thus, no vessel form approximations could be made. *Oxbow* primarily comes from Feature 59, Feature 4, and the midden overlaying that area, which makes sense with its Baytown date. *Oxbow* is also present in B.F1. This may imply an early date for the beginning of construction on Mound B or may represent re-deposition of earlier sherds in a later fill episode.

ALLIGATOR INCISED, *VAR. UNSPECIFIED*; sample: 9 body, 7 rim (Figure 3.13).

These sherds have incised diagonal lines but do not fit into any of the aforementioned varieties of Alligator Incised. Differentiating these sherds from Mazique Incised, *var. unspecified* is somewhat arbitrary, based primarily on their presence only in early contexts at Feltus and the fact that sometimes the decoration seems to extend a ways down the body of the vessel. In fact, these sherds were all originally classified as Mazique Incised, *var. unspecified* because the incisions were shallow and done on a fairly dry paste[7]— yet another

[7] It is possible that these sherds belong in Alligator Incised, *var. Wiggins Bayou*, defined by Belmont (1983) and used by Weinstein et al. (1995:81) and Ryan (2004:102) as an early version of Alligator. As expected based on the definition of *Wiggins Bayou*, the lines on these sherds are shallow; however, they are not U-shaped.

Figure 3.12. Alligator Incised, *var. Oxbow.*

Figure 3.13. Alligator Incised, *var. unspecified.*

indication that the separation of Alligator and Mazique Incised is a relic of when and where the types were defined and that the two should be combined.

BELDEAU INCISED, *VAR. UNSPECIFIED* (Ford 1951:81-83; Roe 2010:316; Ryan 2004:104; Schilling 2004:70; Williams and Brain 1983:133); sample: 1 body (Figure 3.14).

The only sherd of Beldeau Incised is atypical and not high quality. It is from a mixed context in the Mound D area and was assigned to this type based on crosshatching in a diamond pattern with a central punctation. No vessel form assignment could be made. Though the type is generally considered a late Coles Creek type (with varieties dating to both the Balmoral and Gordon phases), the paste, low quality, and unusual style of the sherd at Feltus indicate it is likely an earlier version.

Figure 3.14. Beldeau Incised, *var. unspecified.*

CHEVALIER STAMPED, *VAR. CHEVALIER* (Ford 1951:81; Phillips 1970:65; Roe 2010:317; Ryan 2004:107; Wells 1998:121; Williams and Brain 1983:140-141); sample: 8 body, 31 rim (Figure 3.15).

Chevalier is characterized by well-executed, closely spaced rocker stamping that fills the entire zone of decoration in vertical, parallel rows. Usually, the zone of decoration is delineated by an incised line above and below the stamping in a band just below the rim. Temporally, *Chevalier* is generally considered a Ballina phase variety and is found on paste equivalent to Baytown Plain, *var. Valley Park.* However, it also characterizes Sundown phase assemblages and may have first occurred in late Baytown contexts on pastes more similar to Baytown Plain, *vars. Reed* and *Sharfit* (Bitgood 1989; Ford 1951:81; Ryan 2004:107). At Feltus, most vessels are necked jars though this is not the recognized pattern. More typically, beakers, restricted jars, and bowls have been identified. Most *Chevalier* rims at Feltus are rounded and though lip decoration is rare, the rims commonly undulate. Lugs are not present.

CHEVALIER STAMPED, *VAR. UNSPECIFIED*; sample: 45 body, 30 rim = 30 (Figure 3.16).

This category was created to contain all rocker-stamped sherds that do not meet the criteria discussed above for *Chevalier* (i.e., the rocker stamping is not well executed in vertical lines or the sherd is too small to tell) and do not seem to fit other rocker-stamped categories (e.g., French Fork Incised, *var. Wilzone* or Marksville Stamped, *var. Troyville*). Generally, Chevalier Stamped maintains its importance from the Hamilton Ridge through Gordon phases, though it is likely that the sherds here are late Baytown and early Coles Creek based on paste equivalent to Baytown Plain, *vars. Reed* and *Sharfit.* At Feltus, sherds of Chevalier Stamped, *var. unspecified* represent restricted jars and restricted bowls (this is

Figure 3.15. Chevalier Stamped, *var. Chevalier.*

Figure 3.16. Chevalier Stamped, *var. unspecified.*

more expected than the necked jars that dominate the *Chevalier* assemblage) and commonly have both rounded and squared rims. Lugs and lip decorations are not present.

COLEMAN INCISED, *VAR. UNSPECIFIED* (Phillips 1970:69; Roe 2010:318; Ryan 2004:111; Williams and Brain 1983:144-145); sample: 2 body (Figure 3.17).

Only two body sherds of Coleman Incised were recovered from plow zone or A-horizon contexts at Feltus and identified by characteristic shallow, dry-paste curvilinear incisions. Temporally, this is a late Coles Creek (Gordon phase) and early Plaquemine type and usually occurs on *Addis* paste (Roe 2010:318). In both cases, the paste of the Feltus sherds looks more Coles Creek (equivalent to Baytown Plain, *var. Vicksburg* or *Valley Park)* and might represent early versions. No vessel form determinations could be made.

COLES CREEK INCISED, *VAR. ANATHASIO* (Ryan 2004:111; Schilling 2004:72; Wells 1998:127); sample: 3 rim (Figure 3.18).

Anathasio is essentially Coles Creek Incised, *var. Coles Creek* (see below) but with rows of punctations under each of the overhanging, incised lines. This type has been reported in assemblages from the Louisiana coast (Ryan 2004:111); however, I believe that *Anathasio* sherds found in other areas of the LMV may be identified as *Coles Creek* (e.g. Ford 1951:74). *Anathasio* is an early Coles Creek variety, dating to the Sundown and Ballina phases (Ryan 2004:111) and is most common on vessels with *Valley Park*-like paste. All sherds of *Anathasio* are from plow zone and mixed contexts in the Mound D area and represent two vessels, only one for which vessel form can be identified. In this case, the vessel is a slightly restricted jar with a rounded rim and an orifice diameter of 26 cm (much

Figure 3.17. Coleman Incised, *var. unspecified.*

Figure 3.18. Coles Creek Incised, *var. Anathasio.*

like the single *Anathasio* vessel from Hedgeland [Ryan 2004:111]). Sherds at Feltus have 5 lines and the average spacing of the lines is 6.25 mm.

COLES CREEK INCISED, *VAR. BLAKELY* (Phillips 1970:70; Roe 2010:319; Ryan 2004:111; Williams and Brain 1983:146); sample: 1 rim (Figure 3.19).

Blakely is characterized by multiple, very fine, non-overhanging lines widely spaced on thin, polished ware equivalent to Baytown Plain, *var. Vicksburg*. This variety is a good marker for the Balmoral phase of the late Coles Creek and the single rim sherd from Feltus represents a restricted jar with a tapered, Vicksburg rim. Found during a surface collection, it shows an average spacing of 14 mm.

COLES CREEK INCISED, *VAR. CAMPBELLSVILLE* (Phillips 1970:71; Roe 2010:319; Ryan 2004:111-113; Wells 1998:127; Williams and Brain 1983:147); sample: 8 rim (Figure 3.20).

Campbellsville is characterized by two widely spaced, overhanging lines incised around the rim of vessels with paste equivalent to Baytown Plain, *var. Valley Park*.[8] Temporally, *Campbellsville* is a Ballina phase variety in the Natchez Bluffs though it is reported from the Sundown phase in the Tensas (Ryan 2004:113) and the Kings Crossing phase in the Lower Yazoo. At Feltus, small quantities of *Campbellsville* were recovered from the C3.S1 flank midden, A.S0, and Feature 4 indicating a Sundown phase appearance of this variety at Feltus.

Typically this decorative technique is used on bowls with flattened rims, but at Feltus, like at Hedgeland, *Campbellsville* sherds represent a wider variety of vessels including a deep bowl, a simple bowl, a shallow bowl, a restricted jar or bowl, and a beaker. They range

[8] Wells (1998:127) defines this variety as having only one line (similar to my description of *Stoner*), but this is likely to be an error on his part.

Figure 3.19. Coles Creek Incised, *var. Blakely.*

Figure 3.20. Coles Creek Incised, *var. Campbellsville.*

in size from 13 to 53 cm in orifice diameter, which is very large when compared to other known assemblages (Ryan 2004:113). Often there are one or two lines incised in a flattened lip, though at Feltus a single line, punctated line, and row of punctations all occur as lip decorations; lugs are not present. Rim forms are also quite variable, being both simple and thickened in cross-section and both rounded and squared. Average line spacing is approximately 20 mm.

COLES CREEK INCISED, *VAR. CHASE* (Ford 1951:76-77; Phillips 1970:71-72; Roe 2010:319; Ryan 2004:113-114; Wells 1998:127-128; Williams and Brain 1983:147-148); sample: 1 body, 137 rim (Figure 3.21).

Traditionally, *Chase* is characterized by two closely spaced, overhanging incised lines around the lip of well-smoothed vessels with paste equivalent to Baytown Plain, *var. Sharfit.* The lines are often relegated to an exterior rim strap. Often a lip line is also present and sometimes vessels display decorated lugs. Temporally, *Chase* dates to the Baytown and early Coles Creek periods and peaks during the Sundown phase in the Natchez Bluffs.

In my analysis, *Chase* represents a combination of the *Chase* and *Wade* varieties (Phillips 1970:76; Ryan 2004:122; Williams and Brain 1983:156) as sorting the two at Feltus was nearly impossible. Though the presence of a rim strap has been a defining feature of *Chase*, at times determining if there was a rim strap was exceedingly difficult, and even when they could be sorted there appeared to be no reason to do so. *Wade* is also characterized by overhanging lines on *Sharfit*-like paste and is temporally identical to *Chase.* Furthermore, though *Chase* is said to include sherds with two, three or four lines, every example at Feltus has only two (which is more characteristic of previous variety descriptions of *Wade*).

Figure 3.21. Coles Creek Incised, *var. Chase.*

Thus, I have essentially gotten rid of *Wade* by including the neat versions with *Chase* and the messy versions with *Hunt*. I am not the first to recognize this distinction as a continuum (Phillips 1970:76; Wells 1998:129-130; Williams and Brain 1983:156), but I have chosen to use fewer categories when possible.[9] I have, however, chosen to continue separating *Chase* and *Hunt* due to significant differences in paste and frequency of

[9] Wells (1998:129-141) another others have recognized even more two-line varieties of Coles Creek Incised such as *Choctaw Bayou*, *Marsden*, *Newell Ridge*, and *Wilsonia*.

overhanging lines, as well as likely temporal distinctions. (Temporal attributes of one and two-line Coles Creek Incised varieties will be discussed later in this chapter.)

Chase is a common variety at Feltus, absent only from the very earliest and very latest contexts on the site. It is most often found on restricted bowls and restricted jars, though simple bowls are also fairly common. The lines are spaced between 1 and 4 mm apart, with a few 5 mm apart. The more widely spaced examples were classified as *Chase* rather than *Hunt* because of paste, neatness of the lines, and presence of probable rim straps. Below the two incised lines, there is infrequently a row of punctuations. Though occasionally rounded, tapered, or thickened, nearly all *Chase* rims are simple squared, as is typical of the variety. At Feltus, 64% of the *Chase* sherds have lip decorations, with single incisions and punctated lines being the most common techniques and 14% have lugs, all of the Joffrion decorated type. The punctated-line lip decoration is highly correlated with the presence of these lugs.

COLES CREEK INCISED, *VAR. COLES CREEK* (Ford 1951:74-76; Phillips 1970:70; Roe 2010:318; Ryan 2004:111; Wells 1998:125; Williams and Brain 1983:146); sample: 83 body, 217 rim (Figure 3.22).

Coles Creek is characterized by three or more closely spaced, overhanging lines in a band around the rim of vessels showing paste equivalent to Baytown Plain, *var. Valley Park*. Often, there is a single row of triangular punctations below the bottom line. *Coles Creek* is thought to be a reliable marker of the Ballina phase in the Natchez Bluffs but seems to dominate the Feltus collections throughout much of the Sundown and Ballina phases (see also Roe 2010:318; Ryan 2004:111).

Figure 3.22. Coles Creek Incised, *var. Coles Creek.*

At Feltus, *Coles Creek* occupies a middle position between *Hunt* (crude, fewer lines, more widely spaced, tend not to overhang) and *Mott* (neat, more lines, more closely spaced, tend not to overhang) and thus can be easily confused with either at the ends of its range of variation. Though this is a case of arbitrarily dividing along a continuum of variation (between *Hunt* and *Mott*), I found these sherds relatively easy to sort based on overhanging lines, neatness, line spacing, and paste differences. Important temporal differences further support their separation.

Coles Creek is the second most common variety at Feltus. Like Chase, it is absent from only the very earliest and latest contexts. *Coles Creek* sherds have 3 to 8 lines with 4 and 5 line examples being the most common.[10] Average line spacing is from 4 to 7 mm, with some more compact and some more widely spaced examples. Two examples have line spacing below 3 mm and might be better classified as *Mott*, though both are overhanging and on *Valley Park*-like paste. At Feltus, 72% of the sherds with complete decoration have punctations under the lowest incised line. Rims are usually squared, but rounded examples are also common.[11] Lip decoration is rare and lugs are absent. Restricted jars and beakers are by far the most common vessel forms at Feltus and elsewhere (Ryan 2004:111) and rim diameters range from 8 to 40 cm.

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[10] Belmont (1983, see also Ryan 2004:118-119) creates Coles Creek Incised, *var. Serentz*, which is closely related to *Coles Creek.* It is defined as having 3 to 6 overhanging lines and dating to the Sundown phase while *Coles Creek* is defined as having 4 to 12 overhanging lines and dating to the Ballina phase. Given that most Feltus sherds have 4 or 5 lines (and thus would fit neatly into either of these categories), they were not separated here. The combination of Belmont's *Serentz* and *Coles Creek* categories provides a logical reason for the dominance of this type at Feltus during both the Sundown and Ballina phases.

[11] Occasionally, a *Coles Creek* rim is tapered; none of these tapered rims have punctations below the lines and about half do not overhang. In these situations, a designation of *Mott* may be more appropriate, but their paste and association with only Ballina phase diagnostics implies they are more likely *Coles Creek.*

COLES CREEK INCISED, *VAR. ELY* (Phillips 1970:72); sample: 2 rim (Figure 3.23).

Ely is characterized by a thickened rim with multiple incised lines in the flattened, broad lip. One or two additional lines are incised far down the exterior of the vessel. Temporally, this is an early Coles Creek variety (Sundown and Ballina phases). At Feltus, two rim sherds were uncovered that represent very large bowls. Both have three lines incised in the lip and an average line spacing of approximately 30 mm.

COLES CREEK INCISED, *VAR. HUNT* (Phillips 1970:74-75; Ryan 2004:116; Williams and Brain 1983:151); sample: 4 body, 67 rim (Figure 3.24).

Hunt characteristically has two or three crudely incised, non-overhanging lines below the rim of vessels with paste equivalent to Baytown Plain, *var. Reed*. These lines are neither particularly closely spaced, nor particularly widely spaced. Sometimes, they have similarly crude punctations under the bottom line. Temporally, *Hunt* is a reliable marker of the Hamilton Ridge and Sundown phases. Along with *Phillips, Hunt* is the earliest Coles Creek Incised variety in the LMV.

It is sometimes difficult to tell the difference between *Hunt* and technically "incompetent" *Coles Creek* or *Chase*, but the ease of separating the groups at Feltus has compelled me to keep them as separate varieties. At Feltus, *Hunt* is found in the Mound D area features and the midden over Feature 4, in the borrow pit fill, throughout Mound A and its submound middens, in the C3.S1 flank midden, and in the early fill episodes and surfaces of Mound B. Interestingly, it is also found on the upper floors of Mound B perhaps indicating that the type persists later in time than originally thought, or that these sherds may actually be messy attempts at *Coles Creek* or *Chase*. Approximately 65% of *Hunt* sherds at Feltus have two lines while the rest have three. Line spacing varies wildly, sometimes on a single vessel.

Figure 3.23. Coles Creek Incised, *var. Ely.*

Figure 3.24. Coles Creek Incised, *var. Hunt.*

Rims are most often rounded, though sometimes are roughly squared; lugs are not present and lip decoration is rare. Vessel form is variable with high numbers of beakers, bowls, restricted bowls, and restricted jars.

COLES CREEK INCISED, *VAR. JUDD BAYOU* (Wells 1998:130-132); sample: 51 rim (Figure 3.25).

This variety was temporarily called "interior-one-line" until I came across Wells's (1998:130-132) description of *Judd Bayou*.[12] A single incised line around the interior of bowls characterizes the variety. Rarely, there is a line incised and/or punctated in the lip and/or the single interior incised line has a row of punctations above it (including one example at Feltus with oblique punctations like those described by Wells [1998:132]). His variety dates to the Hamilton Ridge and Sundown phases. At Feltus, it was found in small quantities in B.S0, B.S3, A.S0, Feature 4, and the midden overlaying Feature 4, as might be expected given that temporal range. It is commonly associated with Jackson decorated lugs and appears most commonly on shallow bowls.

COLES CREEK INCISED, *VAR. MOTT* (Phillips 1970:75-76; Roe 2010:320; Ryan 2004:116-117; Wells 1998:134; Williams and Brain 1983:151-154); sample: 17 body, 6 rim (Figure 3.26).

Mott is characterized by many closely spaced, incised lines encircling the vessel rim. The non-overhanging lines tend to be so close together that they almost resemble combing or brushing. *Mott* generally marks the Balmoral phase of the late Coles Creek and is found on vessels with paste equivalent to Baytown Plain, *var. Vicksburg*. Though similar to *Coles*

[12] This could also be what Belmont (1983) refers to as Phillips, *var. Timberlaine.* Given that assigning a variant in this way would elevate *Phillips* to type status, I have not taken up Belmont's convention. It could also be what Bitgood (1989:159) refers to as a Macon rim mode. He notes that this mode is found on both plain and red-slipped vessels, which is true at Feltus. However, making this interior line a rim mode while making an identical exterior line a separate decorative type seems equally unwarranted. Thus, *Judd Bayou* is used here.

Figure 3.25. Coles Creek Incised, *var. Judd Bayou.*

Figure 3.26. Coles Creek Incised, *var. Mott.*

Creek, *Mott* consists of more closely spaced and neatly incised lines that do not display the tendency to overhang and are generally on tapered rims. In their discussion of *Mott*, Williams and Brain (1983:154) recognize the intermediate nature of this variety between *Coles Creek* and *Hardy* stating "the cutoff points between these three varieties are somewhat arbitrary in the final analysis—we have three frankly artificial segments in a single continuum."

At Feltus, *Mott* incisions tend to be on simple, rounded, or squared rims and occasionally, they do overhang. This could potentially be because the *Mott* sherds from Feltus are actually a bit earlier than is typical of the variety and thus may represent the early end of the transition from *Coles Creek*-style decoration on *Valley Park* paste to traditional *Mott*-style decoration on *Vicksburg* paste. At Feltus, all examples of *Mott* have at least 7 lines spaced at a maximum of 3 mm. The rims are all too small to determine vessel form and/or orifice diameter. *Mott* is only found from B.F3 and mixed contexts.

COLES CREEK INCISED, *VAR. PHILLIPS* (Roe 2010:320; Ryan 2004:117-118; Wells 1998:135-137; Williams and Brain 1983:154-156); sample: 1 body, 381 rim (Figure 3.27).

Phillips is characterized by one incised line below the rim, sometimes accompanied by an additional incised lip line.[13] Temporally, *Phillips* has a long range, as would be expected from such a simple decorative style.[14] It is characteristically on *Reed*-like paste, but

[13] It should be considered that this variety of decoration might exist in another type, Larto Red (similarly to how *Stoner* exists in Larto Red as *var. Silver Creek*). Perhaps a variety of Larto Red should be created that consists of red-filmed ware with *Phillips*-style decoration (cf. Bitgood 1989:96).

[14] Belmont (1983) divided *Phillips* into seventeen variants that span over 900 years (Wells 1998:137). Though this temporal variation is real and could be used to better understand LMV ceramic collections, I have made no attempt to use these variants here. Instead, I have recognized important variation within *Phillips* through the attribute analysis presented in the following section. Should enough of Belmont's variants prove to be useful elsewhere, it would seem to be necessary to elevate *Phillips* to a type, Phillips Incised, and start naming varieties rather than variants. That said, Belmont (1983) suggests that many of these variants could be classified as rim modes of Baytown Plain and various decorated types, rather than as belonging only to *Phillips*.

Figure 3.27. Coles Creek Incised, *var. Phillips.*

given its long range it occurs on pastes equivalent to *Reed, Sharfit,* and *Valley Park* as well. It is one of the earliest varieties of Coles Creek Incised, first appearing in the Hamilton Ridge phase, but likely continues at least into the Ballina phase. Often, descriptions of *Phillips* specify that the line be crudely incised (i.e., different from *Hunt* only in that it is a single line); however, at Feltus, the line varies from being crudely incised to neatly incised, meaning it is often as similar to *Chase* as it is to *Hunt*. In the following section, I examine this variation temporally. Though Wells (1998:137) was unsuccessful in doing so, I recognize a change through time from messier to neater versions of *Phillips.* Referring to these variants as *Phillips A* and *Phillips B* respectively, I suggest that *Phillips A* is comparable to *Hunt* in both execution and temporal span, while *Phillips B* is comparable to *Chase.*

Phillips is the most common decorative variety at Feltus and is absent from only the very earliest and very latest contexts on the site (as would be expected given its exceptionally long temporal range). It occurs most commonly on bowls and restricted bowls, though is certainly not limited to those forms. Likewise, it has variable orifice diameters, rims forms, and decorative attributes. Lugs occur on 6% of the *Phillips* sherds.

COLES CREEK INCISED, *VAR. STONER* (Phillips 1970:76; Roe 2010:321; Ryan 2004:121-122; Wells 1998:139-141; Williams and Brain 1983:156); sample: 3 body, 81 rim (Figure 3.28).

Stoner is characterized by a single, often overhanging line, incised well below the lip of well-smoothed or polished large, shallow bowls.[15] Often an incised line in the lip accompanies this motif. Temporally, it is a marker of the Sundown phase, though Belmont (1983) extends its date into the Ballina phase and Ryan (2004:121-122) notes its occurrence

[15] This decorative form exists in another type as Larto Red, *var. Silver Creek.*

Figure 3.28. Coles Creek Incised, *var. Stoner*.

during the Baytown period. I recognize a distinct quantitative break in the rim to incision distance between *Phillips* and *Stoner* at around 10 mm. Wells (1998:139) recognizes another variety, *Shackleford Lake*, that is a less neat and polished version of *Stoner*. This distinction is similar to the one I recognize between *Phillips A* and *Phillips B.* We certainly have sherds of *Stoner* from Feltus that fit this messy definition, but they are very uncommon and seem to show no temporal differentiation from the more typical examples.

Though not as common as *Chase* or *Phillips*, *Stoner* is found in almost every major context at Feltus. As expected, it is found primarily on bowls, including some of the largest vessels at the site. It is also found on restricted bowls and restricted jars in limited quantities. Squared rims are favored, though rounded rims are also common. All variety of lip decorations occur on examples from Feltus, and 3% of *Stoner* bowls have Joffrion decorated lugs.

COLES CREEK INCISED, *VAR. UNSPECIFIED*; sample: 134 body, 373 rim (Figure 3.29).

Many sherds from Feltus have parallel, incised lines encircling the rim, but do not have characteristics that identify them to a specific variety, so they remain in this *unspecified* category. This is generally due to small size and fragmentation, but in some cases these sherds may be identifiable as a variety outside of the author's knowledge.

FRENCH FORK INCISED, *VAR. FRENCH FORK* (Ford 1951:62-67; Phillips 1970:84; Roe 2010:322-323; Ryan 2004:124; Wells 1998:143; Williams and Brain 1983:160); sample: 35 body, 16 rim (Figure 3.30).

French Fork Incised is characterized by complex, curvilinear incised or linear, punctated decoration. Varieties are distinguished based on the style of decoration used to fill

Figure 3.29. Coles Creek Incised, *var. unspecified.*

Figure 3.30. French Fork Incised, *var. French Fork.*

the zones between the incisions. The *French Fork* variety is characterized by fine stippling between the incised lines, sometimes so fine and consistent as to make the decoration seem to stand away from the background. This is referred to as the "cameo effect" (Phillips 1970:84). Moreover, triangular, wedge-shaped, or circular punctations usually punctuate the ends of the incised lines. Temporally, this is Sundown and Ballina phase variety and generally occurs on well smoothed, *Valley Park*-like paste. *French Fork* sherds from the Mound B flank midden showed special treatment, with an unusual slip being applied over the burnished, non-punctated zones (Figure 3.31).

At times, *French Fork* is exceedingly difficult to distinguish from *Larkin* and other punctated varieties of French Fork Incised. The fineness of the stippling (and hence the cameo effect) was used here as the primary determinant. If there was any doubt, the sherd was generally not included in *French Fork*, and instead classified as *Larkin*. *French Fork* is found in most major contexts across the site including some of the earliest contexts. It most often occurs on carinated bowls (a vessel form almost unique to this variety during Coles Creek times), but also occurs on restricted bowls. Rims are both squared and rounded. Lip decoration is rare and lugs are absent.

FRENCH FORK INCISED, *VAR. LABORDE* (Ford 1951:62-67; Phillips 1970:85; Roe 2010:323; Ryan 2004:126; Wells 1998:143-144; Williams and Brain 1983:162); sample: 11 body, 10 rim (Figure 3.32).

Laborde is characterized by typical French Fork Incised decoration but with incised parallel lines as the zoned decoration. This type also dates to the Sundown and Ballina phases and is usually found on vessels with *Valley Park*-like paste. Sometimes, definitions of French Fork Incised include both curvilinear and rectilinear decorative treatments (e.g., Ryan

Figure 3.31. French Fork Incised, *var. French Fork*, slipped sherds.

Figure 3.32. French Fork Incised, *var. Laborde.*

2004:124; Wells 1998:143). While curvilinear motifs are by far more common, the *Laborde* sherds from Feltus commonly display rectilinear incisions (Figure 3.33). Though here they are treated as a subclass of *Laborde*, these sherds are easily sortable and could be considered a different variety. Their presence at Feltus is heavily weighted towards the early contexts, perhaps indicating that rectilinear motifs were more common in the Sundown phase than the Ballina phase.

Another interesting trend within the French Fork Incised assemblage from Feltus involves the way that the classic French Fork Incised swirl is worked into the overall motif. As demonstrated on at least one *Laborde* sherd (as well a few *Larkin* sherds), some Feltus examples feature a series of simple swirls placed in a band around the rim with alternating zones of decoration. This differs from the continuous swirl bounded by triangular zones of decoration most often featured on French Fork Incised vessels (Figure 3.34). While this difference in decorative motif may have some temporal sensitivity, I cannot yet demonstrate it.

At Feltus, *Laborde* appears mostly on restricted jars. The sherds have both rounded and squared rims, no lugs, and infrequent and variable lip decoration. They are found in a similar range of contexts as other varieties of French Fork Incised but are less common and slightly more concentrated in the earlier contexts (especially the rectilinear subclass).

FRENCH FORK INCISED, *VAR. LARKIN* (Ford 1951:62-67; Phillips 1970:85; Ryan 2004:126-129; Wells 1998:144; Williams and Brain 1983:162); sample: 98 body, 41 rim (Figure 3.35).

Larkin also has typical French Fork Incised decoration but with more random, usually larger triangular or wedge-shaped punctations as the zoned decoration. These punctations are larger and less neatly applied than *French Fork* and thus do not display the cameo effect.

Figure 3.33. French Fork Incised, *var. Laborde*, rectilinear subclass.

Figure 3.34. Variation in French Fork Incised decorative motifs. (a-b) simple swirls placed in a band with alternating zones of decoration, (c-f) continuous swirls bounded by triangular zones of decoration.

Figure 3.35. French Fork Incised, *var. Larkin.*

Larkin is generally found on *Valley Park*-like paste and marks the Ballina phase. It is thus slightly later than *French Fork, Laborde,* and *Wilzone*.

Larkin is the most common variety of French Fork at Feltus, though this may have to do more with sorting procedures than actual frequencies. The variation from *French Fork* to *Larkin* occurs along a spectrum, with it being nearly impossible to know which type should subsume the middle portion. At this time, *Larkin* is being used as the larger category to hold all non-*French Fork* sherds with curvilinear motifs and zones of punctations.[16]

Larkin is found in most contexts at Feltus including many of the earliest contexts. This suggests that it either has a wider time span than just the Ballina phase or that some of the sherds classified here as *Larkin* should be classified as *French Fork*. At Feltus, *Larkin* most often occurs on necked jars, restricted bowls, and restricted jars. It is also the most common decorative style on pipes. Rim form is variable and lip decoration is rare. Some 8% of the *Larkin* sherds have lugs, including both Joffrion and Jackson styles.

FRENCH FORK INCISED, *VAR. WILZONE* (Ford 1951:62-67; Phillips 1970:86-87; Roe 2010:323; Ryan 2004:130; Wells 1998:144-145; Williams and Brain 1983:163); sample: 29 body, 5 rim (Figure 3.36).

Wilzone is also characterized by typical French Fork Incised decoration but with rocker stamping as the zoned decoration. This is the earliest variety of French Fork Incised, commonly occurring during the Baytown period on vessels with paste equivalent to Baytown Plain, *var. Sharfit*. At Feltus, *Wilzone* usually occurs on beakers with rounded rims and no lugs or lip decoration. It is only present in Feature 4 and Feature 59.

[16] For example, there is a group of 18 sherds with carelessly incised lines surrounding zones of equally careless punctations. Though these sherds are nearly identical to those photographed as *Iberville* from Hedgeland (Ryan 2004:126; see also Phillips 1970:84-85; Roe 2010:323; Williams and Brain 1983:160), their early context at Feltus and the fact that they are on *Valley Park* paste implies that they are more likely a messy version of *Larkin*.

Figure 3.36. French Fork Incised, *var. Wilzone.*

FRENCH FORK INCISED, *VAR. UNSPECIFIED*; sample: 26 body, 20 rim (Figure 3.37 and 3.38).

French Fork Incised sherds that are missing the diagnostic trait of background treatment were not assigned a variety at this time. Very small sherds form the majority of this *unspecified* category; however some sherds are possibly identifiable. These sherds may represent the French Fork Incised version of Marksville Incised, *var. Yokena*, which also lacks background treatment.

HARRISON BAYOU INCISED, *VAR. UNSPECIFIED* (Phillips 1970:87-88; Ryan 2004:130; Wells 1998:145-147; Williams and Brain 1983:165); sample: 6 body (Figure 3.39).

Six small body sherds of Harrison Bayou Incised were identified at Feltus based on the presence of incised lines arranged in an oblique, crosshatched pattern similar to Beldeau Incised but without the central punctations. Temporally, *Harrison Bayou* is a Gordon phase variety and should occur on Addis paste, but our examples do not reflect this and therefore are likely an earlier variant. They are currently called *unspecified.* The sherds from Feltus are much too small to identify vessel form and are all from plow-zone contexts.

HOLLYKNOWE PINCHED, *VAR. HOLLYKNOWE* (Phillips 1970:89-90; Roe 2010:324; Williams and Brain 1983:165-167); sample: 5 body (Figure 3.40).

Hollyknowe is characterized by linear, vertical designs made by pinching wet clay between the thumb and finger creating a ridge effect. This variety dates to the late Marksville through Baytown periods and usually occurs on vessels with *Reed*-like paste. At Feltus, all *Hollyknowe* sherds were found in and above Feature 4 and their small size makes it impossible to identify vessel form.

Figure 3.37. French Fork Incised, *var. unspecified.*

Figure 3.38. French Fork Incised, *var. unspecified*, front and back of the same sherd.

Figure 3.39. Harrison Bayou Incised, *var. unspecified.*

Figure 3.40. Hollyknowe Ridge Pinched, *var. Hollyknowe.*

LANDON RED ON BUFF, *VAR. LANDON* (Phillips 1970:98); sample: 1 body (Figure 3.41).

One body sherd of *Landon* was identified from B.S0 on the basis of red designs painted on the interior of a bowl. It is distinguishable from Larto Red and Woodville Zoned Red only by the presence of unzoned, painted designs (i.e., not bounded by incised lines) on a distinctive buff-colored background. That said, *Landon* sherds may often be reported as Larto Red, especially as both types commonly occur on paste that resembles Baytown Plain, *var. Reed* and date to the Baytown period.

Figure 3.41. Landon Red on Buff, *var. Landon.*

LARTO RED, *VAR. LARTO* (Ford 1951:59-61; Phillips 1970:99; Roe 2010:325; Ryan 2004:131; Schilling 2004:73; Wells 1998:147; Williams and Brain 1983:169); sample: 85 body, 4 rim (Figure 3.42).

Larto is characterized by overall red slip on the interior, exterior, or both faces of sherds that would otherwise be considered Baytown Plain, *var. Reed* and dates to the Hamilton Ridge and Sundown phases. Here, all red-slipped sherds that showed no evidence of zoning were identified as *Larto* unless they could be confidently identified as *Silver Creek.* This includes sherds with a single incised line close to the rim (and often on the interior of the vessel) and a few with incising in the lip. The prevalence of these "rim modes" at Feltus may give cause for creating new varieties to differentiate such sherds from unincised examples (i.e. creating *Phillips* or *Judd Bayou*-style varieties of Larto Red).

Figure 3.42. Larto Red, *var*. *Larto.*

Generally, and at Feltus, *Larto* occurs on open vessels such as bowls and plates. Vessels usually have rounded rims, and only rarely have lip decoration. Lugs are fairly common in both the Joffrion-decorated style and other, less conventional lug forms. *Larto* was found in nearly all of the early contexts at Feltus, including B.S0, B.F1, B.F2, Feature 4 and its overlaying midden, Feature 59, and A.S0.

LARTO RED, *VAR. SILVER CREEK* (Phillips 1970:100; Wells 1998:148; Williams and Brain 1983:169-170); sample: 4 body (Figure 3.43).

Silver Creek is characterized by a single, overhanging line incised well down the exterior of red-slipped vessels (i.e., *Stoner* decoration on Larto Red). It dates to the Sundown phase, slightly later than *Larto*. This variety is likely underemphasized because unincised body sherds would be classified as *Larto.* Generally, other Coles Creek Incised varieties (e.g.: *Phillips* and *Judd Bayou*) with red slip have been categorized as rim modes of *Larto* (see above). However, Wells (1998:148) characterizes any incised variety of Larto Red as *Silver Creek* (including those with *Phillips* and *Judd Bayou* rims). If I had followed this practice, a number of sherds would have been added to *Silver Creek*.

At Feltus, *Silver Creek* is rare and found only in Feature 4; however, it is likely that some of the later *Larto* sherds belong in this variety. Oddly, all *Silver Creek* sherds at Feltus are body sherds despite the fact that this variety is only identifiable based on a Coles Creek Incised, *var*. *Stoner*-style incision around the rim. For this reason, no vessel form identifications could be made.

MARKSVILLE INCISED, *VAR. UNSPECIFIED* (Phillips 1970:110-119; Ryan 2004:134; Toth 1988:229-230; Williams and Brain 1983:181); sample: 20 body, 1 rim.

This type includes all sherds with broad, U-shaped incised designs with no evidence of stamping. All Marksville Incised sherds at Feltus have closely spaced, curvilinear motifs. Though the type's temporal assignment varies based on variety, it generally dates to the Grand Gulf through Issaquena phases of the Marksville period. Marksville Incised sherds come only from the fill of Mound B and the borrow pit fill. They make up a small proportion

Figure 3.43. Larto Red, *var. Silver Creek.*

of the sherds from these contexts and are likely the result of secondary deposition in fill. The single rim sherd has a squared lip but is too small to allow for vessel form identification.

MARKSVILLE STAMPED, *VAR. MABIN* (Williams and Brain 1983:182); sample: 1 body (Figure 3.44).

Mabin is characterized by Marksville Incised-style decoration with zones of dentate stamping. The decoration is on wares with paste equivalent to Baytown Plain, *var. Marksville.* Dating to the Marksville period, the single body sherd at Feltus is from a mixed context.

Figure 4.44. Marksville Stamped, *var. Mabin.*

MARKSVILLE STAMPED, *VAR. MANNY* (Phillips 1970:120-121; Roe 2010:326; Williams and Brain 1983:182); sample: 5 body (Figure 3.45).

Manny is characterized by the same U-shaped incisions around zones of dentate stamping; however, in this case the stamping was applied using a rocker motion. It occurs on paste equivalent to Baytown Plain, *var. Satartia.* The two small body sherds at Feltus are from mixed contexts and likely date to the Issaquena phase of the Marksville period.

MARKSVILLE STAMPED, *VAR. TROYVILLE* (Ford 1951:49-50; Phillips 1970:123-127; Roe 2010:323; Williams and Brain 1983:183); sample: 5 body (Figure 3.46).

Troyville consists of U-shaped incisions around zones of plain rocker stamping on *Satartia*-like paste and dates to the Issaquena phase of the Marksville period. These sherds formed a small proportion of the assemblage from Feature 4. No vessel form identifications could be made.

Figure 3.45. Marksville Stamped, *var. Manny.*

Figure 3.46. Marksville Stamped, *var. Troyville.*

MAZIQUE INCISED, *VAR. KINGS POINT* (Ford 1951:57-59; Phillips 1970:129; Roe 2010:327; Ryan 2004:135-137; Schilling 2004:73; Williams and Brain 1983:184-186); sample: 3 body (Figure 3.47).

Kings Point is a finely executed variety of Mazique Incised characterized by bands of line-filled triangles around the rim of vessels with *Vicksburg*-like paste. The care with which the lines were incised and the finer ware are the primary distinguishing factors between *Kings Point* and *Mazique*. *Kings Point* is a middle and late Coles Creek variety dating to the Balmoral phase. At Feltus, two refitted sherds come from the first fill episode of Mound A. This indicates either an exceptionally early occurrence of *Kings Point* or sherds brought down into the fill through unidentified features or bioturbation. Because only body sherds were found, vessel form approximations are not possible.

MAZIQUE INCISED, *VAR. MANCHAC* (Ford 1951:186-187; Phillips 1970:129-130; Roe 2010:327; Ryan 2004:138; Williams and Brain 1983:186); sample: 1 rim (Figure 3.48).

Manchac is a messy variety of Mazique Incised characterized by careless, diagonal incisions of *Addis* paste. It occurs in collections dating from the Gordon phase of the late Coles Creek through the historic Natchez phase in the Natchez Bluffs. The single rim sherd from Feltus is from a plow zone context and likely represents later admixture.

MAZIQUE INCISED, *VAR. MAZIQUE* (Ford 1951:57-59; Phillips 1970:129; Roe 2010:327; Ryan 2004:134-135; Wells 1998:151; Williams and Brain 1983:184); sample: 3 body, 4 rim (Figure 3.49).

Mazique is characterized by line-filled triangles or other diagonal or vertical rectilinear arrangements of incised lines around the vessel rim. The paste is finer than with Alligator Incised, *var. Alligator* and the incisions were made when the paste was dryer. The lines also tend to overhang, while *Alligator* lines do not. *Mazique* is a Ballina phase variety

Figure 3.47. Mazique Incised, *var. Kings Point.*

Figure 3.48. Mazique Incised, *var. Manchac.*

Figure 3.49. Mazique Incised, *var. Mazique.*

and appears on vessels with paste equivalent to Baytown Plain, *var. Valley Park*. *Mazique* is surprisingly absent from most contexts at Feltus, being found only in A-horizon and surface collections. It appears most commonly on necked and restricted jars, both rounded and squared rims are present (though rounded is more common), and lip decoration is common, with both incised and undulating rims.

MULBERRY CREEK CORD MARKED, *VAR. EDWARDS* (Ford 1951:53-57; Phillips 1970:137; Ryan 2004:138-139; Williams and Brain 1983:188-189); sample: 127 body, 5 rim (Figure 3.50).

Edwards is a messy variety of Mulberry Creek Cord Marked characterized by an overall roughening of the vessel exterior using a cord-wrapped paddle. Though the cords are of various sizes and the impressions have various spacing and direction, they are usually overlapping and deep. This variety persists throughout the Baytown period and is on characteristically coarse, *Reed*-like paste. Sorting the different varieties of Mulberry Creek Cord Marked can be difficult and often seems to be done somewhat arbitrarily. Here, *Edwards* was defined based on the presence of two or more of the following characteristics: (1) deep and thick cord impressions, (2) thick and coarse ware, (3) overlapping cord marks without any attempt at a pattern. Also, *Edwards* sherds at Feltus are often of a lighter color than *Smith Creek.*

Edwards is common at Feltus, likely because it is one of the few all-over decorative techniques used during the Baytown and Coles Creek periods. The few rims at Feltus all represent restricted jars, though *Edwards* is generally thought to be more common on necked jars and beakers (Ryan 2004:139). The rounded rims often have crude decoration (incisions or punctations) near the lip, applied over the cord marking. *Edwards* is common in A.S0, and relatively common in Feature 59, Feature 4, and the midden above it.

MULBERRY CREEK CORD MARKED, *VAR. SMITH CREEK* (Ford 1951:53-57; Phillips 1970:138-139; Roe 2010:328; Ryan 2004:140; Wells 1998:152-154; Williams and Brain 1983:189-190); sample: 170 body, 7 rim (Figure 3.51).

Unlike *Edwards, Smith Creek* is characterized by neatly applied cord marking usually found below a band of typical Coles Creek Incised, *var. Coles Creek* decoration. Often the

Figure 3.50. Mulberry Creek Cord Marked, *var. Edwards.*

Figure 3.51. Mulberry Creek Cord Marked, *var. Smith Creek.*

cord marking was applied in such a way as to create a diamond pattern across the majority of the vessel, though this pattern is not as obvious when sherds are from the basal portion. *Smith Creek* is usually on paste equivalent to Baytown Plain, *var. Sharfit* and is most common during the Sundown phase. This variety was differentiated from *Edwards* by the presence of two or more of the following characteristics: (1) thin and shallow cord impressions, (2) thin and compact ware, (3) purposeful crisscrossed pattern with uniform spacing. Sherds are

generally of a darker color than *Edwards* and show smoothing (sometimes to the point of partially obliterating the cord marks).

Both rim and body sherds were common at Feltus and all sherds are from restricted jars. *Smith Creek* is slightly more common than *Edwards* and is found in both early and late contexts at the site (see also Ryan 2004:140). This may indicate that a neat version of Mulberry Creek Cord Marked developed earlier than often thought and that the decorative type overall continued longer than assumed. Counter to the common definition, most *Smith Creek* rims at Feltus are rounded and have two overhanging lines incised around the vessel orifice (more in the style of *Chase* than *Coles Creek* [see also Ryan 2004:140]). That said, they also have an associated row of punctations that make them closely resemble *Coles Creek*. Neither lip decorations nor lugs are present.

MULBERRY CREEK CORD MARKED, *VAR. UNSPECIFIED*; sample: 209 body, 2 rim (Figure 3.52).

Because the variation within Mulberry Creek Cord Marked does not fall into easily discriminated clusters, a relatively large category of *unspecified* sherds were identified. A sherd was identified as *unspecified* if it displayed a combination of the defining characteristics listed above such that the sherd could not confidently be placed in either *Smith Creek* or *Edwards*. Though the *unspecified* designation makes it harder to date the sherds, they likely come from the Hamilton Ridge through Sundown phases. At Feltus, all Mulberry Creek Cord Marked, *var. unspecified* sherds for which vessel form could be identified were beakers with squared rims and no lip decoration or lugs. They were found in every context that contained *Edwards* or *Smith Creek.*

Figure 3.52. Mulberry Creek Cord Marked, *var. unspecified.*

PLAQUEMINE BRUSHED, *VAR. PLAQUEMINE* (Ford 1951:85-86; Phillips 1970:153; Roe 2010:328; Ryan 2004:140-142; Wells 1998:154; Williams and Brain 1983:196-200); sample: 1 body (Figure 3.53).

Plaquemine consists of brushing or combing applied in oblique, horizontal, or vertical bands. Because of the small size of the single sherd from Feltus, no vessel form determination could be made. The sherd is from a mixed context and the ware is equivalent to Baytown Plain var. *Addis*. Overall, *Plaquemine* persists throughout the Gordon through Foster phases.

PONTCHARTRAIN CHECKED STAMPED, *VAR. UNSPECIFIED* (Ford 1951:79-81; Phillips 1970:154; Ryan 2004:142; Schilling 2004:74; Toth 1988:231-232); sample: 3 body, 2 rim (Figure 3.54).

Pontchartrain Checked Stamped is characterized by all-over decoration with a waffle-like grid of small, square impressions. As seems to be typical, our single large rim sherd

Figure 3.53. Plaquemine Brushed, *var. Plaquemine.*

Figure 3.54. Pontchartrain Checked Stamped, *var. unspecified.*

represents a beaker form. No variety determinations were made as determining the necessary paste characteristics for these sherds was impossible. That said, the stratigraphic context of the sherds at Feltus suggest this is a relatively early variant.[17]

SALOMON BRUSHED, *VAR. SALOMON* (Phillips 1970:158-159; Wells 1998:155; Williams and Brain 1983:203-204); sample: 1 body (Figure 3.55).

Salomon is characterized by careless, shallow striations caused by brushing a multi-point implement across the entire exterior surface of the vessel. Phillips (1970:159) notes associations with Mulberry Creek Cord Marked, *var. Edwards* and suggests that this decoration is incidental to cord marking. This certainly seems possible at Feltus as only one sherd of *Salomon* was collected. Though the rims are often decorated, no rim sherds were found. *Salomon* is a Baytown variety that is occasionally noted in the early Coles Creek and occurs on *Reed*-like paste.

WOODVILLE ZONED RED, *VAR. WOODVILLE* (Ford 1951:61-62; Phillips 1970:176; Ryan 2004:147-148; Wells 1998:157); sample: 30 body (Figure 3.56).

Woodville Zoned Red is differentiated from Larto Red based on the presence of zones of red filming set off from zones of unslipped, plain surface by incised lines. Often, the zoning is in French Fork Incised-like designs with associated accent punctations. The filming is usually inside the design while the background is left plain and decoration is on the interior

[17] Pontchartrain Checked Stamped, *var. Pontchartrain* spans the entire Coles Creek period in the coastal areas where it is common but is focused more in the Balmoral phase further north and occurs on paste equivalent to Baytown Plain, *var. Valley Park*. However, all of the Feltus sherds were recovered from the midden over Feature 4. As this is a confidently dated early context, these sherds must have either been imported from coastal sites where the type appears earlier or belong in a different variety. Toth (1988:231-232) recognizes a variety, *Canefield*, that dates to the early Marksville period and occurs on paste equivalent to slightly improved Baytown Plain, *var. Marksville*. It is possible that the sherds from Feltus belong in *Canefield*, but without further work on differentiating paste, they are listed as *unclassified* and thought to date to the Issaquena, Hamilton Ridge, or Sundown phase.

Figure 3.55. Salomon Brushed, *var. Salomon.*

Figure 3.56. Woodville Zoned Red, *var. Woodville.*

of open bowls and plates (though the exterior may be slipped as well). Though *Woodville* is often thought to be restricted to the Hamilton Ridge phase, Belmont (1983) extends it into the Sundown phase. It generally occurs on *Reed*-like paste and may be underrepresented in counts because sherds could easily be classified as French Fork Incised if no red slipping is visible or as Larto Red if no incising is visible.

As expected, the sherds at Feltus include only shallow bowls and plates and commonly have thickened, rounded rims. *Woodville* occurs most commonly in Feature 59, but also in small quantities in Feature 4, B.S0, and the features associated the premound surface southwest of Mound A.

UNCLASSIFIED DECORATED; sample: 183 body, 50 rim.

This category consists of sherds that cannot be identified to a type. Most are too small to confidently identify, and thus it is unlikely that they could be classifiable given further study. A smaller group is unclassified due only to the lack of an established category that fits the decorative style (Figure 3.57). That said, the decoration is complete enough that these sherds could likely be identified if an appropriate category is found or created.

A single body sherd with a Fatherland Incised-like motif was identified at Feltus based on the presence of multiple, parallel incised lines in a meandering, curvilinear pattern (Brown 1998:54l; Phillips 1970:106). Temporally, this type would date to the Foster, Emerald, and Natchez phases of the Mississippi period; however, the Feltus sherd was found in the confidently dated A2.S0. Given that the paste more closely resembles Baytown Plain, *var. Sharfit*, it is possible that this represents an as-of-yet unrecognized variety of Fatherland Incised. However, it is more likely that the similarity to Fatherland Incised is a coincidence.

Figure 3.57. Unclassified decorated sherds.

In one case, a large number of unclassified sherds from Feltus could be grouped together, possibly indicating the need for a new variety. I refer to this group as the "punctated-line set" (Figure 3.58). This set is characterized by stab-and-drag-style incising. At Feltus, these lines are found on both the outside of vessels and the inside of plates. In some cases, the lines run parallel to the rim in a Coles Creek Incised-like pattern; in others, they seem to meander around the vessel surface in a pattern more like French Fork Incised.[18]

Figure 3.58. Unclassified decorated sherds, punctated-line set.

[18] Belmont (1983) recognizes only one stab-and-drag variety in the LMV after Tchefuncte decorative styles. He terms it Alligator Incised, *var. Herringville* and says it is rarely found in the Indian Bayou and Marsden phases in the Tensas and occasionally the Yazoo. However, these sherds do not fit the definition of this type well.

Attribute Analysis

Coles Creek ceramics are dominated by a relatively small number of decorative motifs combined in various ways to make the types and varieties defined by Williams and Brain (1983) and others. For this analysis, I focused on the Coles Creek Incised sherds and recorded quantitative information about each example (e.g., number of lines, average spacing) rather than fitting them into preconceived and often ambiguous categories (e.g., few versus many lines, wide versus narrow spacing). I was able to isolate clusters of attributes in the data by identifying modal distributions in these quantitative measurements. Some attributes left out of previous analyses (e.g., rim form, interior lines, lip treatments) were also considered in my determination (see also Wells 1998). Combining these data with my stylistic analysis, I was able to: (1) determine whether the commonly used types and varieties actually represent discrete clusters, and (2) recognize important temporal shifts that may be masked by the current type-variety system.

Coles Creek Incised varieties are generally defined based on some combination of five attributes: number of lines, average spacing, distance from the rim to the top line, whether or not the lines are overhanging, and the presence of punctations (Table 3.2). The principal attribute used in assigning Coles Creek Incised varieties is the number of lines incised around the exterior rim of the vessel. When all Coles Creek Incised sherds from Feltus are examined, one and two-line examples dominate the assemblage; three, four, and five-line examples are present in moderate quantities; and examples with more than five lines are present but uncommon (Figure 3.59). These data support suggestions made above about the adequacy of the established varieties of Coles Creek Incised.

Table. 3.2. Summary of attribute data on Coles Creek Incised varieties.

Variety	Number of Lines	Distance from Rim	Average Spacing	Punctations	Overhanging
Anathasio	5	5 to 6	6.25	always	Y
Blakely	-	7	14	never	N
Campbellsville	2	16 to 23	19	never	Y
Chase	2	1 to 7	1 to 4	rare	Y
Coles Creek	4 to 5	1 to 10	4 to 7	common	Y
Ely	2	22 to 33	32	never	Y
Hunt	2 to 3	2 to 18	1 to 20	sometimes	N
Judd Bayou	1	2 to 12	-	rare	N
Mott	6 to 7	2 to 4	< 3	rare	N
Phillips	1	1 to 10	-	never	both
Stoner	1	10 to 43	-	never	Y

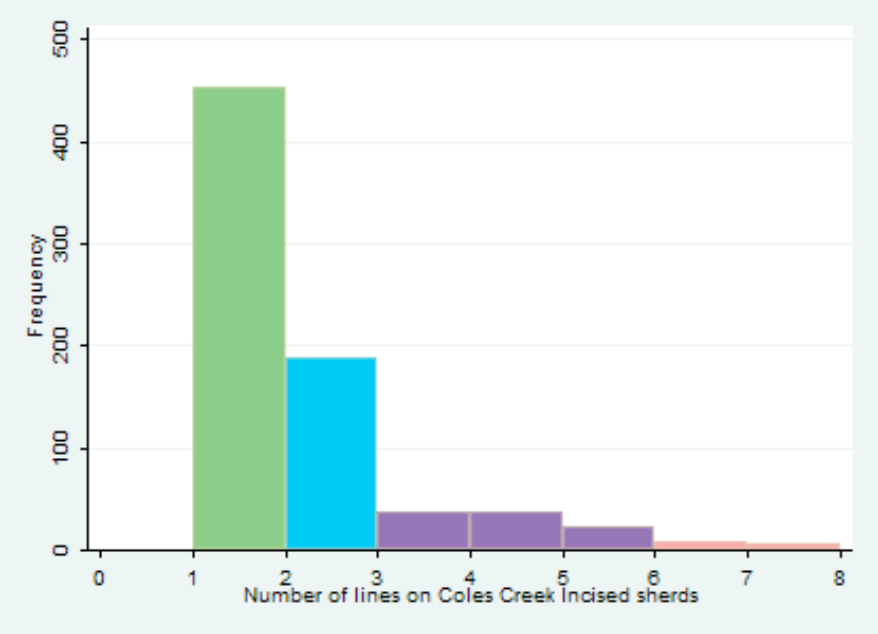

Figure 3.59. Bar chart of the number of lines on Coles Creek Incised sherds at Feltus showing a large group of sherds with one line, a large group with two lines, a group with 3, 4, or 4 lines, and a small group with 6 or 7 lines.

Most Coles Creek Incised sherds at Feltus fall into four varieties, defined by either one line (*Phillips* and *Stoner*) or two lines (*Chase* and *Hunt*). In the case of the one-line varieties, the sheer number of sherds may suggest the need for additional categories. Possible ways to define these categories will be described later in this section. Two-line varieties display the opposite tendency. They are about half as common as one-line varieties at Feltus and yet subdivision is rampant, and has perhaps been overused (e.g., Wells 1998:129-141).

Sherds displaying three, four, or five lines fall mostly into *var. Coles Creek* as well as less common but visually distinct varieties such as *Anathasio* and possibly also Belmont's (1983) *Serentz*. One dominant variety seems appropriate given their moderate frequency at Feltus. Sherds displaying more than five lines are uncommon at Feltus, probably because of the relatively early date of the site and the relatively late temporal span of *Mott.* Again, it does not seem that further differentiation is needed in this case.

The next most commonly relied upon attribute is line spacing. Again beginning with the one-line varieties, a histogram of distance from rim to incision shows two clusters (Figure 3.60). A very large group of sherds with 0 to 10 mm spacing (*Phillips*) and a more dispersed group of sherds with 10 to 43 mm spacing (*Stoner*). Again, the sheer number of sherds in the *Phillips* category suggests that differentiation based on additional attributes may be possible. In this case, it is important to note that *Phillips* is the only variety of Coles Creek Incised at Feltus that does not consistently display either overhanging or non-overhanging incisions. This attribute is correlated with other attributes not as commonly relied upon in creating type-variety definitions. For example, the incidence of overhanging lines is slightly higher on vessels with squared rims (50%) than rounded rims (38%) and is strongly associated with the more neatly incised examples. The incidence of lip decoration is more common on vessels

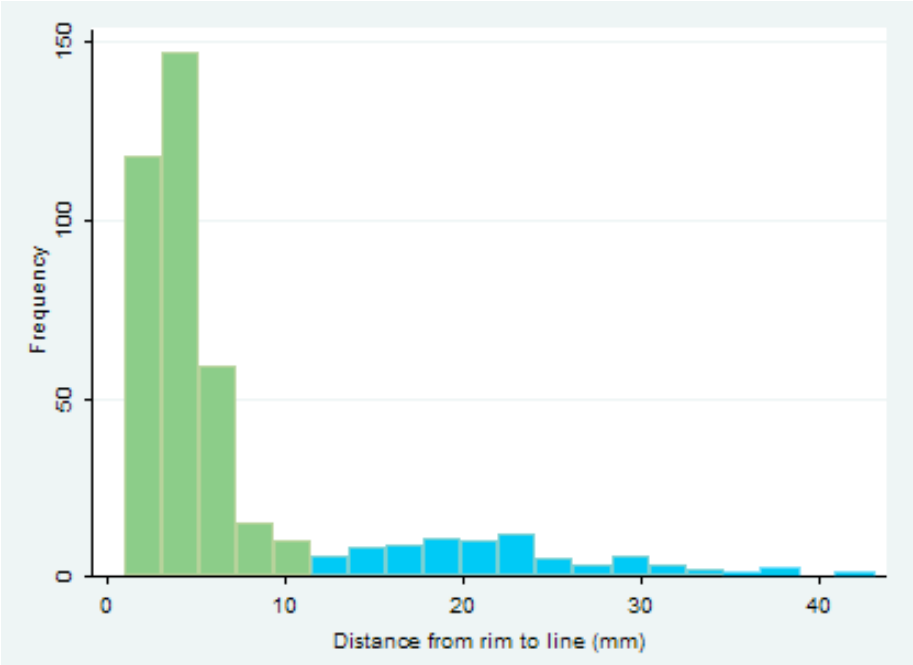

Figure 3.60. A histogram of distance from rim to incision on one-line varieties of Coles Creek Incised showing two clusters: a very large group with 0 – 10 mm spacing (*Phillips*) and a more dispersed group with 10 – 43 mm spacing (*Stoner*).

with squared rims (35%) versus those with rounded rims (5%). Finally, the incidence of lugs also shows the same pattern (9% and 2%, respectively).

This provides support for dividing *Phillips* into two categories: *Phillips A* is a one-line version of *Hunt* that tends to have rounded rims, infrequent lip decoration, and non-overhanging lines, and *Phillips B* is a one-line version of *Chase* that tends to have squared rims, a high incidence of lip decoration, and overhanging lines.[19] Importantly, this distinction has temporal meaning at Feltus. Sherds that fit the description of *Phillips A* are more common in the collections from the earliest contexts at Feltus and more closely fit previous definitions of the *Phillips* variety. Those that fit the description of *Phillips B* dominate the

[19] As mentioned above, Wells (1998:139) recognizes another variety of Coles Creek Incised that closely resembles *Stoner* in its definition. His variety, *Shackleford Lake*, would be like my *Phillips A* while *Stoner* as traditionally defined would be like my *Phillips B*. This previously identified distinction provides additional support for splitting *Phillips* in this way.

collections from the later contexts at Feltus and only appear after the beginning of the Coles Creek period proper (Table 3.3). The temporal pattern of the *Phillips* sherds thus fits well with the accepted date ranges and distributions for *Hunt* and *Chase,* and this distinction may help to narrow *Phillips's* exceptionally long temporal span.

A histogram of line spacing for two-line varieties of Coles Creek Incised also shows a bimodal distribution (Figure 3.61). The first cluster of sherds has 1 to 4 mm line spacing and generally was classified as *Chase.* The second cluster of sherds has 5 to 9 mm spacing and generally was classified as *Hunt.* Thus, the *Chase-Hunt* distinction is supported by the quantitative data. However, as indicated in the histogram, some sherds were classified differently than would be expected if only line spacing was taken into consideration. These anomalous assignments are due to a preponderance of other attributes, such as distance from the rim to the top line and neatness of the incising, that clearly identify the sherd to a single variety (e.g., two very messy incisions far from the rim were classified as *Hunt* even if they were closely spaced). As the *Chase-Hunt* distinction is a still a continuum (albeit one with quantitative support), I am not bothered by these exceptions. However, they do explain why others have created additional two-line varieties. Should these outlying groups prove to be more numerous at other sites, additional varieties may be warranted.

Wells (1998:130) uses the following attributes to separate two-line varieties of Coles Creek Incised at the Shackleford Lake and Lisa's Ridge sites in Tensas Parish, Louisiana:

> (1) the presence of absence of a rim strap (*Chase/Choctaw Bayou* versus *Wilsonia/Newell Ridge,* (2) space of these lines (separating *Chase* from *Choctaw Bayou* as well as *Wilsonia* from *Newell Ridge*, as well as (3) paste texture (separating the finer *Chase* and *Wilsonia* from the coarser *Choctaw Bayou* and *Newell Ridge*), and (4) presence of a lip line (further separating *Chase* from the other three).

Table 3.3. Counts and percentages of the two categories of Coles Creek Incised, *var. Phillips* in the Feltus assemblage showing an decrease in Category A and an increase in Category B through time.

	Category A		Category B	
Phase	**#**	**%**	**#**	**%**
Sundown	60	58	43	42
Ballina	46	54	39	46
Balmoral	7	23	23	77

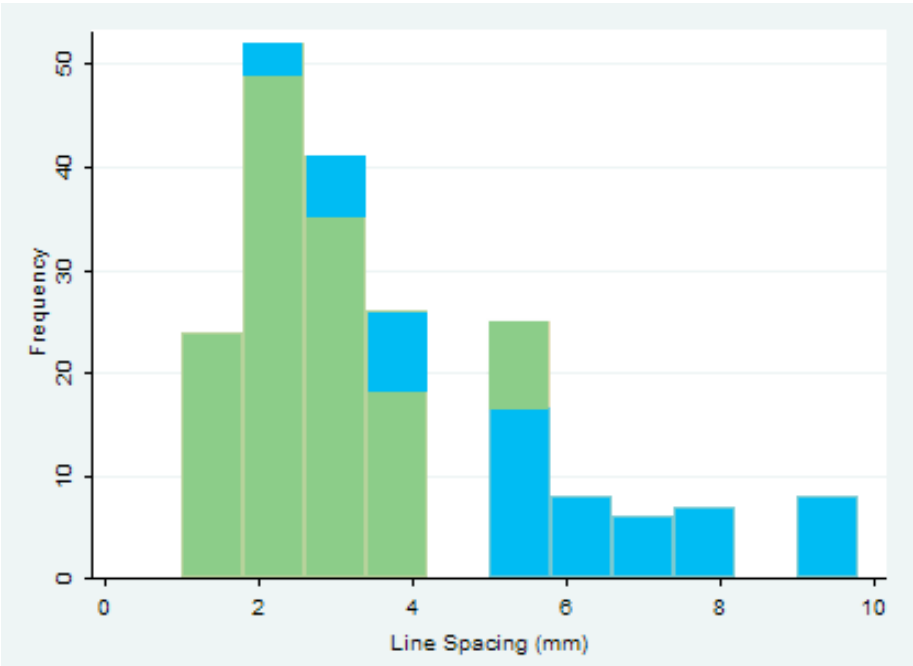

Figure 3.61. Histogram of line spacing for two-line varieties of Coles Creek Incised showing two clusters: one with 1 – 4 mm line spacing (*Chase*) and another with 5 – 9 mm line spacing (*Hunt*).

Using this nomenclature, the group of *Chase* sherds at Feltus that have line spacing around 5 mm would be better classified as *Choctaw Bayou.* However, because these two varieties have the same temporal span, dividing them serves no discernible purpose beyond making the variety designations fit the quantitative data more closely. None of Wells's varieties fit the sherds from Feltus that were classified as *Hunt* due to poor execution but show lines spaced 2 to 3 mm apart. The presence of these sherds only in early contexts at Feltus suggests that *Hunt* is the correct categorization. However, should one choose to be a splitter, then the creation of a new variety would be necessary, but like the *Chase–Choctaw Bayou* distinction, the lack of temporal differentiation makes this an ostensibly unproductive division.

Finally, line spacing serves to further differentiate *Coles Creek* and *Mott.* Generally, line spacing ranges from 1 to 3 mm on *Mott* and from 4 to 7 mm on *Coles Creek*. That said, as with the two-line varieties, there are a few anomalous identifications. In these cases, whether or not the lines were overhanging was the defining characteristic. The stratigraphic position of these anomalous sherds at Feltus confirm their original identifications and provide support for continuing to use the presence of overhanging lines as a key characteristic in differentiating *Coles Creek* and *Mott.*

Ceramic Chronology at Feltus

Apart from radiocarbon dates, ceramics provide the most effective means of dating archaeological deposits in the LMV. Ceramic chronology has long been the focus of archaeologists working in the region and it is highly developed due to large-scale excavation of stratified sites and significant regional survey (e.g., Bitgood 1989; Brain et al. n.d.; Ford 1936; Ford 1951; Phillips et al. 1951; Phillips 1970; Williams and Brain 1983). Though the

exact temporal and geographic ranges of ceramic varieties are still being refined, their rough distributions are generally accepted and certain varieties have been heavily used in distinguishing phases within the chronological sequence of the Natchez Bluffs (Brain et al. n.d.). Here, I combine the ceramic data from Feltus with the radiocarbon dates reported in Chapter 2. This analysis has two primary objectives: (1) to date analysis units at Feltus for which no material was radiocarbon dated, (2) to refine the Natchez Bluffs ceramic chronology using our knowledge of radiocarbon dates, stratigraphy, and ceramic assemblages at Feltus.

The Feltus ceramic assemblage spans the Issaquena phase of the Marksville period through the Gordon phase of the late Coles Creek period. However, the collection is dominated by diagnostic materials dating from the Baytown through early Coles Creek periods—the Hamilton Ridge, Sundown, and Ballina phases (Table 3.4). This fits well with the radiocarbon dates from Feltus, which suggest that activity took place at the site from the Hamilton Ridge through Balmoral phases.

The Issaquena phase (AD 300–400) was originally defined in the Lower Yazoo basin, but Phillips (1970:755-858, 838-894) refined its definition and extended it to include materials from the Tensas and Natchez Bluffs. At Feltus, Issaquena phase varieties include Hollyknowe Ridge Pinched, *var. Hollyknowe,* Marksville Incised, *var. unspecified* and Marksville Stamped, *vars. Mabin, Manny,* and *Troyville.* They occur in very small quantities and only as inclusions in secondary deposits and thus are not considered evidence of the site's occupation during the Marksville period. We know that the landscape around Feltus was occupied during this period due to excavations at nearby Pumpkin Lake (Kassabaum et al. 2014b), so Issaquena phase diagnostics being included in secondary deposits at Feltus is

Table 3.4. Chronological chart of the ceramic varieties in the Feltus assemblage (adapted from Brain et al. n.d.). Lowercase exes (x) represent relatively low frequencies while uppercase exes (X) represent relatively high frequencies (adapted from Brain et al. n.d.).

Type, *variety*	Issaquena	Hamilton Ridge	Sundown	Ballina	Balmoral	Gordon
Baytown Plain, *var. Addis*						x
Mazique Incised, *var. Manchac*						x
Plaquemine Brushed, *var. Plaquemine*						x
Harrison Bayou Incised, *var. unspecified*						x
Beldeau Incised, *var. unspecified*					x	x
Coleman Incised, *var. unspecified*					x	x
Coles Creek Incised, *var. Mott*					X	
Coles Creek Incised, *var. Blakely*					x	
Mazique Incised, *var. Kings Point*					x	
Coles Creek Incised, *var. Coles Creek*			x	X		
French Fork Incised, *var. Larkin*			x	X		
Chevalier Stamped, *var. Chevalier*			X	X		
Coles Creek Incised, *var. Anathasio*			x	x		
Coles Creek Incised, *var Campbellsville*			x	x		
Coles Creek Incised, *var. Ely*			x	x		
Coles Creek Incised, *var. Phillips B*			X	X		
Coles Creek Incised, *var. Stoner*			X	X		
French Fork Incised, *var. French Fork*			X	X		
French Fork Incised, *var. Laborde*			X	X		
Mazique Incised, *var. Mazique*			X	X		
Larto Red, *var. Silver Creek*			x			
Mulberry Creek Cord Marked, *var. Smith Creek*			X			
Coles Creek Incised, *var. unspecified*		X	X	X	x	
French Fork Incised, *var. unspecified*		X	X	X	x	
Chevalier Stamped, *var. unspecified*		X	X	X		
Alligator Incised, *var. unspecified*		X	x	x		
Mulberry Creek Cord Marked, *var. unspecified*		X	X	X		
Alligator Incised, *var Oxbow*		X	x			
Coles Creek Incised, *var. Chase*		X	X			
Coles Creek Incised, *var. Hunt*		X	X			
Coles Creek Incised, *var. Judd Bayou*		x	x			
Coles Creek Incised, *var. Phillips A*		X	X			

Table 3.4. Continued.

Type, *variety*	Issaquena	Hamilton Ridge	Sundown	Ballina	Balmoral	
French Fork Incised, *var. Wilzone*		X	x			
Larto Red, *var. Larto*		X	X			
Landon Red on Buff, *var. Landon*		x				
Mulberry Creek Cord Marked, *var. Edwards*		X				
Salomon Brushed, *var. Salomon*		x				
Woodville Zoned Red, *var. Woodville*		X				
Pontchartrain Checked Stamped, *var. unspecified*	x	X	x			
Alligator Incised, *var. Alligator*	x	X				
Hollyknowe Ridge Pinched, *var Hollyknowe*	x	x				
Marksville Incised, *var. unspecified*	x					
Marksville Stamped, *var. Mabin*	x					
Marksville Stamped, *var. Manny*	x					
Marksville Stamped, *var. Troyville*	x					
Baytown Plain, *var. unspecified*	x	X	X	X	x	x

not surprising. Alligator Incised, *var. Alligator* is also an Issaquena phase variety, but its abundance at Feltus and stratigraphic association with other Baytown period varieties certainly argues for its dominance through the Hamilton Ridge phase as well.

The Hamilton Ridge phase (AD 400–750) was defined by Brain et al. (n.d.) and marks the beginning of heavy occupation at Feltus. Falling between the relatively well-understood Marksville and Coles Creek periods, “the Baytown period, in which this phase belongs, is among the least understood in the LMV's ceramic sequence” (Brain et al. n.d.).[20]

[20] Additional Baytown period phases have been identified throughout the LMV (Bitgood 1989:92-117; Kidder 1993:19; Phillips 1970:908). Brain et al. (n.d.) decided not to subdivide the period in the Natchez Bluffs, citing low quality data and the lack of two important diagnostics in local collections. One of these, Qualforma Red and White is also absent from Feltus. The other, Landon Red on Buff, is present at Feltus, albeit as only a single sherd. Taken alone, this one sherd may indicate that there is an early Baytown presence at Feltus, though it could also be a secondary inclusion.

All known Hamilton Ridge markers are present in the Feltus collections. Diagnostic varieties include Alligator Incised, *vars. Alligator* and *Oxbow,* Coles Creek Incised, *vars. Hunt* and *Phillips A,* Landon Red on Buff, *var. Landon,* Larto Red, *var. Larto,* Salomon Brushed, *var. Salomon,* and Woodville Zoned Red, *var. Woodville.* The few sherds of Pontchartrain Checked Stamped, *var. unspecified* likely date to this period as well. Finally, paste characteristics and stratigraphic associations at Feltus indicate that some *unspecified* sherds of Alligator Incised, Chevalier Stamped, Coles Creek Incised, French Fork Incised, and Mulberry Creek Cord Marked may also date to this period.

This time span has often been viewed as a transitional period between Marksville and Coles Creek with no unique characteristics (Belmont 1982:72; Bitgood 1989:5-6). However, the presence of a distinct Baytown ceramic assemblage is strongly supported by a correspondence analysis of the Feltus data (Figure 3.62). Simply stated, correspondence analysis is a statistical method for identifying the degree to which the values of one categorical variable (ceramic variety) correlate with the values of another (stratigraphic analysis unit). By plotting these associations in two-dimensional space, correspondence analysis produces a graphical representation of the relationships among the values, such that points appearing close together (or in the same portion of the graph) tend to be positively associated, while those that are farther apart are either not associated or negatively associated (Shennan 1997:308-360).

The biplot for the Feltus ceramic assemblage shows a clear cluster of varieties (*Salomon, Landon, Alligator,* and *Woodville*) and analysis units (Feature 59 and B1.S0) that rank highly on Dimension 1. Despite a lack of radiocarbon dates from these contexts, I am confident identifying them as Baytown occupations of the Feltus landscape based on this

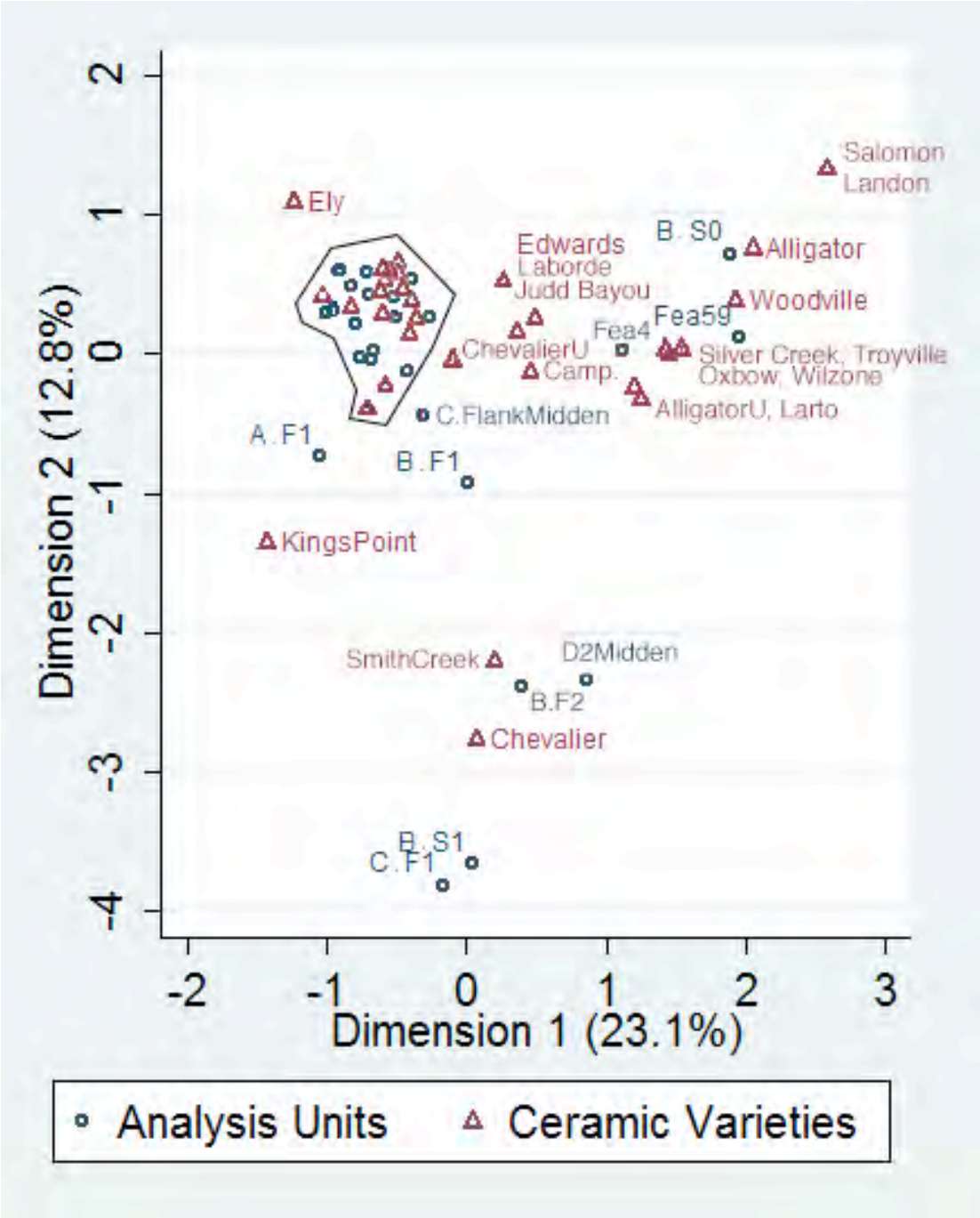

Figure 3.62. Correspondence analysis biplot for the Feltus ceramic assemblage showing a cluster of Baytown varieties and analysis units with values above 1.0 on Dimension 1. The Coles Creek assemblage clusters with values between 1.0 and -1.0 of Dimension 1. (Circled area represents a cluster of analysis units and ceramic varieties including: *Hollyknowe, Phillips A, Harrison Bayou, Larkin,* Pontchartrain Check Stamped, *Anathasio,* Beldeau Incised, *Chase, Stoner, Hunt, Coles Creek, Frenh Fork,* Marksville Incised, *Phillips B,* and *Mott,* as well as A1.S0, D4.Midden, D2. Mixed, B.S2, C2.Platform, B.F4, A2.S0, D4.Borrow Pit, A1.Wash, B.Feature 163, B.S4, B.F3, B.S3, A.F4, and B.F5.)

ceramic analysis. As the biplot gets more crowded, the raw correspondence analysis data helps elucidate the relationships between points (Tables 3.5 and 3.6). Additional Baytown varieties also rank above 1.00 on Dimension 1 (e.g. *Oxbow, Wilzone, Larto,* as well as Alligator Incised, *var. unspecified*), as does the Feature 4 context. These varieties likely span the Hamilton Ridge and Sundown phases and thus are found in a wider variety of contexts at Feltus, pulling them closer to the center of the biplot. The numerous varieties that fall between 1.00 and -1.00 on Dimension 1 represent a more classic Coles Creek assemblage.

Brain et al. (n.d.) note that the Sundown phase (AD 750–850) "represents a transitional unit between "classic" Baytown and "classic" Coles Creek. And for this reason, could just as easily be classified in either tradition." Proving their point, Brain et al. (n.d.) define it as early Coles Creek, while Bitgood (1989) defines it terminal Baytown. The Feltus ceramic sequence largely supports Bitgood's presentation of the Baytown-Coles Creek transition, which delays the beginning of Coles Creek by including both the Hamilton Ridge and Sundown phases in Baytown. In this interpretation, the Baytown period ends with the final disappearance of ceramic types such as Alligator Incised and Woodville Zoned Red and the appearance of the Coles Creek mound-and-plaza arrangement (Bitgood 1989:138-139).

Sundown phase materials are abundant in the Feltus collections and encompass the vast majority of the premound activity at the site. Alligator Incised, *var. Oxbow,* Coles Creek Incised, *vars. Chase, Hunt, Judd Bayou,* and *Phillips A,* French Fork Incised, *var. Wilzone,* and Larto Red, *var. Larto* all continue from Hamilton Ridge into Sundown and Mulberry Creek Cord Marked, *var. Smith Creek* and Larto Red, *var. Silver Creek* are additional markers of the Sundown Phase. Again, paste characteristics and stratigraphic associations at Feltus indicate that some *unspecified* sherds of Chevalier Stamped, Coles Creek Incised,

Table 3.5. Raw data on ceramic type and variety from the correspondence analysis shown in Figure 3.62 sorted by Dimension 1 coordinate. Early varieties cluster with values above 1.

					Dimension 1		Dimension 2	
Type	**Variety**	**Mass**	**Quality**	**Inertia**	**Coor-dinate**	**Contri-bution**	**Coor-dinate**	**Contri-bution**
Landon Red on Buff	*Landon*	0.001	0.340	0.006	2.586	0.008	1.324	0.003
Salomon Brushed	*Salomon*	0.001	0.340	0.006	2.586	0.008	1.324	0.003
Alligator Incised	*Alligator*	0.047	0.609	0.112	2.051	0.268	0.757	0.049
Marksville Stamped	*Woodville*	0.014	0.483	0.036	1.929	0.073	0.385	0.004
Larto Red Filmed	*Silver Creek*	0.003	0.448	0.004	1.539	0.008	0.032	0.000
Marksville Stamped	*Troyville*	0.001	0.448	0.001	1.539	0.003	0.032	0.000
Alligator Incised	*Oxbow*	0.036	0.568	0.043	1.450	0.105	-0.012	0.000
French Fork Incised	*Wilzone*	0.023	0.495	0.030	1.424	0.063	0.019	0.000
Alligator Incised	*unspecified*	0.007	0.083	0.042	1.251	0.015	-0.331	0.001
Larto Red Filmed	*Larto*	0.058	0.750	0.036	1.204	0.114	-0.244	0.006
French Fork Incised	*Laborde*	0.013	0.152	0.010	0.607	0.006	0.155	0.001
Coles Creek Incised	*Campbells-ville*	0.007	0.016	0.032	0.477	0.002	-0.143	0.000
Coles Creek Incised	*Judd Bayou*	0.025	0.041	0.029	0.359	0.004	0.156	0.001
Mulberry Creek CM	*Edwards*	0.077	0.109	0.060	0.258	0.007	0.520	0.038
Chevalier Stamped	*unspecified*	0.031	0.016	0.007	0.094	0.000	0.048	0.000
Chevalier Stamped	*Chevalier*	0.020	0.530	0.070	0.066	0.000	-2.777	0.287
Mulberry Creek CM	*Smith Creek*	0.058	0.746	0.090	0.013	0.000	-2.227	0.523
Hollyknowe Pinched	*Hollyknowe*	0.003	0.002	0.007	-0.082	0.000	0.119	0.000

Table 3.5. Continued.

Type	Variety	Mass	Quality	Inertia	Dimension 1		Dimension 2	
					Coor-dinate	Contri-bution	Coor-dinate	Contri-bution
Coles Creek Incised	*Phillips A*	0.096	0.020	0.020	-0.107	0.001	-0.049	0.000
Harrison Bayou Incised	*Harrison Bayou*	0.001	0.054	0.002	-0.591	0.000	-0.233	0.000
French Fork Incised	*Larkin*	0.068	0.406	0.025	-0.593	0.033	0.413	0.021
Pontchartrain Check Stamped	*unspecified*	0.003	0.054	0.007	-0.614	0.002	0.052	0.000
Coles Creek Incised	*Anathasio*	0.002	0.032	0.007	-0.622	0.001	0.147	0.000
Beldeau Incised	*unspecified*	0.001	0.032	0.003	-0.622	0.000	0.147	0.000
Coles Creek Incised	*Chase*	0.065	0.456	0.020	-0.663	0.039	0.087	0.001
Coles Creek Incised	*Stoner*	0.058	0.335	0.030	-0.670	0.036	0.344	0.013
Coles Creek Incised	*Hunt*	0.030	0.288	0.016	-0.683	0.019	-0.013	0.000
Coles Creek Incised	*Coles Creek*	0.130	0.610	0.041	-0.707	0.089	0.378	0.034
French Fork Incised	*French Fork*	0.025	0.241	0.016	-0.707	0.017	-0.008	0.000
Marksville Incised	*unspecified*	0.003	0.044	0.015	-0.714	0.002	-0.399	0.001
Coles Creek Incised	*Phillips B*	0.089	0.472	0.033	-0.729	0.065	0.163	0.004
Coles Creek Incised	*Mott*	0.003	0.019	0.052	-1.037	0.004	0.411	0.001
Coles Creek Incised	*Ely*	0.001	0.120	0.005	-1.241	0.002	1.093	0.002
Mazique Incised	*Kings Point*	0.002	0.021	0.086	-1.435	0.005	-1.358	0.006

Table 3.6. Raw data on analysis units from the correspondence analysis shown in Figure 3.62 sorted by Dimension 1 coordinate. Early contexts cluster with values above 1.

Category	Mass	Quality	Inertia	Dimension 1		Dimension 2	
				Coor-dinate	Contri-bution	Coor-dinate	Contri-bution
D2.Feature 59	0.012	0.268	0.054	1.965	0.063	0.116	0
B.S0	0.055	0.514	0.134	1.89	0.269	0.722	0.053
D2.Feature 4	0.206	0.737	0.111	1.125	0.356	0.018	0
D2.Midden	0.002	0.088	0.029	0.865	0.002	-2.346	0.017
B.F2	0.015	0.621	0.034	0.39	0.003	-2.396	0.16
B.S1	0.019	0.774	0.08	0.046	0	-3.671	0.481
B.F1	0.026	0.34	0.016	0.007	0	-0.931	0.042
C1.F1	0.003	0.273	0.043	-0.174	0	-3.824	0.091
C2.Flank Midden	0.006	0.014	0.033	-0.321	0.001	-0.441	0.002
A1.S0	0.129	0.237	0.064	-0.399	0.028	0.539	0.069
D4.Midden	0.16	0.534	0.019	-0.432	0.041	-0.127	0.005
D2.Mixed	0.098	0.12	0.055	-0.455	0.028	0.08	0.001
B.S2	0.004	0.096	0.004	-0.506	0.001	0.269	0.001
C2.Platform	0.005	0.14	0.006	-0.605	0.003	0.452	0.002
B.F4	0.013	0.155	0.012	-0.609	0.006	0.378	0.003
A2.S0	0.108	0.329	0.04	-0.612	0.055	0.109	0.002
D4.Borrow Pit	0.035	0.544	0.013	-0.717	0.024	-0.419	0.011
A1.Wash	0.01	0.207	0.013	-0.824	0.009	0.498	0.005
B.Feature 163	0.063	0.45	0.048	-0.907	0.071	0.596	0.041
B.S4	0.003	0.188	0.005	-0.915	0.004	0.416	0.001
B.F3	0.009	0.04	0.071	-0.921	0.011	0.4	0.003
B.S3	0.002	0.156	0.003	-0.937	0.002	0.426	0.001
A.F4	0.006	0.15	0.012	-0.952	0.007	0.314	0.001
B.F5	0.002	0.076	0.007	-0.998	0.002	0.299	0
A.F1	0.008	0.044	0.091	-1.049	0.013	-0.74	0.009

French Fork Incised, and Mulberry Creek Cord Marked likely also date to this period. A number of varieties span the Sundown period and the subsequent Ballina period, including Chevalier Stamped, *var. Chevalier*, Coles Creek Incised, *vars. Anathasio, Campbellsville, Ely, Phillips B* and *Stoner,* French Fork Incised, *vars. French Fork* and *Laborde*, and Mazique Incised, *var. Mazique,* and may also characterize these deposits.

Sundown phase deposits at Feltus have been identified based on both radiocarbon dates and ceramic data and are concentrated in the Mound D area (i.e., Feature 4 and the midden overlaying it, and some of the large posts in D1 and D4). They are identified by the continuation of characteristically Baytown ceramic varieties, abundance of Sundown ceramic markers, and increasing abundance of some later varieties. *Edwards, Phillips A,* and *Wilzone* are particularly well associated with these premound deposits and are not as commonly found in mound deposits at Feltus.

The Ballina phase (AD 850–1000) is defined in the Natchez Bluffs by Brain et al. (n.d.) based on the previously defined, concurrent phase in the Tensas. We know from radiocarbon dates that much of the mound building at Feltus took place during this time. Ballina phase deposits are marked by the continuation of the varieties mentioned above as spanning the Sundown to Ballina transition, and by the increasing frequency of Coles Creek Incised, *var. Coles Creek* and French Fork Incised, *var. Larkin.* While both of these varieties become more common after mound building begins at Feltus, they are also present in the earlier Sundown deposits. The Feltus collection, therefore, does not lend a lot of support to the differences outlined by others for the Sundown-Ballina transition (e.g., Brain et al. n.d.; cf. Williams and Brain 1983), but instead implies that the primary change is the rapid decline in frequencies of earlier Hamilton Ridge varieties (see also Bitgood 1989).

Based on radiocarbon dates, Ballina contexts at Feltus include the submound midden and some or all of the construction episodes of Mound A, at least three construction episodes of Mound B, and potentially the construction of Mound D (based on dates from the base of the borrow pit to its south). This is largely supported by the ceramic data as these analysis

units contain very few, if any, Baytown or Balmoral varieties[21] and are dominated by *Coles Creek, Larkin, Smith Creek, Phillips B,* and *Chase.* Ceramically, the Mound A premound middens appear a bit earlier than the mound deposits due to the higher proportions of *Edwards* relative to *Smith Creek* and of *Phillips A* to *Phillips B,* perhaps indicating that these varieties were slightly slower to change than others.

The Balmoral phase (AD 1000–1100) is also borrowed from the Tensas sequence (Brain et al. n.d.) and is characterized by the appearance of a number of new varieties, fewer than half of which occur at Feltus. These include Beldeau Incised, *var. unspecified,* Coleman Incised, *var. unspecified,* Coles Creek Incised, *vars. Mott* and *Blakely,* and Mazique Incised, *var. Kings Point.* None of these varieties occur with any frequency at Feltus (and their occasional appearance is most common in deposits confidently dated to the Ballina phase). That said, if the dates set by Brain et al. (n.d.) are accepted, then Balmoral phase deposits at Feltus are confirmed by radiocarbon dates from the upper stages of Mound B, Mound C, the midden at the base of the borrow pit in the Mound D area, and at least one large post from D4. Looking only at the ceramics from these contexts, their assemblages do not differ dramatically from the preceding Ballina phase. The most dramatic change seems to be quantities of *Chase, Edwards, Hunt,* and *Phillips A* drop off significantly while *Stoner* seems to increase; however his does not fit the expected pattern outlined in Brain et al. (n.d.).

It is thus important to examine the evidence for and against a Ballina-Balmoral distinction at Feltus at the date expected (Brain et al. n.d.; Kidder 1993). Brain et al. (n.d.) remark, “in light of new radiocarbon dates and calibrations, its [the Balmoral phase’s] position on the absolute time scale has gotten younger by about a century.” As outlined above, the evidence for the shift to a Balmoral phase ceramic assemblage at the time

[21] A refitted sherd of *Kings Point* from A.F1 and two *Mott* sherds from B.F3 are exceptions to this.

expected is scanty. However, a tentative break in the Feltus radiocarbon sequence before B.S4 and shifts in mound building practices immediately after B.S4 provide non-ceramic support for the temporal position of this shift (see discussion in Chapter 2). Ceramically distinct Balmoral phase occupations are visible at other sites in the Natchez Bluffs (e.g., LaDu 2009), making it anomalous that this shift is not very visible at Feltus given the dates of the sites occupation. There are three possible explanations for this anomaly. First, the transition from Ballina to Balmoral may need to be pushed even later in time such that it occurs only after Feltus was largely abandoned. Second, the expression of Balmoral ceramics may be missing at Feltus in particular though it occurred at other nearby sites. Or third, the Balmoral phase Feltus collections may be overwhelmed by the inclusion of earlier ceramics in the mound fill.

Varieties confidently identified to the Gordon phase (AD 1100–1200) include Baytown Plain, *var. Addis*, Mazique Incised, *var. Manchac*, and Plaquemine Brushed, *var. Plaquemine.* The *Manchac* and *Addis* sherds were from plow zone contexts and may represent later admixture. The *Plaquemine* sherds are concentrated only on B.S5. Beldeau Incised, Coleman Incised and Harrison Bayou Incised also occur in very low frequencies at Feltus. They are often considered Gordon phase types, but are classified here as *unspecified* due to paste inconsistencies. All examples occur on Coles Creek-like paste and likely represent earlier variants. It therefore seems clear that Feltus was largely abandoned by the Gordon phase, with the exception of Mound B's summit, which may have been reoccupied during this time.

In conclusion, Feltus was occupied throughout Baytown and Coles Creek times and thus has the potential to significantly augment our understanding of the relationship between

these two important periods (Table 3.7). The most distinct transition in the ceramic data at Feltus occurs at the shift from the Sundown to the Ballina phase and thus I have used this as the dividing line between Baytown and Coles Creek. As predicted by Bitgood (1989), this occurs when a number of varieties drop out almost completely from the assemblage, not when new varieties enter it. This shift in ceramic frequencies also aligns well with the beginning of mound building at the site. While this shift in site use at the beginning of the Coles Creek period would have been a dramatic transition, the layout of the site (including the purposeful creation of the central plaza area) was likely set during the preceding Baytown period, emphasizing a smooth transition (see also Belmont 1967; Bitgood 1989:144; Williams and Brain 1983:406). In support of this, there are no Ballina phase diagnostics at Feltus that do not also characterize Sundown phase assemblages (see Table 3.4; see also Ryan 2004). All of the available evidence thus supports the smooth development of Coles Creek cultural traits from earlier Baytown ones (including ceramics and site layout as discussed here, but also mound building, burial, and subsistence practices as discussed earlier in this chapter) (Bitgood 1989:144).

Table 3.7. Summary table of the Feltus chronology including activities taking place during each phase and information about dating at the site (radiocarbon and ceramic methods).

Phase	**Dates (AD)**	**Radiocarbon Dates**	**Ceramic Assemblage at Feltus**	**Occupations at Feltus**
Gordon	1100–1200	None	Baytown Plain, *var. Addis*; Beldeau Incised, *var. unspecified*; Coleman Incised, *var. unspecified*; Harrison Bayou Incised, *var. unspecified*; Mazique Incised, *var. Manchac*; Plaquemine Brushed, *var. Plaquemine*	Reuse of the Mound B (and A?) summit (B.S5)
Balmoral	1000–1100	Cal AD 1088 (D4.Feature 131) Cal AD 1082 (D4.Borrow Pit) Cal AD 1073 (C3.S1) Cal AD 1066 (B.S4)	Beldeau Incised, *var. unspecified*; Coleman Incised, *var. unspecified*; Coles Creek Incised, *vars. Mott* and *Blakely*; Mazique Incised, *var. Kings Point*	Additional mound building on Mound B (B.F4-F5) and Mound C (and D?); Additional post-setting in the South Plaza and refilling of the V4 borrow pit
Ballina	850–1000	Cal AD 998 (B.S3) Cal AD 995 (D4.Borrow Pit) Cal AD 992 (A2.S0) Cal AD 951 (A.S1) Cal AD 935 (B.F3) Cal AD 906 (A1.Feature 37)	Chevalier Stamped, *var. Chevalier*; Coles Creek Incised, *vars. Anathasio*; *Campbellsville*, *Coles Creek*, *Ely*, *Phillips B* and *Stoner*; French Fork Incised, *vars. French Fork*, *Laborde*, and *Larkin*; Mazique Incised, *var. Mazique*	Two or three episodes of feasting, post-setting, and mound building focusing on Mounds A and B (and D?); *Early* (A1.S0, A.F1); *Middle* (A.S1-F2, B.F1-S2,); *Late* (A.S2-F4, A2.S0, B.F3-S3; V4.Borrow Pit excavated)

Table 3.7. Continued.

Phase	**Dates (AD)**	**Radiocarbon Dates**	**Ceramic Assemblage at Feltus**	**Occupations at Feltus**
Sundown	750–850	Cal AD 813 (D4.Feature 139) Cal AD 762 (D1.Feature 1) Cal AD 762 (D2.Feature 4)	Alligator Incised, *var. Oxbow*; Chevalier Stamped, *var. Chevalier*; Coles Creek Incised, *vars. Anathasio, Campbellsville, Chase, Coles Creek, Ely, Hunt, Judd Bayou, Phillips A* and *B*, and *Stoner*; French Fork Incised, *vars. French Fork, Laborde, Larkin*, and *Wilzone*; Larto Red, *vars. Larto* and *Silver Creek*; Mazique Incised, *var. Mazique*; Mulberry Creek Cord Marked, *var. Smith Creek*	Two episodes of feasting and post-setting in the South Plaza; *Early* (D2.Feature 4, some D1 and D4 posts); *Late* (D2. Midden, some D1 and D4 posts)
Hamilton Ridge	400–750	None	Alligator Incised, *vars. Alligator* and *Oxbow*; Coles Creek Incised, *vars. Hunt* and *Phillips A*; Landon Red on Buff, *var. Landon*; Larto Red, *var. Larto*; Salomon Brushed, *var. Salomon*; Woodville Zoned Red, *var. Woodville*	Minimal; South Plaza (D2.Feature 59) and premound surface in the Mound B area (B.S0)
Issaquena	300–400	None	Hollyknowe Ridge Pinched, *var. Hollyknowe*; Marksville Incised, *var. unspecified*; Marksville Stamped, *vars. Mabin, Manny*, and *Troyville*	None; Ceramics appear only as secondary inclusions.

CHAPTER 4

FUNCTIONAL ANALYSIS OF POTTERY

The ceramic analysis in the previous chapter focused on variations in decoration as characterized by type and variety. However, decorative treatment represents only one step in a series of choices that a potter must make when crafting a ceramic vessel. It is important to also recognize variables such as raw material, forming, firing, shape, and size as resulting from important choices made by the potter. In particular, vessel shape and size are meaningful in that they reveal a great deal about vessel function (Braun 1980; 1983; Ericson and Stickel 1973; Hally 1983; Hally 1986; Henrickson and McDonald 1983; Rice 1987; Shepard 1956; Steponaitis 1983).

While ceramic vessels may serve a variety of functions, there are common functional forms that are nearly universal, namely containers used for cooking, storing, and serving food and drink. By starting with the assumption that ceramic vessels are utilitarian objects that reflect the needs and desires of their users (Braun 1980; 1983), this chapter uses a functional analysis of the Feltus ceramics to investigate what types of activities took place at Feltus. When combined with the spatial and chronological information described in the previous two chapters, this analysis of vessel shape and size helps to identify differential use of space, activity areas, and changes in site use over time. Finally, using data on vessel function, Feltus is compared with other Coles Creek sites to reveal important similarities and differences in site use through time.

Modeling Coles Creek Vessel Form

Functional analyses often rely on collections of whole (or nearly whole) pots to identify shape classes and on ethnographic data or intuitive reasoning to assign specific functions to these classes (e.g., Braun 1980; DeBoer 1974; Hally 1986; Henrickson and McDonald 1983; Shepard 1956). However, no whole pots were recovered from the Feltus excavations and the fragmentary nature of the ceramic collection overall is problematic when considering the assemblage in this way. This section lays the groundwork for a functional analysis of the Feltus ceramics by devising a set of vessel forms common on Coles Creek sites, recording and quantifying the range of variation within and between these forms, and considering potential functional categories that correlate with the shape categories.

I rely on primarily on Ford's (1951) landmark study of the Greenhouse ceramics to provide a model assemblage from which to build my understanding of the range of variation in Coles Creek vessel form. This collection, excavated in the 1930s, was utilized heavily in assigning LMV ceramic types to particular time sequences. More importantly for my purposes, Ford's study included drawings of reconstructed vessel forms. While these drawings are artist's renditions of whole vessels based upon fragmentary material (Ford 1951:48), the scope of excavation at Greenhouse and level of vessel reconstruction allowed for more accurate estimations of vessel shape than is possible at Feltus. Patchett (2008) completed a pilot study using the Greenhouse collection as a model from which to study sherds collected by Robert Prospere in the ravines around Feltus. Here I expand on her study and apply this method to the excavated Feltus assemblage.

Establishing Shape Categories

To establish vessel shape categories, I used the illustrations from Ford (1951) and Phillips (1970). Limiting my data set to Coles Creek pots that were drawn as complete vessels, I was able to amass 97 illustrations. To my knowledge, these are the only images of whole Coles Creek vessels in existence. Especially because most of these pots were not found complete, but rather reconstructed from sherds, I remain open to adding to, subtracting from, or modifying these categories upon further examination of assemblages from Feltus and other contemporary sites.

I identified six basic vessel shapes through visual examination of contour and proportion: bowls, restricted bowls, pyramidal beakers, beakers, necked jars, and restricted jars. I then defined these categories based on visual recognition of a number of characteristics such as the number of inflection points (IP), corner points (CP), and points of vertical tangency (VT) along the vessel contour as defined by Shepard (1956:226). Additionally, I recorded the location of the widest and narrowest points on the vessel (Table 4.1). Examples of vessels from each of these shape categories are pictured in Figure 4.1. They were defined using the following criteria:

- Bowls (n = 24): no IP, CP, or VT; widest point at the rim and narrowest point at the base.
- Restricted bowls (n = 14): zero or one IP or CP (depending on the degree of neck/shoulder elaboration) and one VT; widest point at or above the midline and narrowest point at the base.
- Pyramidal beakers (n = 2): no IP, CP, or VT; widest point at the base and narrowest point at the rim.
- Beakers[1] (n = 16): no IP, CP, or VT; widest point at the rim and narrowest point at the base.

[1] Beakers are identical in definition to bowls, however they are taller. This difference in proportion will be discussed more in the following section.

Table 4.1. Observations used to define Coles Creek vessel forms: inflection points (IP), corner points (CP), points of vertical tangency (VT), location of the widest vessel diameter, and location of the narrowest vessel diameter.

Vessel Form	IP/CP (#)	VT (#)	Widest Point	Narrowest Point
Bowl	0*	0	Rim	Base
Restricted Bowl	0-1†	1	Midline or Above	Base
Pyramidal Beaker	0	0	Base	Rim
Beaker	0	0/All	Rim/All	Base/All
Necked Jar	1-2†	1-2†	Around Midline	Rim/Base/Neck
Restricted Jar	0	1	Midline or Above	Rim/Base

* unless carinated
† depending on degree of shoulder/neck elaboration

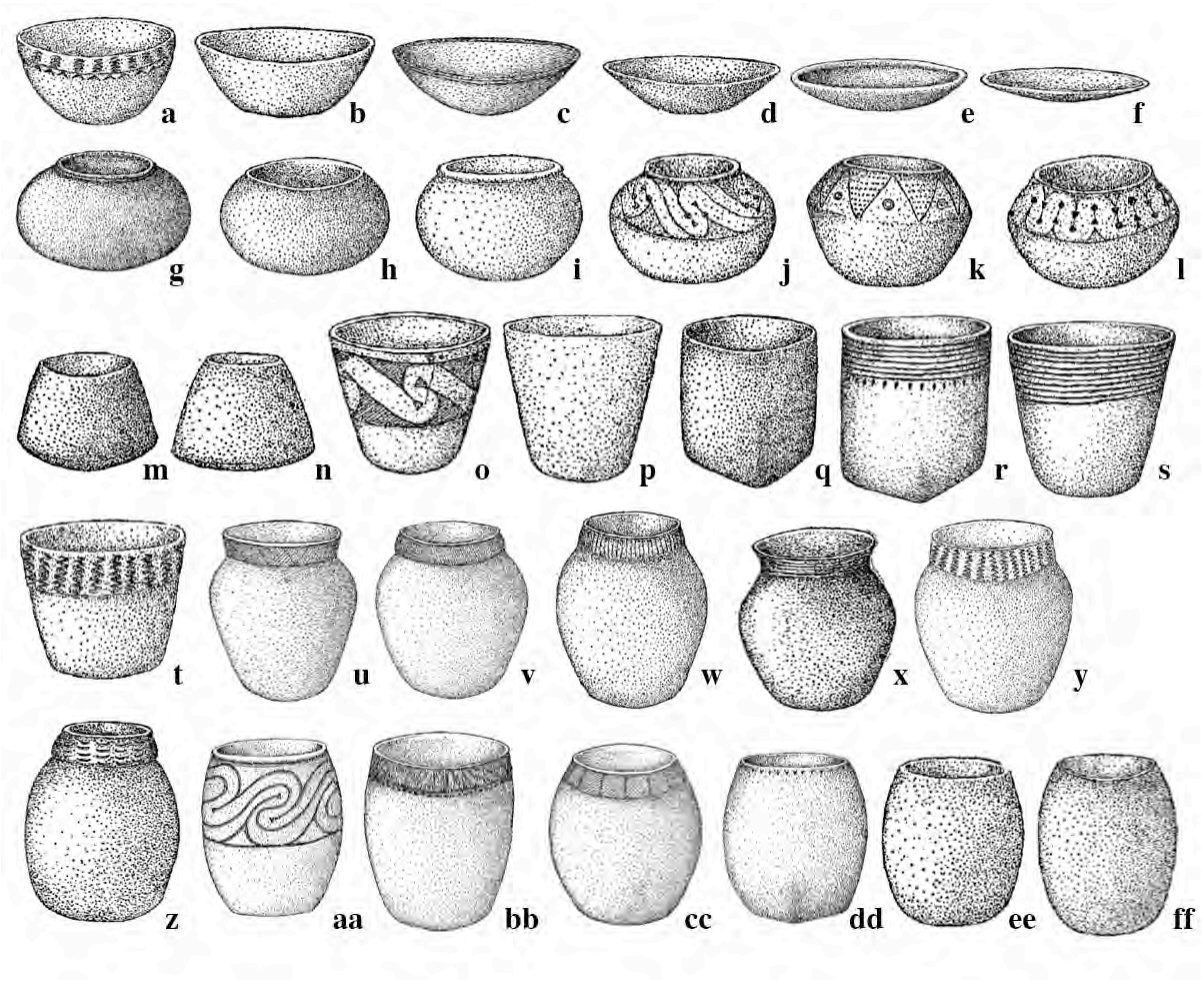

Figure 4.1. Examples of Coles Creek vessel shape categories. (a-f) bowls, (g-l) restricted bowls, (m-n) pyramidal beakers, (o-t) beakers, (u-z) necked jars, (aa-ff) restricted jars (adapted from Ford 1951).

- Necked jars (n = 25): presence of a neck[2] and one or two VT (at the widest point on the body and often, at the narrowest point on the neck); widest point near the midline and narrowest point at the rim, base, or neck.
- Restricted jars[3] (n = 16): no IP or CP and one VT; widest point at or above the midline and narrowest point at either the rim or the base.

As with any classification system, I had to prioritize certain criteria as those most important to characterizing different forms. In defining these six basic shapes, I emphasized characteristics that were exclusive to a small number of vessel forms and/or likely to be functionally significant. I ignored two secondary shape characteristics because they could be added or removed from any of the categories without significantly changing the utility of that vessel. The first is the presence of a carina on the vessel. A carina is defined as a "sharp angular turn in the vessel profile" (Sinopoli 1991:227) and occurs most commonly on bowls in this data set (Figure 4.2). The second and more common secondary shape characteristic is the addition of lugs, or flattened, sometimes decorated protuberances, to the rim of the vessel. Lugs appear on bowls, beakers, necked jars, and restricted jars and occur in two distinct styles—what Belmont (1983) refers to as Jackson and Joffrion lugs (Figure 4.3). These secondary characteristics did not play a role in the definition of my shape categories but their presence may alter the definitions listed in Table 4.1. These secondary characteristics may also suggest certain functional attributes of the pots on which they exist, such as ease of being picked up or carried or ease of covering (Braun 1980:173; Henrickson and McDonald 1983).

[2] A neck is defined as the area "between body and rim, marked by constriction and change in orientation of the vessel wall" and the presence of one or two independent IP or CP (Sinopoli 1991:228; see also Shepard 1956:230).

[3] Restricted jars are identical in definition to restricted bowls, however they are taller. This difference in proportion will be discussed more in the following section.

Figure 4.2. Examples of carinas on bowls (adapted from Ford 1951).

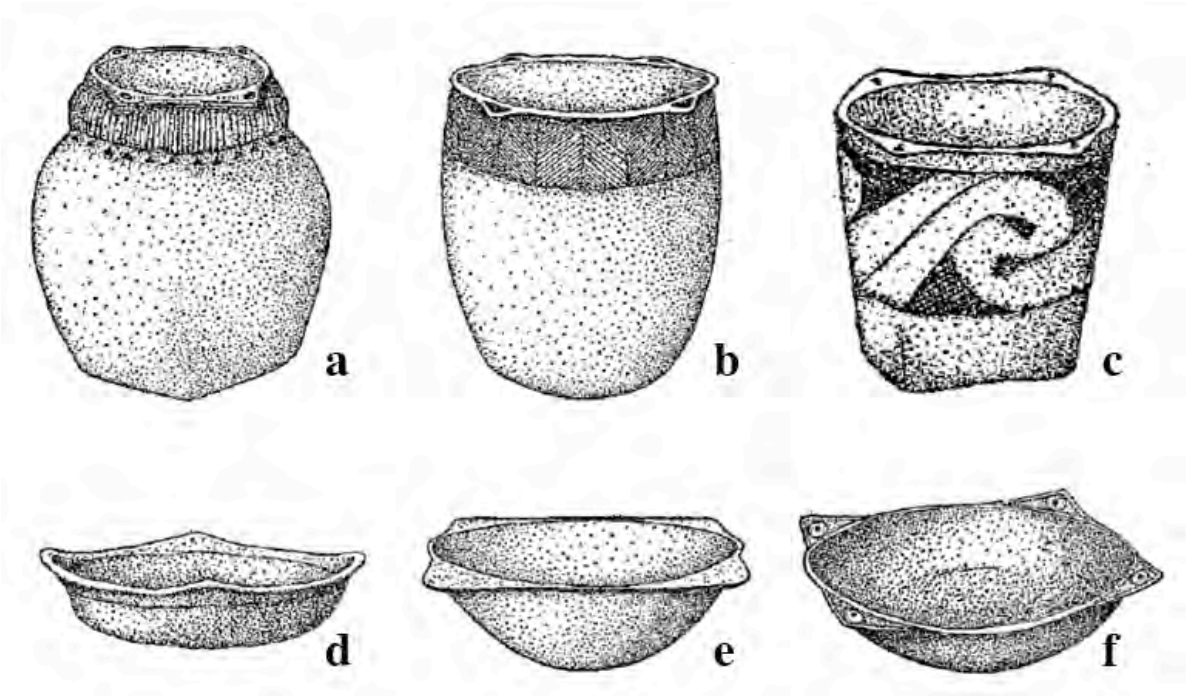

Figure 4.3. Examples of lugs on Coles Creek vessels. (a-c) Joffrion lugs. (d-f) Jackson lugs (adapted from Ford 1951).

Quantifying Variation in Shape Categories

Visual evaluation of vessel shapes can differ wildly based on optical illusions caused by differences in vessel contour (Shepard 1956:240-243, 248). Thus, my next step was to see if quantitative measurements supported the visual identifications discussed above. I took six measurements at characteristic points along the vessel contour to facilitate looking at relative proportions (Table 4.2). Because these drawings were published with no scale, I was unable to use the direct measurements to compare the vessels; instead, I used eight key ratios (Table 4.3). Of these, the one most sensitive to general vessel shape is the ratio of height to diameter at the widest point (H:WP); I focused on this ratio in order to test my initial categories.

A histogram of all H:WP values shows separate modes for bowls, restricted bowls/pyramidal beakers, beakers, and restricted jars/necked jars (Figure 4.4). As indicated above, a number of vessel forms have the similar definitions when relying only on the visual observations used above (i.e., bowls and beakers, and restricted bowls and restricted jars). The H:WP histogram can be broken apart to highlight the differences between these cases, clearly demonstrating good reason to divide them (Figure 4.5). Though other measures also show clear distinctions, I will not enumerate them here because the definitions based on critical points and H:WP ratio clearly differentiate all forms.

The previous paragraph deals primarily with quantifying and displaying variation *among* vessel shape categories; however, I also quantified variation *within* categories to see if there was reason to subdivide them. For example, other researchers working in the Southeast have divided bowls into subcategories such as plates, shallow bowls, deep bowls, etc. (e.g., Ryan 2004:92; Wells 1998:172; Steponaitis 1983:64-70). To determine if there was any quantitative reason for subdivision, I created a histogram of the H:WP values for each vessel

Table 4.2. List of the measurements taken on each vessel and the abbreviations used to refer to these measurements throughout this chapter.

Measurement	**Abbreviation**
Rim Diameter	RD
Diameter at the Widest Point	WP
Diameter at Shoulder	SD
Height	H
Height at the Widest Point	H@WP
Height at Shoulder	H@SD

Table 4.3. List of the ratios constructed for all whole vessels and what those ratios represent about general vessel shape.

Ratio	**Measure**	**High Value**	**Low Value**
RD:WP	Constriction at Rim	Less constricted	More Constricted
SD:WP	Constriction at Shoulder*	Less constricted	More Constricted
H:RD	Containment Security	High	Low
	Frequency of Access	Low	High
H@SD:SD	Containment Security*	High	Low
	Frequency of Access*	Low	High
H:WP	Shape of Vessel	Tall and Skinny	Short and Squat
H@WP:WP	Rate of Constriction at Base	Gradual	Rapid
H@WP:H	Location of Widest Point	High on Vessel	Low on Vessel
RD:SD	Degree of Flare in Neck	More Flared	Less Flared

*applies only to necked vessels may take the place of the ratio immediately above it.

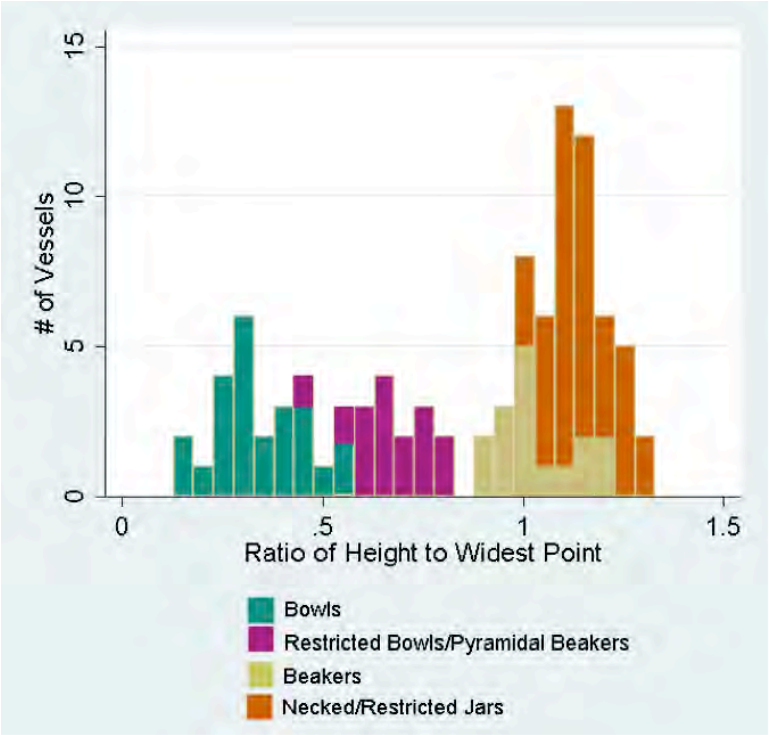

Figure 4.4. Histogram of H:WP values for all vessels showing a modal distribution that indicates separation between the vessel form categories.

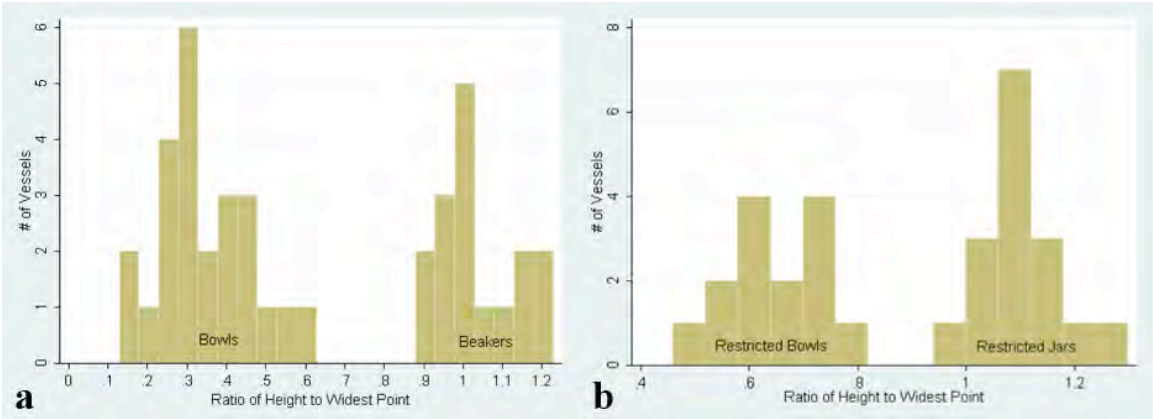

Figure 4.5. Histograms of H:WP values indicating clear separation between vessel categories with the same basic definition. (a) Bowls versus beakers. (b) Restricted bowls versus restricted jars.

class separately. Surprisingly, five of the six shape categories showed potential subcategories based on distinct breaks or multimodal distributions (Figure 4.6).

Beginning with beakers, there is a natural break between H:WP values of 1.10 and 1.17. Visually, this represents a shift from beakers with walls that slant outward from the base to the rim (n = 12) to beakers with vertical sides (n = 4) (Figure 4.7). This shift happens gradually and these subcategories should only be relied upon if additional reasons for splitting them apart are identified.[4]

Bowls, which are most commonly divided into subcategories by other researchers, have the most significant patterning. The trimodal distribution suggests three legitimate subcategories: shallow bowls (H:WP values below 0.20, n = 3), simple bowls (H:WP values between 0.25 and 0.35, n = 11), and deep bowls (H:WP values above 0.40, n = 10) (Figure 4.8). While these categories are not perfectly discrete, my analysis shows that there is quantitative validity to the bowl subcategories employed by other authors. Moreover, these subcategories are supported by functional arguments that differentiate between shallow and deep bowls (e.g., Bray 2003).

No visual differentiation between the three modes apparent on the necked jar histogram could be made. That said, Braun (1980:172) recognizes the shape of the vessel mouth and vessel walls surrounding the mouth as relating most closely to vessel function. In this case, it may be more productive to examine variables such as neck length, neck contour, degree of flare in the neck, and location of the point of maximum constriction. This has not been attempted here because these minute measurements are difficult to make accurately on the published drawings.

[4] The previously identified category of pyramidal beakers sets a precedent for relying on differences in wall angle to create additional categories.

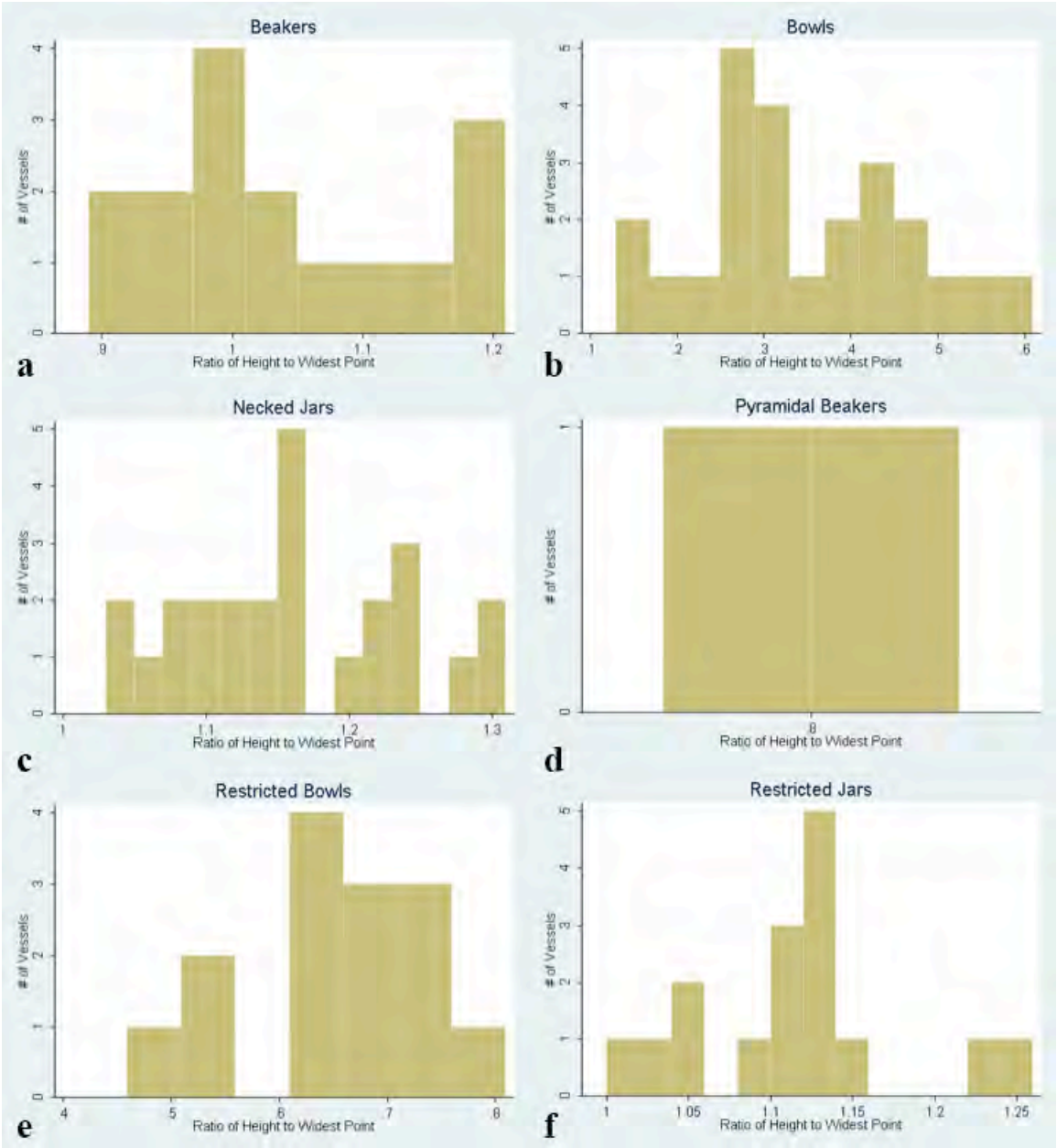

Figure 4.6. Histograms of H:WP values for each vessel shape category separately showing potential subcategories in five of the six groupings. (a) Beakers showing two potential subcategories. (b) Bowls showing three potential subcategories. (c) Necked jars showing three potential subcategories. (d) Pyramidal beakers showing only one category. (e) Restricted bowls showing two potential subcategories. (f) Restricted jars showing three potential subcategories.

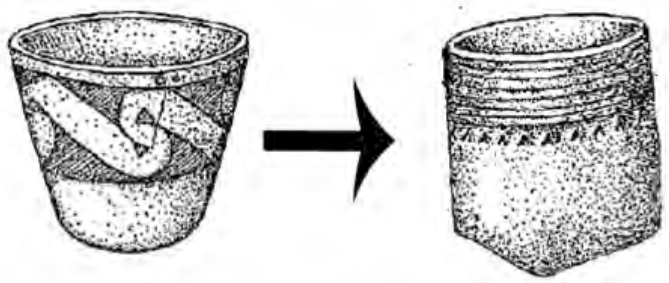

Figure 4.7. Illustration of the change in beakers as H:WP value increases bimodally, possibly indicating two subcategories: expanding and straight-sided beakers (adapted from Ford 1951).

Figure 4.8. Illustration of the change in bowls as H:WP value increases trimodally possibly indicating three subcategories: shallow bowls, simple bowls, and deep bowls (adapted from Ford 1951).

The histogram for restricted bowls shows two potential subcategories. While the three vessels with the lowest H:WP values are somewhat shorter and squatter than the rest (and the vessel with the highest H:WP value approaches the form of a necked jar), I see no compelling reason to subdivide this vessel shape. Perhaps a different measurement, such as degree of restriction, would be a better predictor of subcategories than H:WP. When using the ratio of rim diameter to diameter at widest point (RD:WP), the data from the restricted bowl category shows a clear unimodal distribution (Figure 4.9).

The histogram of H:WP for the restricted jar category shows three potential subcategories while the histogram of RD:WP shows a potential bimodal distribution (Figure 4.10). Visually, however, the variation among these vessels appears continuous and I see no reason to divide the restricted jars into subcategories.

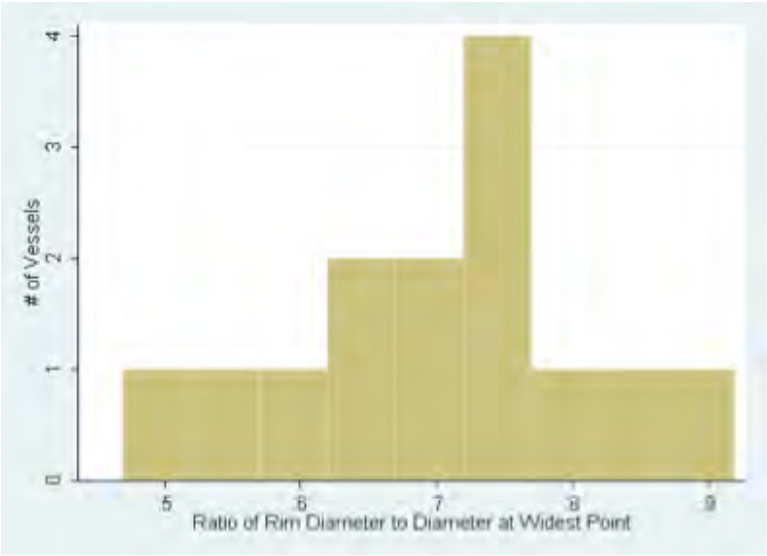

Figure 4.9 Histogram of RD:WP for restricted bowls showing a unimodal distribution.

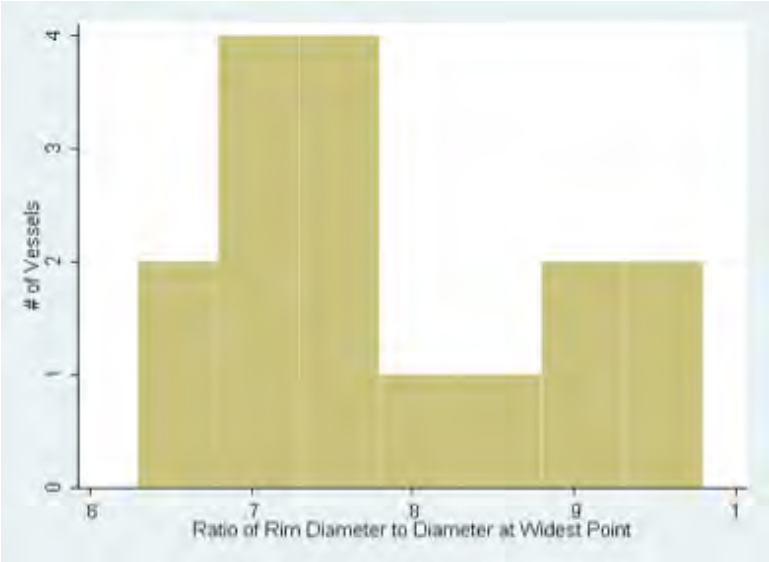

Figure 4.10. Histogram of RD:WP for restricted jars showing a bimodal distribution.

Assigning Function to Shape Categories

The ratio of height to rim diameter (H:RD),[5] most directly relates to two common measures of vessel function: degree of containment security and frequency of access. Degree of containment security (CS) refers to the ability of a vessel to hold its contents without spilling due to either depth or rim angle; thus, a deep vessel (especially one with a restricted orifice) will have a high CS value and a shallow, unrestricted vessel will have a low CS value. Frequency of access (FA) refers to the volume of material that may pass through the vessel orifice per unit time; thus, a vessel with a wide orifice will have a high FA value and a vessel with a narrow orifice will have a low FA value (Braun 1980:172). Commonly, storage vessels will have low FA and high CS, serving vessels will have high FA and low CS, and food preparation or cooking vessels will have high FA and high CS (Braun 1980:172; see also Henrickson and McDonald 1983). In terms of the ratios calculated for the whole pots in this assemblage, I would therefore expect that storage vessels would have a high H:RD, serving vessels would have a low H:RD, and food preparation or cooking vessels to have a H:RD in the middle ranges.

I created a bar graph of the mean H:RD (or H@SD:SD) ratios for each vessel class (Figure 4.11). If functional categories were clearly visible, I would have expected to see three distinct groupings—one with low values, one with middle values, and one with high values. It could be argued that this did occur, with shallow bowls, simple bowls and deep bowls having values below 0.5, restricted bowls and flaring beakers having values right around 1.0, and straight-sided beakers, necked jars, pyramidal beakers, and restricted jars having values

[5] If the vessel has a shoulder, then the ratio of height at the shoulder to shoulder diameter relates most directly to CS and FA.

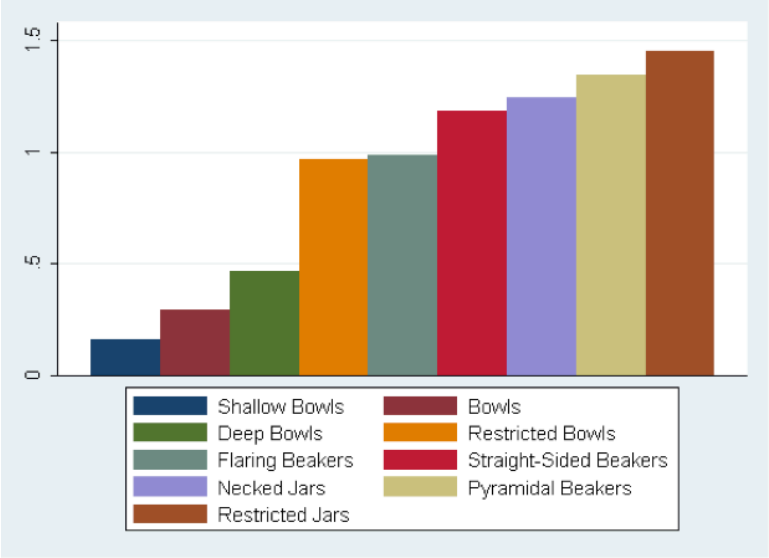

Figure 4.11. Bar graph showing the mean H:RD (or H@SD:SD) values for all vessel shape subcategories, showing three potential clusters with shallow bowls, simple bowls and deep bowls having values below 0.5, restricted bowls and flaring beakers having values right around 1.0, and straight-sided beakers, necked jars, pyramidal beakers, and restricted jars having values above 1.2.

above 1.2. That said, this does not fit with the commonly accepted functions for these vessel types as it would eliminate jars from the cooking vessel category altogether.

The histogram of H:RD (or H@SD:SD) values for individual vessels shows a more meaningful trimodal distribution (Figure 4.12). A cluster of vessels with H:RD values below 0.6 could be serving vessels; this category contains all of the bowls and one restricted bowl. A large cluster of vessels with H:RD values of 0.7 to 1.9 could be cooking vessels; this category contains most of the beakers, jars and restricted bowls. And finally, a small cluster of two necked jars with H@SD:SD values above 2.0 could be storage vessels. If a ratio of height to narrowest point was used instead of height to shoulder diameter, a few additional necked jars would have had values above 2.0.

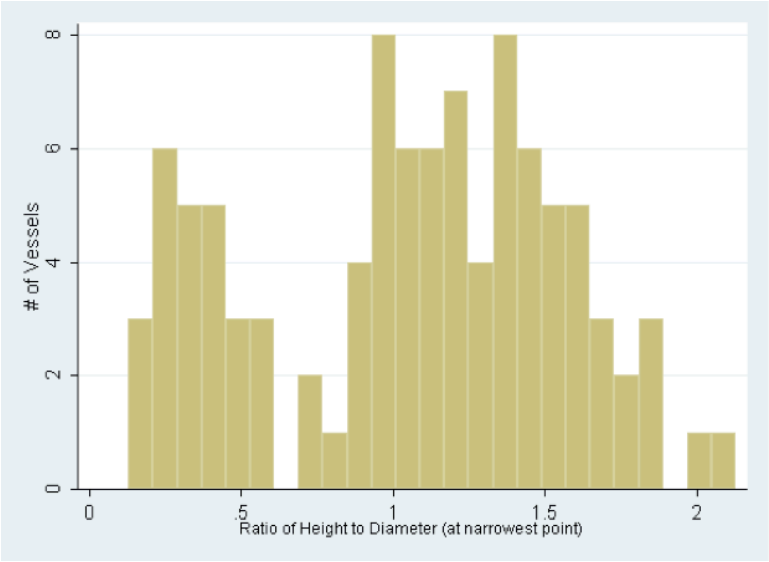

Figure 4.12. Histogram of all H:RD (or H@SD:SD) values showing a clear trimodal distribution with one cluster with values below 0.6, another with values of 0.7 to 1.9, and a final cluster with values above 2.0.

With regard to the commonly accepted uses of different vessel forms, this division of appears to fit reasonably well—bowls are serving vessels, beakers[6], restricted bowls and some jars are cooking vessels and other jars are storage vessels. Specifically, the presence of only necked jars in the storage category matches Fontana et al.'s (1962:48) recognition that "pots meant to be used for storage have smaller openings as a rule, and they have rims enabling one to tie a thong around them to secure a covering." If these categories are accepted, however, this does raise concern about using the Greenhouse collection of complete vessel forms to explicate other, more fragmentary Coles Creek collections because it seems to under-represent storage vessels. While this is not surprising, as storage vessels may tend to be larger, coarser and less decorated than other categories (and thus not as interesting for Ford or Phillips to illustrate), it may cause some vessel categories present in the archaeological assemblages to be ignored.

[6] Beakers' function will be discussed in more detail later in this chapter, when vessel size can be taken into consideration.

This rough categorization provides a starting place for functional analysis, but it is undoubtedly oversimplified. Other aspects of vessel shape must also be taken into consideration. Braun (1980) argues for a focus on vessel mouth characteristics. This could be a fruitful area of future research as measurements that speak to this differentiation were not included here. In addition, less commonly considered characteristics should also be born in mind; for example, Shepard (1956:236) accurately predicts that certain restricted shapes (such as pyramidal beakers) would be uncommon because "they have an acute angle at the base that makes them difficult to clean … [and] a smaller capacity than convex forms of equal all-over dimensions."

In addition to acknowledging the many facets of shape that must be considered, we much also acknowledge that "the same shape may have a variety of uses, and conversely the same purpose may be served by many forms" (Shepard 1956:224). For example, size may actually be an equal (or better) determinant of vessel function (Blitz 1993; Hally 1983; 1986; DeBoer 1974:336; Whallon 1969). Though the subcategories described in the previous section may detect some differentiation in size, they largely measure differences in shape. Because all drawings were made with no reference to scale, it is impossible to tell the difference between a large and small version of the same vessel shape. When considering sherds from an archaeological assemblage for which quantitative measurements were taken, it is possible to locate subcategories based on size (see below).

Shepard (1956:224) recognizes that we cannot know the variety of uses that prehistoric people may have had for ceramic vessels. Consequently, we may be over- or under-emphasizing certain functions based on our biases, misinterpreting the use of a particular pot based on faulty assumptions, or even ignoring some common uses of vessels

altogether. That said, this does not negate the usefulness of attempting a functional analysis of a given archaeological assemblage. “It is here maintained that individual vessels were constructed with a particular range of uses in mind. Even if a single vessel were put to an originally unintended use, the vast majority of vessels of similar form would still be used primarily as intended” (Braun 1980:173). While this intended use is what is being studied here, it is essential to draw attention to the importance of incorporating other means of determining vessel function in future studies. Analyses of rim and base form can identify vessels particularly well adapted to pouring, lifting, or retaining liquids (Braun 1980:173-174; Henrickson and McDonald 1983; Shepard 1956:247). Likewise, the inclusion of wall thickness, temper, surface finish, decoration (Braun 1980:173; 1983; DeBoer 1974:336; Henrickson and McDonald 1983), and paste characteristics (Steponaitis 1984) may significantly augment functional analyses. Equally importantly, studies of the residues and use-wear on a vessel have the potential to explain not only a vessel’s intended use, but also its actual use(s) (or even reuse) (Griffiths 1978:76; Hally 1983:23). These data will be only briefly considered in the remainder of this chapter and only as visible to the naked eye. Chemical and micromorphological studies of the Feltus ceramics were not attempted but would certainly be a fruitful area for further research.

The Feltus Assemblage

Three attributes recorded during my analysis of the Feltus assemblage relate directly to determining vessel shape and size: rim angle, vessel form, and rim diameter. Overall decorative motif and various measures of rim or lip elaboration (i.e., rim form, lip decoration, and presence of lugs) may also have affected vessel function and are discussed here. I

analyzed 3,054 rim sherds, including all rims from the 2006–2011 excavations and a subset of rims from the 2012 excavations. I was able to identify rim angle on 1,165 (38%) of these rims using the following categories: strongly out-sloping, slightly out-sloping, straight, slightly in-sloping, and strongly in-sloping (Figure 4.13).

Based on this measurement and other obvious shape characteristics, I was able to identify vessel form for 1,127 (37%) of the rim sherds (Appendix 1, Table A1.4); 881 (29%) could be confidently identified to a single vessel form, while the remaining 246 could be identified to one of two similar vessel forms[7] (Table 4.4). The vessel shape classes derived in the previous section (i.e., shallow bowls, simple bowls, deep bowls, restricted bowls, beakers, pyramidal beakers, restricted jars, and necked jars) were used as the primary categories. All categories identified in the model assemblage were present in the excavated Feltus assemblage with the exception of pyramidal beakers.[8] Occasionally, other details of vessel shape were obvious and used to make more specific vessel shape assignments. These supplemental categories include plates (i.e. extremely shallow bowls showing almost no upward curvature), carinated bowls (i.e. bowls with an angular corner point[9]), and pipes. In the remainder of this chapter, these eleven distinct categories are lumped into larger shape classes more broadly related to function and more easily comparable between researchers (i.e. beakers, bowls, jars, restricted bowls, and pipes). At Feltus, bowls are the most common vessel form, followed by jars, then beakers and restricted bowls (Figure 4.14).

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[7] This rate of identification matches well with that for Hedgeland (31%) (Ryan 2004:151) and Osceola (29%) (Jones 1996:3) and suggests that I identified vessel form with a similar level of confidence as other researchers.

[8] Patchett (2008:43) had difficulty identifying pyramidal beakers in the Prospere collection and questioned whether the shape category was present. It is likely that this vessel form was not used at Feltus, but perhaps the Feltus assemblage includes unidentified pyramidal beakers, potentially misclassified as restricted jars.

[9] This difference in vessel shape is likely only decorative and does not have relevant functional consequences.

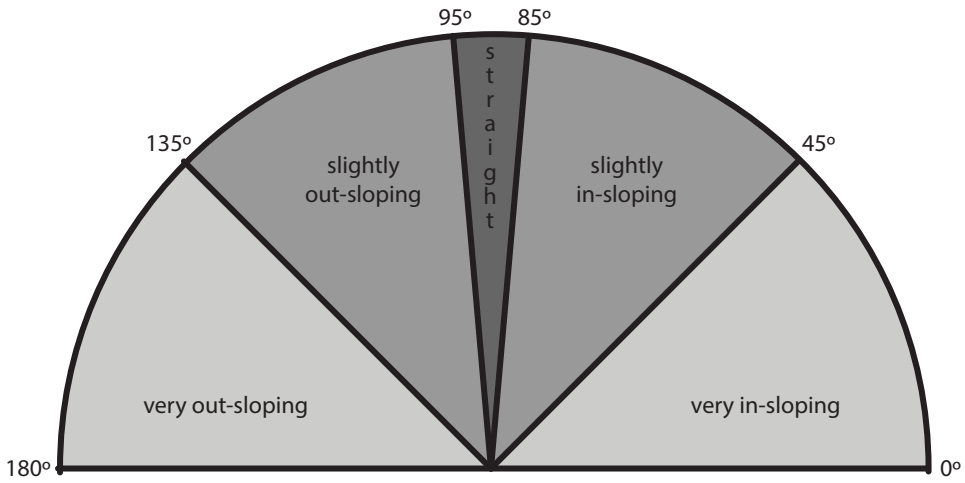

Figure 4.13. Diagram showing the rim angle categories used in the Feltus rim sherd analysis.

Table 4.4. Summary of vessel form identifications for the Feltus assemblage.

		BOWLS							JARS					
Analysis Unit	**BEAKERS**	*deep bowl*	*simple bowl*	*shallow bowl*	*shallow bowl/plate*	*plate*	*carinated bowl*	**BOWLS**	*necked jar*	*restricted jar*	**JARS**	**PIPES**	**RESTRICTED BOWLS**	**TOTAL**
A.Fill	**3**	*4*	*12*	-	-	-	-	**16**	*3*	*3*	**6**	**-**	**1**	**26**
A1.S0	**10**	*7*	*21*	*2*	-	-	*1*	**31**	*6*	*15*	**21**	**1**	**10**	**73**
A2.S0	**6**	*18*	*40*	*3*	-	-	*3*	**64**	*1*	*10*	**11**	**4**	**11**	**96**
B.S0	**3**	*1*	*9*	*1*	*3*	-	-	**14**	*3*	*4*	**7**	**1**	**-**	**25**
B.Fill	**8**	*2*	*16*	*2*	-	-	-	**20**	*6*	*7*	**13**	**-**	**7**	**48**
B.Surfaces	**2**	-	*4*	*1*	-	-	-	**5**	-	*5*	**5**	**1**	**2**	**15**
B.F163	**9**	*3*	*24*	*1*	*2*	-	*1*	**31**	-	*5*	**5**	**-**	**10**	**55**
C.Fill	**-**	-	*3*	-	-	-	-	**3**	-	*2*	**2**	**-**	**-**	**5**
C.FlankMidden	**1**	-	*1*	*1*	-	-	-	**2**	-	-	**-**	**-**	**1**	**4**
V2.F59	**-**	*2*	*1*	*1*	*1*	*1*	-	**6**	*2*	*1*	**3**	**1**	**-**	**10**
V.Features	**2**	-	*2*	*2*	-	-	-	**4**	-	*2*	**2**	**1**	**3**	**12**
V2.F4	**11**	*2*	*38*	*7*	*7*	*2*	-	**56**	*3*	*17*	**20**	**2**	**3**	**92**
V2.Midden	**16**	*10*	*39*	*4*	*4*	-	*2*	**59**	*3*	*16*	**19**	**1**	**23**	**118**
V4.BP	**4**	-	*4*	*1*	-	-	-	**5**	*1*	*2*	**3**	**-**	**1**	**13**
Site Total	**115**	*62*	*296*	*32*	*25*	*6*	*8*	**429**	*49*	*157*	**206**	**18**	**113**	**881**

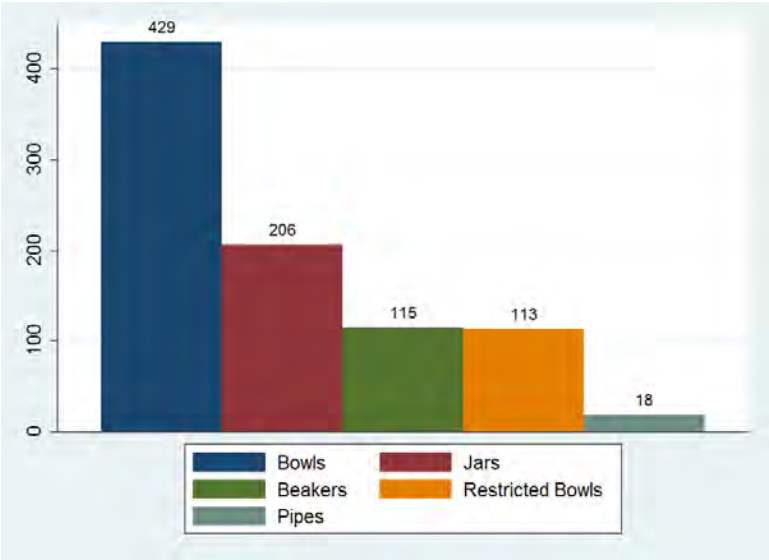

Figure 4.14. Bar graph of confidently identified vessel forms at Feltus (n = 881).

In most cases, rim diameter was estimated using a template (Rice 1987:222-224); a dial indicator (Plog 1985) was used only when necessary. Rim diameter was recorded only for sherds representing over 5% of the vessel's circumference (n = 378, 12%), as smaller sherds did not posses enough curvature to give an accurate measurement. This decision rule causes larger vessels to be statistically underrepresented in counts because larger sherds would be required to provide the required 5% of the rim. A histogram of these measurements shows that 351 vessels are normally distributed with rim diameters from 3 to 36 cm while a substantial number of sherds representing large vessels with diameters between 40 and 53 cm also occur in the collection (Figure 4.15).

Others have argued that vessel volume is a more effective and important measure of vessel size and that volume can be estimated from fragmented vessels (Senior and Birnie 1995). My study of the Ford and Phillips illustrations could provide conversion factors that allow vessel height to be estimated from rim diameter measurements for each shape category.

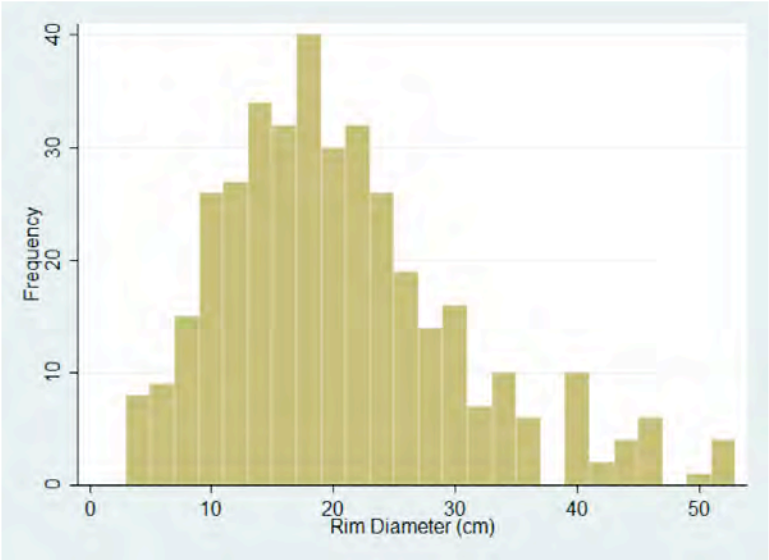

Figure 4.15. Histogram of all rim diameter measurements for the Feltus vessels (n = 378) showing a normal distribution from 3 – 35 cm and two classes of exceptionally large vessels about 40 cm and 50 cm.

Patchett (2008) conducted a pilot study of this method on the Prospere collection by completing probable vessel profiles from drawn rim profiles. Her calculations are based on one, and sometimes two, rim profile drawings that were extended using the approximate Greenhouse vessel dimensions and then taken to be representative for the designated vessel group. She then created three-dimensional models of parent vessels and used them to calculate vessel volume, surface area, etc. While she was able to estimate vessel volume and identify possible size classes in the Feltus assemblage, it is important to consider the magnitude of the assumptions made in the process of creating these values.

The conversion factors gleaned from the Greenhouse vessels vary wildly depending on which vessel is chosen as the model (cf. Kassabaum and Goldstein 2011; Patchett 2008). Senior and Birnie (1995:327) emphasize the importance of accuracy in vessel profile drawings and specifically recommend *not* using renderings estimated from smaller fragments. In only two instances did Patchett base her volume estimates on complete vessel

profiles, in two additional instances she based the estimate on approximately half of the profile, while the remaining six estimates were made based on one quarter of the profile or less (Figure 4.16). Given that the excavated assemblage from Feltus is more fragmentary than the Prospere collection, I have determined that orifice diameter is the best available indicator of vessel size (see also Roe 2010). Should larger portions of vessels be uncovered in future excavations, then vessel volume may provide a better measure of vessel size.

The remainder of this chapter will look individually at each vessel shape category. I will define the category and its abundance in the Feltus collection, examine patterns of vessel size, discuss the evidence for potential subcategories based on shape and size differences, determine likely vessel functions, and compare these data with those provided for other Coles Creek sites (Table 4.5). The final section of this chapter will summarize the ceramic evidence for site function by comparing the patterns in the ceramic data with our spatial and chronological knowledge about the use of the Feltus landscape and contemporary sites.

Beakers

A total of 115 beakers were identified in the Feltus assemblage, making them the third most common vessel form at the site. In this study, any vessel with straight or slightly out-sloping walls that lacked curvature in the vessel wall was classified as a beaker (Figure 4.17).[10] While the beakers in the model assemblage are dominated by slightly out-sloping examples, the Feltus assemblage is dominated by straight-sided examples. When combined with the lack of the pyramidal beaker form, I see no reason to subdivide the Feltus beakers into subcategories based on rim angle.

[10] An additional 49 sherds in the Feltus assemblage were identified as either beakers or deep bowls, but could not be confidently placed in either category. 23 more were identified as either beakers or necked jars, but further determination on these sherds is impossible.

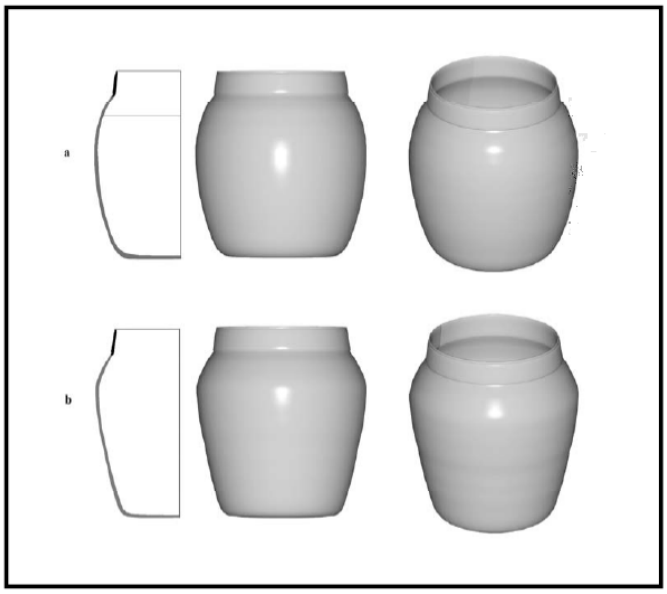

Figure 4.16. Example of the three-dimensional modeling method using vessels reconstructed from less than 25% of the profile (from Patchett 2008:Figure 22).

Table 4.5. Comparative sites used in this chapter.

Site Name	Number	Site Type	Phase	References
Blackwater	16Te101	Non-mound	Preston	Kidder 1993; Roe 2010
Bird's Creek	16Ct416	Non-mound	Balmoral	Lee et al. 1997; Roe 2010; Ryan 2004
Hedgeland	16Ct19	Single-mound	Sundown	Roe 2010; Ryan 2004
		Single-mound	Ballina	
		Single-mound	Balmoral - Preston	
		Single-mound	Routh	
Jolly	16Te103	Non-mound	Balmoral	Kidder 1993; Roe 2010
Lake Providence	16Ec6	Multi-mound	Preston	Weinstein 2005
Lisa's Ridge	16Te144	Non-mound	Sundown	Wells 1998
Osceola	16Te2	Pre-mound	Mount Nebo	Jones 1996; Kidder 1990; Roe 2010; Ryan 2004
		Pre-mound	Sundown	
		Multi-mound	Balmoral	
Raffman	16Ma20	Multi-mound	Balmoral - Preston	Roe 2010
Richardson	16Ct409	Non-mound	Sundown - Ballina	Hunter et al. 1995; Roe 2010
Shackleford Lake	16Te1	Multi-mound	Mount Nebo - Sundown	Wells 1998

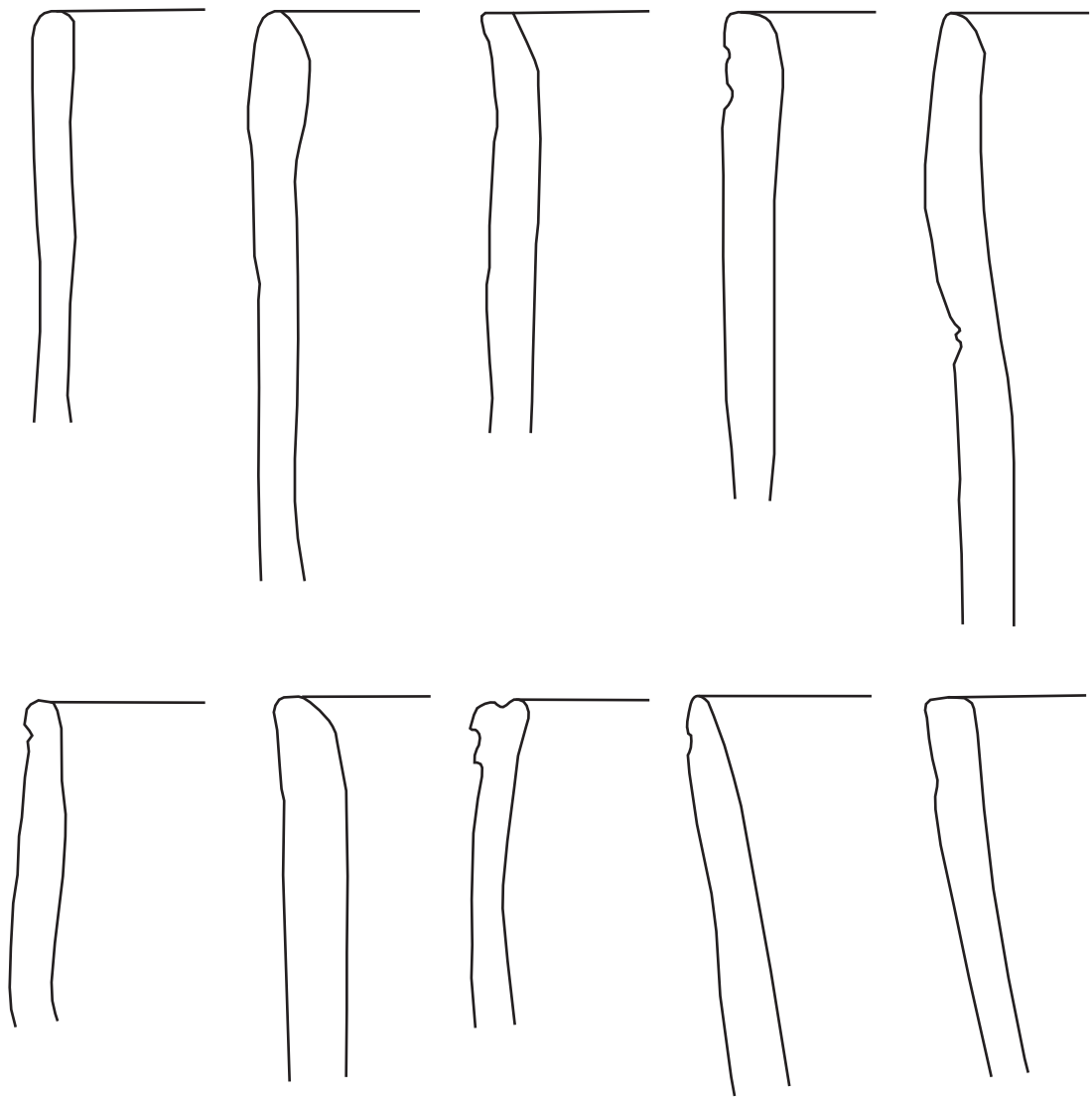

Figure 4.17. Rim profile drawings of beakers from Feltus.

The beakers at Feltus range in diameter from 10 to 40 cm, with 19 to 23 cm being the most common size. These vessels are slightly smaller than those at the Lisa's Ridge and Shackleford Lake (24–38 cm with the majority around 30 cm), but larger than those at Raffman (12–26 cm with 14–16 cm being most common) and other late Coles Creek sites. Variation in beaker size thus seems to be more closely tied temporal differences than to differences between mound and non-mound sites, with large beakers appearing in higher frequencies at Baytown and early Coles Creek sites and small beakers appearing in higher frequencies at late Coles Creek sites (see also Jones 1996; Wells 1998:175; Ryan 2004:246).

This temporal shift is evident in other attributes as well. Simple or thickened rims on large, thick beakers are common at early Coles Creek sites, while tapered rims on small, thin, burnished beakers dominate later (Jones 1996; Kidder 1990; 1993; Lee et al. 1997:9.74-9.75; Roe 2010:152; Wells 1998:175). The later type of beaker is absent at Feltus.[11] Rather, Feltus beakers are relatively thick, with the wall thickness averaging over 5 mm. Simple squared rims dominate, with rounded rims also being common. Eight percent of these beakers have decorated lips (Table 4.6).

While the literature often assumes that beakers were used as serving cups, these larger, heavier beakers would be unwieldy in such a role. Jones (1996:3) suggests that they were short-term, dry storage containers during early Coles Creek times, noting that examples from Osceola had thickened rims or rim straps that would have allowed Coles Creek people to attach pliable lids. Wells (1998:175) confirms this functional assignment and further suggests that lugs and Coles Creek Incised lines near the rim of the vessel could have served

[11] There are two (possibly, three) beakers with tapered rims at Feltus. The two sherds for which I could estimate rim diameter are of average size for Feltus and come from early contexts in the Mound D area. The other is from the final fill episode of Mound A and is of unknown size; this may possibly represent one of these later beakers.

Table 4.6. Summary characteristics for vessel form categories at Feltus.

				Lug Type			Rim Form					Lip Decoration			
Vessel Form	**Count**	**Rim Diameter (cm)**	**Decorated (%)**	**Jackson**	**Joffrion**	**Other/Unknown**	**Rounded**	**Squared**	**Squared In/Out**	**Thickened**	**Tapered**	**Incision (Single)**	**Incision (Multiple)**	**Punctated Line**	**Punctations**
Beakers	115	10 - 40	79	-	-	-	40	47	21	4	2	4	-	4	1
				-	-	-	35%	41%	18%	4%	2%	4%	-	4%	1%
Bowls	429	7 - 53	48	32	17	16	178	133	73	30	2	30	2	11	14
				7%	4%	4%	41%	31%	17%	7%	0%	7%	0%	3%	3%
Jars	206	7 - 35	90	-	-	-	97	68	25	7	7	7	-	3	-
				-	-	-	47%	33%	12%	3%	3%	3%	-	1%	-
Restricted Bowls	113	4 - 45	84	-	4	-	33	56	15	6	1	16	1	11	8
					4%		29%	50%	13%	5%	1%	14%	1%	10%	7%
Pipes	18	3 - 7	56	-	-	-	9	6	2	1	-	4	-	-	-
				-	-	-	50%	33%	11%	6%	-		-	-	-

as anchors for such coverings (see also Roe 2010:133). He reports no residues or use-wear that might indicate cooking uses. Lugs were entirely absent from this vessel form at Feltus and thickened rims were exceptionally rare, but Coles Creek Incised lines (n = 74) are by far the most common decorative motif on beakers, far exceeding even Baytown Plain versions (n = 24). Though residues and use-wear were not recorded systematically for the Feltus materials, sooting was noted on numerous beakers, indicating that they were used as cooking vessels at Feltus.

The Feltus data, when combined with the comparative data from both early and late Coles Creek sites, confirm the recognized pattern that beakers start out large with untapered rims and eventually become smaller with tapered rims (Jones 1996; Lee et al. 1997; Roe 2010). This indicates a fairly dramatic shift in function with the earlier, larger beakers used as either storage or cooking vessels and the later, smaller beakers used as serving vessels for liquids (see also Roe 2010:152; Ryan 2004:155). This functional difference between subclasses of similarly shaped vessels may have important implications for site function and future functional analyses of LMV ceramics should draw this distinction between large, storage or cooking beakers and small, drinking beakers whenever possible by relying on rim form and rim diameter measurements.

Bowls

Bowls are by far the most common vessel form at Feltus, making up nearly half of the assemblage (n = 429).[12] There are at least five categories of bowls represented: deep bowls,

[12] Again, 49 additional sherds could represent either deep bowls or beakers and should perhaps be included in this count.

simple bowls, shallow bowls, plates, and carinated bowls (Figure 4.18).[13] The first four of these categories are differentiated by the angle of the vessel wall (Figure 4.19). This is one more category than was identified in the model assemblage and at least one more than is recognized in comparable studies. Deep bowls (n = 60) approach the shape of a beaker, but are not as tall; they have rim angles of 90º to 112.5º. Simple bowls (n = 289) are the most common bowl form at Feltus and have out-sloping walls with rim angles between 112.5º and 135º. Shallow bowls (n = 57) are shorter and flatter than simple bowls, with wall angles from 135º to 157.5º and plates (n = 6) are almost flat, with rim angles between 157.5º and 180º. The shallow bowl and plate categories were combined in my analysis of the model assemblage above and it is likely that has occurred in similar studies. Finally, carinated bowls (n = 8) are defined based on the presence of an angular inflection point in the vessel wall.

Bowls at Feltus range from 7 to 53 cm in diameter. This range is roughly comparable to that from Shackleford Lake (12–56 cm), which is another early multi-mound center, but is broader than the ranges from Lisa's Ridge (16–44 cm), Raffman (14–44 cm), Richardson (8–42 cm) and many other Coles Creek sites. A histogram of rim diameter for simple bowls suggests a number of distinct size categories (see also Hunter et al. 1995:170-171; Patchett 2008:53; Roe 2010:149; Ryan 2004:151-154) (Figure 4.20).[14] Over half of the Feltus bowls are plain (n = 225), with Coles Creek Incised being the most common decorative type (n =

[13] Unlike most other functional studies of Coles Creek ceramics, I do not include globular/restricted bowls in the broader bowl category. Restricted bowls will be discussed separately later in this chapter. This was a deliberate decision due to the fact that degree of restriction likely has as much or more functional importance as vessel height (Rice 1987:241; Shepard 1956:228-230). The data presented in this chapter for comparative sites have been amended using the raw data in the site reports to reflect this change in categorization whenever possible. Roe (2010:155) also recognizes this issue but chooses to deal with it differently, comparing percentages of restricted and unrestricted vessels more broadly.

[14] Only simple bowls were included in this histogram in order to allow rim diameter to serve as proxy for overall vessel size. Had deep bowls, shallow bowls, and plates also been included, vessel volumes would have varied independently of rim diameter.

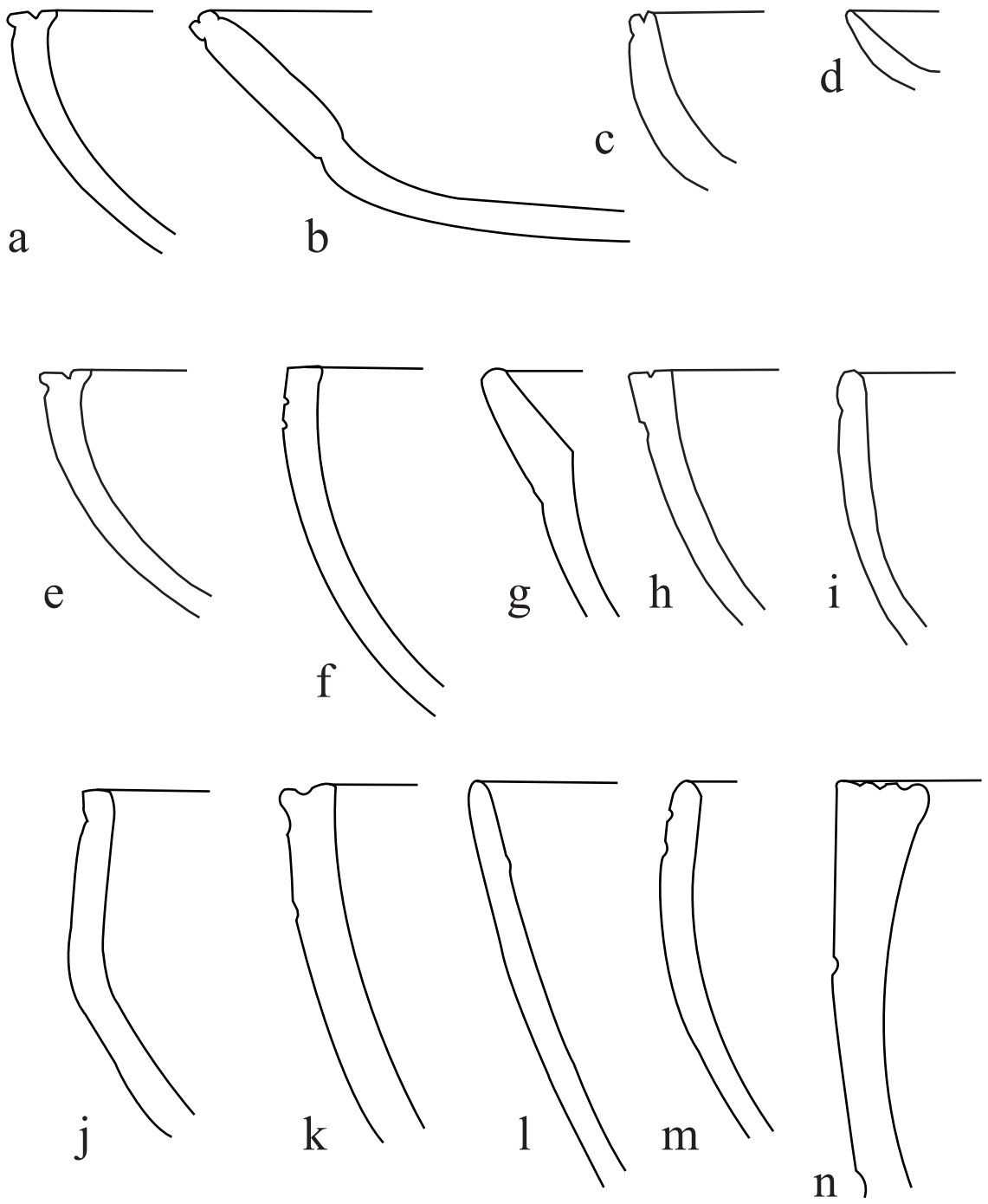

Figure 4.18. Rim profile drawings of bowls from Feltus. (a-c) shallow bowls, (e-i) simple bowls, (j) carinated bowl, (k-n) deep bowls.

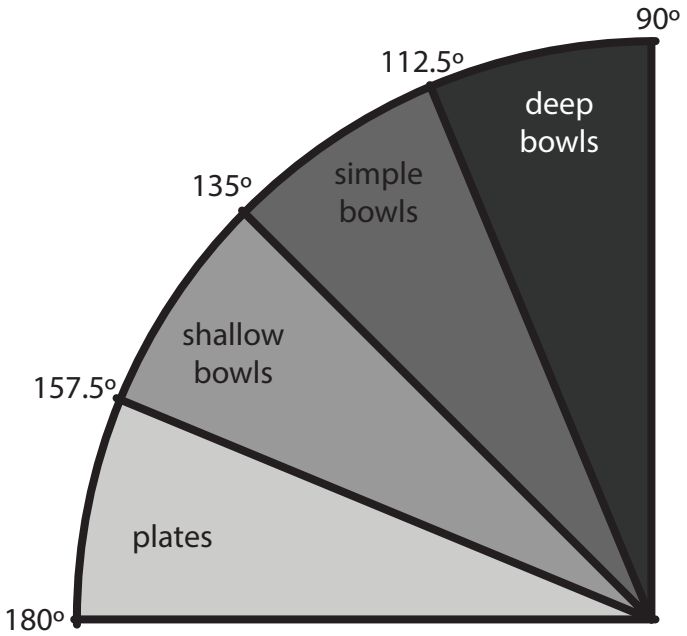

Figure 4.19. Diagram showing rim angle classifications for plates, shallow bowls, simple bowls, and deep bowls.

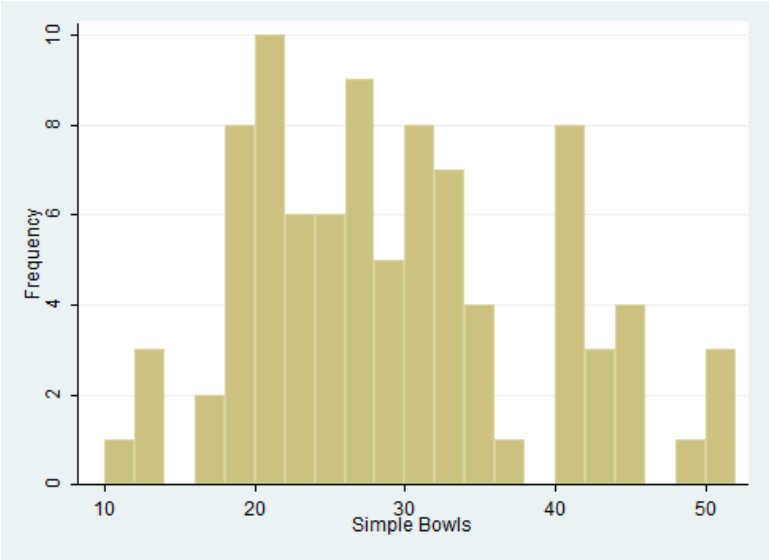

Figure 4.20. Histogram of rim diameter measurements for simple bowls showing potential size categories.

144). Though bowls are the least decorated vessel form at the site they have the most rim elaboration of any vessel form; lip decoration occurs on 13% of the Feltus bowls and lugs occur on 15%. Both rounded and squared lips are common, with rounded being slightly more popular. Compared to the other vessel forms, a substantial number of bowls from Feltus have thickened rims (see Table 4.6).

In general, bowls were food preparation and serving vessels as their unrestricted orifices make them ineffective storage vessels (Braun 1980; Rice 1987; Wells 1998). Jones (1996:3) recognizes that many bowls "are abraded on the body's interior wall, probably the result of mixing or serving food with a hard utensil." The subcategories of bowl shape help to further differentiate function. Deep bowls may have served as cooking as well as serving vessels (see Ryan 2004154) while simple bowls, shallow bowls, and plates were likely used only for serving and food consumption.

Jars

Jars are the second most common vessel form at Feltus (n = 206). I identified two shape subcategories: restricted and necked (Figure 4.21) . Restricted jars are by far the more common form at Feltus (n = 157),[15] with necked jars accounting for only about a quarter of the jar assemblage (n = 49).[16] My category of restricted jars combines various categories used by other authors (e.g., Jones 1996; Lee et al. 1997; Wells 1998), including open jars,

[15] A total of 173 sherds were classified as belonging to either the restricted jar or restricted bowl form. In most of these cases the sherd was too small to confidently estimate vessel height from the angle of the vessel wall. It is possible that many of these vessels would fall into the "seed jar" category as defined by Jones (1996) and others.

[16] An additional 23 sherds were classified as either beakers or necked jars. In general, these sherds display nearly vertical rims (as would be expected for a beaker) but are of a size that is much more likely to be a necked jar. For this reason, I did not attempt to differentiate between them. As many as six of these may represent the later, small beakers discussed above, but none have the distinctive, tapered rim. The remaining examples from early contexts are not likely to fit into this category.

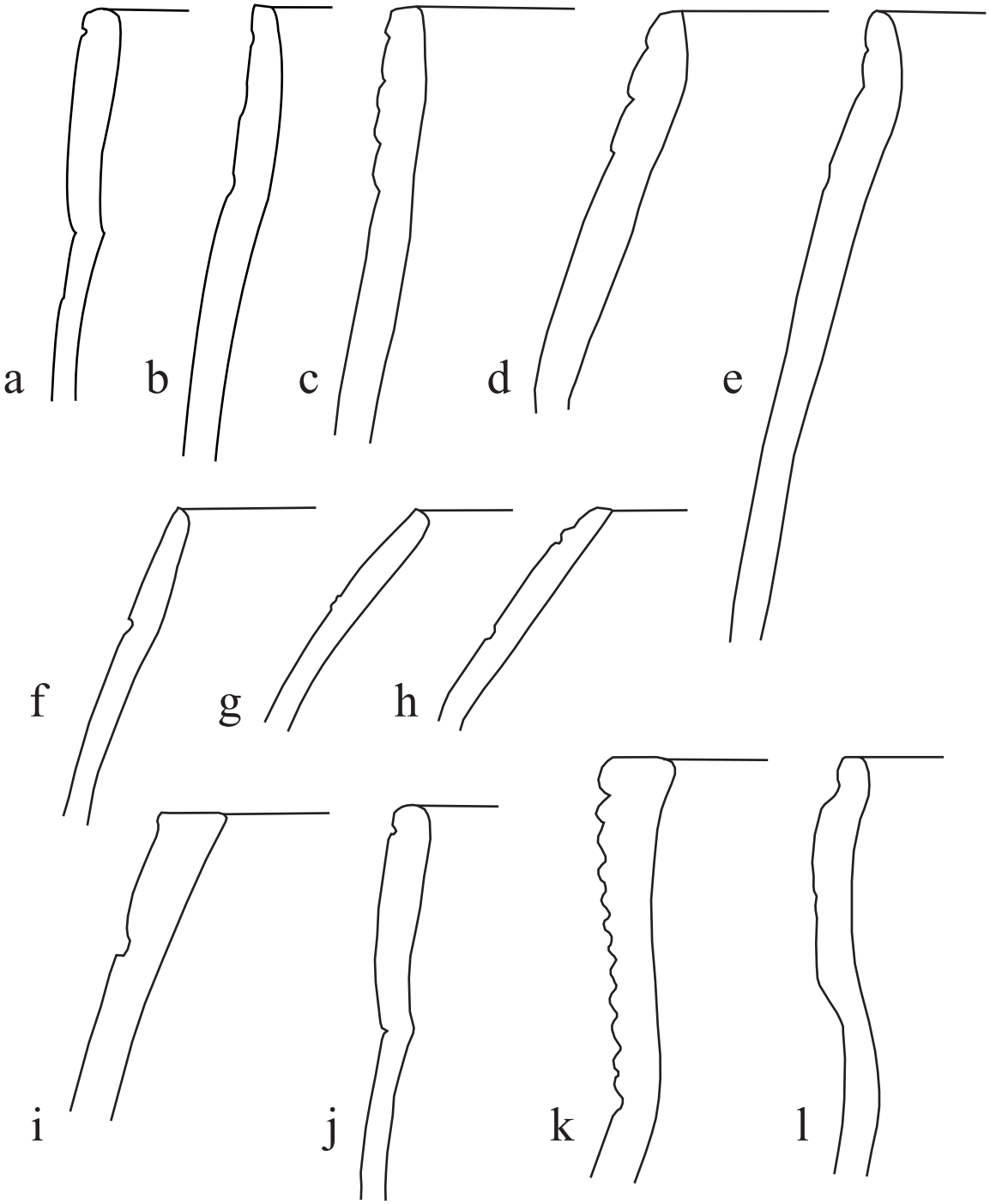

Figure 4.21. Rim profile drawings of jars from Feltus**.** (a-i) restricted jars, (j-l) necked jars.

barrel-shaped jars, restricted jars, and possibly seed jars. In general, it consists of relatively tall vessels with bulging walls and slightly restricted orifices. Necked jars are similar to restricted jars, but have a more complicated shape profile due to the presence of a distinct shoulder and neck further restricting the orifice.

Jars at Feltus range from 7 to 35 cm in rim diameter with the most examples falling around 20 cm. This fits well with the range of rim diameters reported from Hedgeland (4–40 cm), Osceola (8–33 cm), Raffman (4–38 cm), and Richardson (8–32 cm). Despite possible shape subcategories being identified in the model assemblage, obvious shape or size classes are not visible in the Feltus data (cf. Patchett 2008:54-56), and the data from Raffman also support there being an unbroken continuum of sizes (Roe 2010:139). Though lip decoration and lugs on the commonly rounded rims of Feltus jars are minimal, they are the most decorated vessel form (90%) (see Table 4.6). This is also true of the Raffman assemblage (Roe 2010:139).

The wide variety of vessel sizes may indicate that jars served multiple functions, likely focused on cooking and storage (Jones 1996:3; Lee et al. 1997:9.75; Roe 2010:137; Wells 1998:179-185). Looking only at restricted jars, Wells (1998:179) reports that many had everted lips, rim straps, thickened rims, lugs, or Coles Creek Incised designs that may have served to anchor lids for storage. In the Feltus collection, lugs are entirely absent from the jar assemblage, but Coles Creek Incised designs are the most common decorative motif. Wells also reports sooting and use-wear inside the rim, presumably from stirring or dipping, all of which indicates a cooking function. The rounded walls and slightly restricted orifices of these jars are common characteristics of cooking vessels (Hally 1986; Lee et al. 1997; Ryan 2004; Wells 1998), but their high level of decoration is not (Roe 2010:139).

Discriminating between cooking and storage functions will thus rely on more detailed studies of residues and use-wear. Though cooking uses are still possible for necked jars, their more extreme restriction means they were most likely used for storage of both wet and dry materials, especially as their defined necks provided a convenient point to attach a lid (Lee et al. 1997:9.75). The higher incidence of necked vessels at most other Coles Creek sites (e.g., Hedgeland, Osceola, and Jolly) indicates less emphasis on storage at Feltus.

Restricted Bowls

Restricted bowls forms occur at Feltus with approximately the same frequency as beakers (n = 113).[17] This category combines Wells's (1998:179) globular and sub-globular bowl categories and is referred to as globular by other authors as well (e.g., Jones 1996; Roe 2010). Restricted have the same definition as restricted jars but are more short and squat (Figure 4.22).

Restricted bowls range from 4 to 45 cm in diameter; however most range from 4 to 27 cm with two exceptionally large examples. Collections from Raffman and Osceola also show these two size classes (Jones 1996:3; Roe 2010:152). This vessel form generally has squared rims, shows the highest frequency of lip decoration of any vessel form at Feltus (32%), and is very commonly decorated (84%) (see Table 4.6).

These restricted bowl forms are better suited to cooking or possibly storage than serving, which is why I have worked to separate them from open bowl forms (cf. Lee et al. 1997; Roe 2010; Ryan 2004). A cooking function is supported by sooting on the exterior and

[17] Again, 173 sherds were classified as belonging to either the restricted jar or restricted bowl form. This is the largest category of tentatively identified sherds in the collection. In some cases, their shape identification was tentative because the sherd was too small to confidently determine vessel shape. In other cases, the sherd fell somewhere between the definitions of restricted jars and restricted bowls in terms of predicted vessel height. It is likely that other authors would classify many of these sherds as "seed jars."

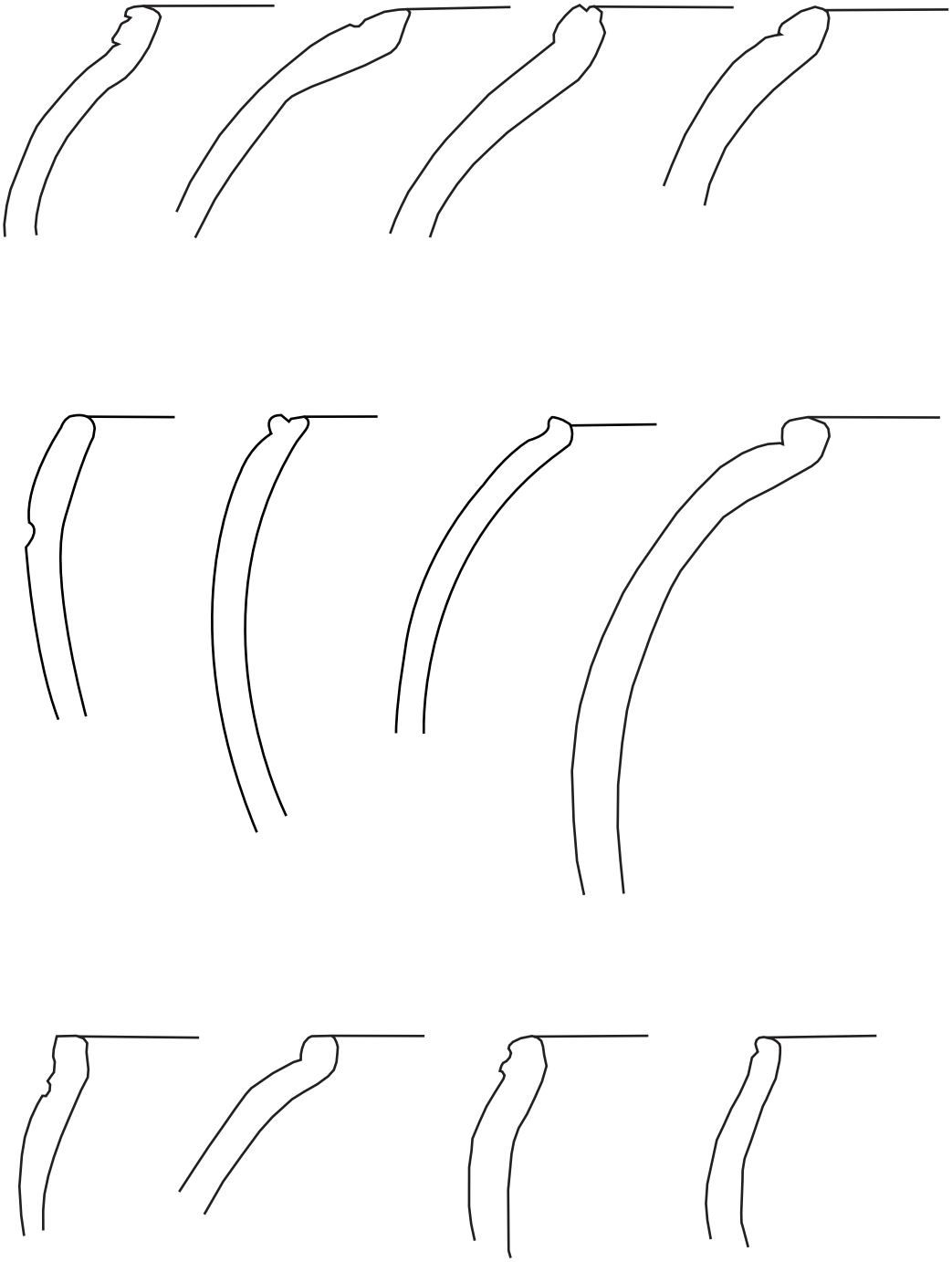

Figure 4.22. Rim profile drawings of restricted bowls from Feltus.

abrasions, chipping, and pitting on the interior of many restricted bowls at Lisa's Ridge, Shackleford Lake, and Osceola (Wells 1998:179; Jones 1996:3). However, the high level of decoration is again incongruent with typical descriptions of cooking vessels (Roe 2010:139).

Pipes

While pipes are quite rare compared to other vessel forms (n = 18), they are more common at Feltus than at other Coles Creek sites, making up about 2% of the identifiable rim sherds. They range from 3 to 7 cm in diameter, and have both rounded and squared lips occasionally decorated with a single incised line. More than half of the Feltus pipes bear either Coles Creek Incised or French Fork Incised motifs (see Table 4.6). They occur across many contexts at Feltus but are most common in A2.S0 and the D2 midden.

Williams and Brain (1983:213-214) identify two distinct pipe forms in the Lake George collections: platform pipes and elbow pipes. Platform pipes there are described as resembling Hopewell and Marksville platform pipes, but are crudely formed and finished with minimal decoration. Their context at Lake George implies a late expression of the platform pipe form. Two pipes that did not make use of an inserted stem were found at Greenhouse (Ford 1951:110). While these pipes were classified as platform pipes because they have a heel projecting behind the bowl, they differ from the fairly stabilized platform pipe shape of the Marksville period in a number of ways. They come from mixed contexts at Greenhouse, but Ford hypothesizes that they were common in the LMV during the Marksville period from AD 500–700.

Elbow pipes are L-shaped with bowls in both ends (one for the plant material and one for attaching a stem). At Lake George, elbow pipes are from later contexts and all contain at

least some shell temper, implying a Mississippi period date (Williams and Brain 1983:213-214). They are undecorated and have flattened bases or other supports that allow them to be placed on a surface without falling over. Two (or perhaps three) elbow pipes were identified at Greenhouse from Coles Creek and Troyville-Baytown contexts (Ford 1951:110). Ford suggests that this style of pipe became popular in the LMV after AD 700, around the beginning of the Baytown period.

Though many of the Feltus pipes are identified based only on the exceptionally small diameters of the bowl rim and/or unusual curvature of the vessel wall, four examples are tentatively classifiable as to type. All four are elbow pipes, though with some unusual characteristics that imply they may be of a transitional nature (including the presence of the projecting heel as described by Ford). Fragments of the most complete example were found in A1.S0 and the contemporaneous Feature 37, a Ballina phase deposit. This pipe most resembles an example from Lake George (Williams and Brain 1983:Figure 6.3b), though its bowl was not recovered and it has an unusually wide orifice for stem insertion (Figure 4.23a). The second pipe was recovered from the Sundown phase midden overlaying Feature 4 in V2. This fragment closely resembles the elbow of the pipe from Feature 37 though it lacks the stem attachment (Figure 4.23b). The third pipe was collected from Feature 135, one of the large concentric posts in V4. We recovered a large portion of the bowl, which shows indications of the corresponding stem orifice as well (Figure 4.23c). The final example consists of a bowl (with no indication of the basal form) decorated with French Fork Incised designs from A2.S0 (Figure 4.23d). This pipe closely resembles one from the Prospere collection (Figure 4.23e), indicating a pattern of French Fork Incised decoration on the large bowls of pipes at Feltus.

Figure 4.23. Photographs of pipes from the Feltus collections. (a) Elbow pipe from A1.S0, oriented with stem opening facing left and bowl opening facing up, projecting heel to the right. (b) Elbow pipe from the D2 midden, oriented with bowl facing up and indications of the stem opening facing out. (c) Elbow pipe from Feature 134, oriented with the bowl facing up and indications of the stem opening facing left. (d) French Fork Incised pipe bowl from A2.S0. (e) French Fork Incised pipe bowl in the Prospere collection.

Though the Feltus pipes are tentatively identified as elbow pipes, it is possible that they represent a transitional form between the platform pipes common in the Marksville period and the classic elbow pipes of the Mississippi period. This group of pipes, both from Feltus and other Coles Creek sites, can best be described as typically L-shaped with rounded, unstable bases and commonly decorated with Coles Creek Incised and French Fork Incised motifs. This suite of characteristics suggests that it may be possible to differentiate Baytown and Coles Creek pipes from both earlier and later examples based on their transitional character. Two "T-shaped" pipes with French Fork Incised motifs were recovered (with human figurines and clay earplugs) from the Coles Creek era Crawford site in the Ouachita valley may also fit into this category, representing more platform pipe-like versions (Gibson 1985:234).

Other Ceramic Artifacts

One confidently identified figurine fragment was recovered from Feature 4 at Feltus and three additional fired clay objects may also be part of human figurines (Figure 4.24). The confidently identified fragment is a portion of a head showing hair and incised designs potentially indicating clothing. Two additional recovered objects suggest human breasts, but this identification is entirely speculative, the third is unidentifiable. Figurines have been recovered from Crawford (Gibson 1985:234), Greenhouse (Ford 1951:111), Lake George (Williams and Brain 1983:214-215), Morgan (Fuller and Fuller 1987:345-352); and Reno Brake (T.R. Kidder, personal communication). These objects, combined with the lack of similar materials in both earlier and later assemblages, suggest that small, somewhat crude human figurines may be characteristic of Baytown and Coles Creek assemblages.

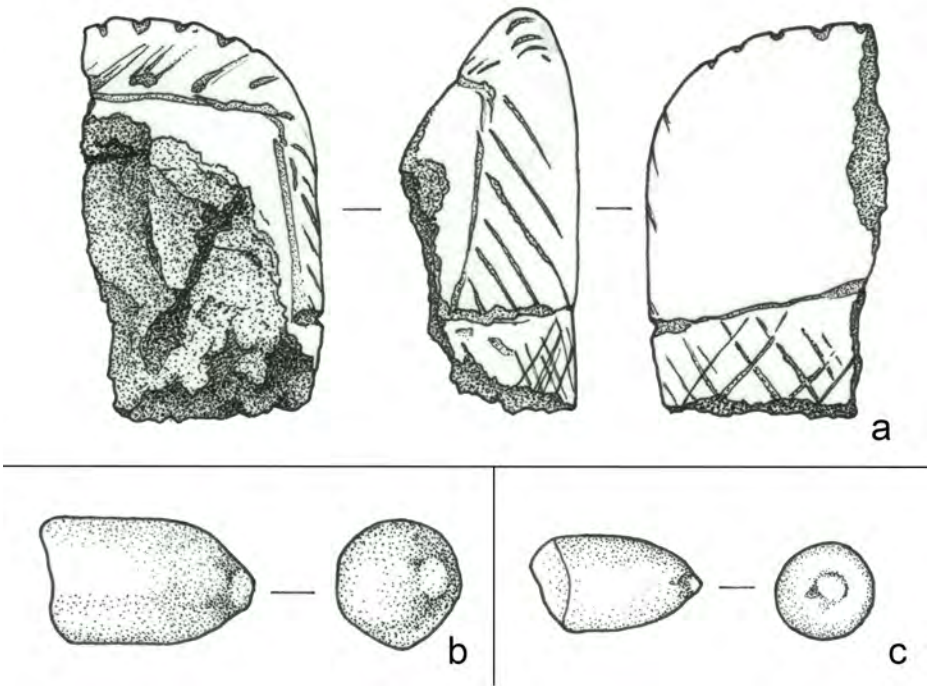

Figure 4.24. Figurine fragments from Feature 4 at Feltus. (a) Head fragment showing hair and incised designs potentially indicating clothing. (b-c) Possible additional figurine fragments (adapted from Steponaitis et al. 2012).

Summary and Discussion

The Feltus assemblage shares a great deal with Coles Creek assemblages more generally. It is made up of relatively simple vessel forms including unrestricted bowls and beakers and restricted bowls and jars. Only occasional necked jars and carinated bowls demonstrate complex vessel profiles. Overall, the assemblage is dominated by bowls, followed by jars, then beakers and restricted jars in similar quantities. While the proportions change by context (Table 4.7), bowls are always the most common vessel form making up from 33% to 67% of any given analysis unit. They are the only form present in every context at the site. The three contexts with the highest percentages of bowls include the fill of Mound A, the midden southwest of Mound A, and Feature 4.

Table 4.7. Counts and proportions of vessel forms in the Feltus assemblage by analysis unit.

	BEAKERS		BOWLS		JARS		RESTRICTED BOWLS		PIPES		TOTAL	
Analysis Unit	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
A.Fill	3	12%	16	62%	6	23%	1	4%	-	-	26	100%
A1.S0	10	14%	31	42%	21	29%	10	14%	1	1%	73	100%
A2.S0	6	6%	64	67%	11	11%	11	11%	4	4%	96	100%
B.S0	3	12%	14	56%	7	28%	-	-	1	4%	25	100%
B.Fill	8	17%	20	42%	13	27%	7	15%	-	-	48	100%
B.Surfaces	2	13%	5	33%	5	33%	2	13%	1	7%	15	100%
B.Feature 163	9	16%	31	56%	5	9%	10	18%	-	-	55	100%
C.Fill	-	-	3	60%	2	40%	-	-	-	-	5	100%
C.Flank Midden	1	25%	2	50%	-	-	1	25%	-	-	4	100%
D2.Feature 59	-	-	6	60%	3	30%	-	-	1	-	10	100%
D.Features	2	17%	4	33%	2	17%	3	25%	1	8%	12	100%
D2.Feature 4	11	12%	56	61%	20	22%	3	3%	2	2%	92	100%
D2.Midden	16	14%	59	50%	19	16%	23	19%	1	1%	118	100%
D4.Borrow Pit	4	31%	5	38%	3	23%	1	8%	-	-	13	100%
D2.Feast	27	13%	115	55%	39	19%	26	12%	3	1%	210	100%
SITE TOTAL	115	13%	429	49%	206	23%	113	13%	18	2%	881	100%

In most contexts, jars are the next most common vessel form; however, in two cases beakers are second most common. These two cases—the flank midden from B.S4 and the flank midden from C.S1—are the only two excavated Balmoral phase mound-top deposits at Feltus. This finding provides tentative support for the fact that beakers may gain popularity during the Balmoral phase as drinking vessels. Vessel size data lend some additional support to this hypothesis (Table 4.8). The average size of vessels in the Mound B flank midden is the largest on site, and yet the beakers are of below average size.

While jars, restricted bowls, and most beakers are cooking or storage vessels, open bowls are serving vessels. In the archaeological record more generally, cooking vessels typically "dominate domestic vessel refuse because, subjected to rapid heating and cooling and moved around often, they frequently break" (Roe 2010:132). The predominance of the bowl form at Feltus thus indicates an emphasis on serving, rather than preparing or storing food. This pattern becomes more striking when ratios of cooking/storage and serving vessels are compared by context (Table 4.9).[18] In only five contexts at Feltus does the combined number of cooking and storage vessels overcome the number of bowls. Three of these contexts are secondary deposits from which it does not make sense to establish site function. The other two—A1.S0 and the mound surfaces within Mound B—provide more interesting anomalies and may indicate spatial or temporal differences in site use.

The Mound B surfaces are difficult to interpret. When viewed alone, they have a relatively small sample size (n = 15, averaging 4.5 vessels per surface) and represent a variety of temporal contexts. It is tempting to suggest that the higher percentage of cooking

[18] I have chosen to combine cooking and storage vessels here because discriminating between them is difficult without more exhaustive analyses of use-wear and residues. That said, it is likely that cooking vessels far outnumber storage vessels in this combined count. Necked jars are exceptionally rare at Feltus and restricted jars and beakers lack lugs and thickened rims that may allow them to be covered.

Table 4.8. Summary of vessel size data from the Feltus assemblage by analysis unit.

				Vessel Forms				
Analysis Unit	**Phase**	**Range**	**Average**	**Jar**	**Bowl**	**Restricted Bowl**	**Beaker**	**Pipes**
A.Fill	-	8-40	21	15	28	10	18	-
B.Fill	-	4-49	23	14	31	11	23	-
B1.Surfaces	-	6-43	23	26	32	18	27	6
D.Features	-	4-45	21	-	27	45	16	4
D.BP	-	6-20	14	17	-	-	20	-
A1.S0	Ballina	3-45	20	17	26	15	24	3
A2.S0	Ballina	3-53	23	22	29	15	23	4
B.Feature 163	Balmoral	10-51	25	24	31	22	20	
C.Fill	Balmoral	20-23	22	23	21	-	-	-
C.Flank Midden	Balmoral	12-30	19	-	23	12	-	-
B.S0	Hamilton Ridge	7-40	20	16	23	-	26	7
D.Feature 59	Hamilton Ridge	7-35	20	26	24	-	-	7
D.Feature 4	Sundown	5-52	20	18	26	10	22	4
D2.Midden	Sundown	5-44	21	14	27	19	20	5
SITE TOTAL		3-53	21	18	27	16	22	5

Table 4.9. Proportion of cooking and storage compared to serving vessels in the Feltus assemblage by analysis unit.

Analysis Unit	**Cooking and Storage**	**Serving**
A.Fill	38%	62%
A1.S0	56%	42%
A2.S0	29%	67%
B.S0	40%	56%
B.Fill	58%	42%
B.Surfaces	60%	33%
B.F163	44%	56%
C.Fill	40%	60%
C.Flank Midden	50%	50%
D2.F59	30%	60%
D.Features	58%	33%
D2.F4	37%	61%
D2.Midden	49%	50%
D4.BP	62%	38%
SITE TOTAL	49%	49%

and storage vessels implies that different activities were taking place on top of Mound B than elsewhere at the site. However, when combined with the vessels from the flank midden on B1.S4, another mound surface context, the pattern flips to the more typical Feltus assemblage emphasizing serving over cooking/storage vessels (52% and 45%, respectively). Moreover, if some of the small beakers from the mound summits are drinking vessels as posited above, then they should be included in serving vessels with bowls, rather than in cooking vessels with beakers. This change has not been made in the data reported here.

A1.S0 is thus the most interesting anomaly in the Feltus pattern. When viewed in comparison with A2.S0, it is clear that the midden deposits under Mound A are not uniform and likely represent entirely separate events. A1.S0 has higher than average numbers of beakers, jars, and restricted bowls and well below average numbers of bowls. A2.S0 displays the opposite pattern, showing the highest number of bowls of any Feltus context (see Table 4.7). Moreover, vessels from A1.S0 are of smaller than average size while vessels from A2.S0 are larger than average (see Table 4.8). Only the beakers from A1.S0 are unusually large, perhaps indicating that they served as storage rather than cooking vessels (Jones 1996:3; Wells 1998:175).

Additional evidence from our excavations further supports the conclusion that A1.S0 and A2.S0 have distinct depositional histories. First, the modeled radiocarbon dates from Mound A place A2.S0 later in time than all other Mound A contexts. A2.S0 dates to the end of the Ballina phase and postdates at least the first construction stage of Mound A. Wash atop the midden deposit suggests that at least some mound construction took place after the midden was in place. It is thus most likely that A2.S0 is a flank midden associated with A.S2 or A.S3, while A1.S0 is undoubtedly a premound deposit. Second, features are common in

A1 but not in A2. In A1, 21 features were identified on the surface of the midden (including areas of surface burning, possible post holes, and possible pits) and abundant small posts were identified at its base (representing the remains of buildings, screens, scaffolds, and/or drying racks). In A2, three areas of surface burning were visible on the midden surface, but the base of the midden showed no evidence of previous occupation. Finally, the stratigraphic profiles of the middens themselves differ. Al.S0 shows a possible break in midden accumulation around 4 to 6 cm below the surface and has a distinct trash layer on top of a portion of it. A2.S0 shows no breaks in its construction (Sarah Sherwood, personal communication) and sherds from the top and bottom of the midden have been refit, indicating rapid, unbroken deposition.

Combined, the evidence from a functional analysis of the ceramics supports an interpretation of intensive food consumption across the Feltus landscape. Cooking would also have occurred with some frequency, and storage was uncommon. Based on rapidly deposited ceramic remains dominated by large bowls, short-lived episodes of large-scale food consumption occurred in the Mound D area during the Sundown phase and on and around Mound A during the Ballina phase. The evidence from floral and faunal analyses of these deposits further supports this conclusion (see Chapter 5). More gradual accumulation of debris took place east of Mound A prior to mound construction and may indicate a longer-term occupation of this location. The surfaces of Mound B and the flank midden on Mound C indicate that food consumption was also emphasized on mound summits during the Ballina and Balmoral phases. Higher proportions of beakers during the Balmoral phase may indicate that the nature of these mound-top activities shifted slightly during late Coles Creek times.

Summary of Coles Creek Vessel Form Data

In the last two decades, vessel form analysis has become standard practice in the LMV and most studies use roughly comparable methods to identify vessel shape and size (e.g., Hunter et al. 1995; Jones 1996; Kidder 1993; Lee et al. 1997; Roe 2010; Ryan 2004:89-160; Wells 1998). This standardization, when combined with the relatively limited suite of vessel forms, allows assemblages from most Coles Creek sites to be compared with only minor standardization of terminology. For my purposes, the most important change involved separating restricted bowls from open bowls due important functional differences between the two classes. In most cases, it was possible for me to use the raw data presented in the appendices of the aforementioned reports to adjust counts accordingly (Table 4.10).[19]

The most salient trend discussed in the broader literature on Coles Creek ceramics is a drastic reduction in bowls and concomitant increase in beakers and jars from the early Coles Creek through Plaquemine eras (Lee et al. 19979.76; Ryan 2004:156-157). Jones (1996:4-5) reports the following pattern from Osceola:

> Bowls comprise 50% or more of the early Coles Creek assemblages, whereas they account for less than 20% of the later Balmoral phase vessels. An examination of bowl diameters reveals that, not only are there more bowls in early Coles Creek contexts, there are also much larger bowls. The quantity and size of bowls in these levels indicate that food was being prepared and served to large numbers of people at Osceola during the early Coles Creek phases. This activity ended by the Balmoral phase.

The data from Hedgeland further support this trend of reduction in the size for serving vessels through Coles Creek times (Ryan 2004:157). Roe (2010:160-161) recognizes another trend in the broader literature by comparing assemblages from Raffman to other Coles Creek

[19] In the case of Hedgeland, I could correct the overall counts for the site, but could not adjust the individual phase assemblages. In other cases, the numbers used to calculate my comparative percentages are estimated based on graphical representations of the data and may not be exact. I am confident, however, that they accurately represent the trends in the data.

Table 4.10. Comparative proportions of vessel forms for Coles Creek sites including Blackwater, Feltus, Hedgeland, Jolly, Lake Providence, Osceola, Raffman, Richardson, Shackleford Lake, divided by temporal phase.

Site Name	Site Type	Phase	BEAKERS	BOWLS	JARS	RESTRICTED BOWLS	OTHER
Feltus	Pre-mound	Hamilton Ridge	13%	66%	6%	10%	5%
Osceola	Pre-mound	Mt. Nebo	3%	57%	31%	9%	-
Shackleford Lake	Mound	Mt. Nebo - Sundown	12%	42%	26%	20%	-
Feltus	Pre-mound	Sundown	20%	50%	11%	17%	2%
Hedgeland	Mound	Sundown	3%	75%*	21%	*	1%
Lisa's Ridge	Non-mound	Sundown	18%	39%	25%	18%	-
Osceola	Pre-mound	Sundown	8%	51%	28%	13%	-
Richardson	Non-mound	Sundown - Ballina	7%	57%	9%	27%	-
Feltus	Mound	Ballina	22%	50%	11%	15%	2%
Hedgeland	Mound	Ballina	7%	81%*	10%	*	2%
Bird's Creek	Non-mound	Balmoral	19%	38%	39%	4%	-
Feltus	Mound	Balmoral	11%	60%	16%	11%	2%
Jolly	Non-mound	Balmoral	14%	37%	49%	0%	-
Osceola	Mound	Balmoral	30%	28%	29%	13%	-
Hedgeland	Mound	Balmoral - Preston	10%	61%*	27%	*	2%
Raffman	Mound	Balmoral - Preston	9%	37%	51%	3%	-
Blackwater	Non-mound	Preston	10%	53%	36%	1%	-
Lake Providence	Mound	Preston	15%	47%	17%	19%	2%
Hedgeland	Mound	Preston - Routh	6%	56%*	34%	*	4%
Hedgeland	Mound	Routh	13%	45%*	42%	*	-

*Given the published data, it was impossible to separate bowls from restricted bowls in these contexts.

sites based on site type. Generally, she reports that jars predominate at large mound centers while shallow bowls dominate at single-mound and non-mound sites. She implies that food and other goods were stored at large mound sites while smaller sites emphasized consumption of that food.

These shifts in vessel form have been recognized as reflecting important changes in the lives of Coles Creek people, Jones (1996:5) suggests that during early Coles Creek times, mound sites were the focus of communal ritual accompanied by feasting while late Coles Creek assemblages reflect emerging elites restricting access and using mounds as residential platforms (see also Roe 2010:164). Lee et al. (1997:9.77) find some support for this hypothesis, but suggest that differences between elite and non-elite contexts in the late Coles Creek were minor and that the recognized patterns were just as likely explained by changes in subsistence practices brought about by the introduction of maize.

The data from Feltus can be brought to bear on these previously recognized trends by asking three questions. First, do we see a decrease in bowls and a concomitant increase in jars and beakers from the Hamilton Ridge through Balmoral phase deposits at Feltus? Second, do we see bowl size decrease through time? And third, does the Feltus assemblage, when compared with contemporary non-mound sites, show a higher percentage of jars?

Looking only at the Feltus assemblage, bowls remain the dominant vessel form and show no steady decrease from the Hamilton Ridge through Balmoral phases (see Table 4.10).[20] Jars steadily increase from 6% during the Hamilton Ridge phase through 16% during the Balmoral phase. Beakers show a similar positive trend (though they drop off again during the Balmoral phase).

[20] It is important to note here that the sample sizes from both the Hamilton Ridge (n = 35) and Balmoral (n = 64) phases at Feltus are quite small.

Looking at the data from twenty temporal components from twelve comparative sites, a subtle trend from more to fewer bowls does hold. However, it is not nearly as dramatic as described in the literature. This same trend is visible when these 20 components are collapsed into 10 temporal categories (Table 4.11). Here, four of five pre-Balmoral phase components have higher than expected numbers of bowls while only one of five post-Balmoral phase components has above average bowl counts. The concomitant increase in jars remains a striking pattern. Only one early site component (the premound, Mt. Nebo phase component at Osceola) has a higher than expected number of jars, while six late components from Bird's Creek, Jolly, Raffman, Blackwater, and Hedgeland all have high jar counts (see Table 4.10). When collapsed temporally, all pre-Balmoral phase components have lower than expected jar counts and all but one post-Balmoral phase components have higher than expected jar counts (see Table 4.11). Any patterning in the abundance of beakers does not seem to hold when the comparative data are considered.

Perhaps more importantly, this combined data set indicates strong patterning in the abundance of restricted bowls, with the form being much more popular in pre-Balmoral phase components. Six early versus two late components show higher than average counts of restricted bowls (see Table 4.10).[21] This shift is clearly visible when restricted bowls drop from 15% to 7% of the assemblage during the Balmoral phase. This shift occurs at precisely the time that jars jump from 11% in the Ballina phase to 33% in the Balmoral phase (see Table 4.11).

The terminological combination of restricted bowls and open bowls in most previous studies of Coles Creek ceramics have obscured this pattern. Thus, when the Feltus data are

[21] It is possible that, should additional data from Hedgeland become available, restricted bowl counts from that site may change this pattern.

Table 4.11. Data from Table 4.10 collapsed into ten temporal categories to reveal changes through time in Coles Creek vessel form.

Phase	BEAKERS	BOWLS	JARS	OTHER	RESTRICTED BOWLS
Baytown	8%	62%	19%	4%	10%
Baytown - Sundown	12%	42%	26%	-	20%
Sundown	12%	49%	21%	1%	16%
Sundown - Ballina	7%	57%	9%	-	27%
Ballina	15%	50%	11%	2%	15%
Balmoral	19%	41%	33%	-	7%
Balmoral - Preston	10%	37%	39%	1%	3%
Preston	13%	50%	27%	-	10%
Preston - Routh	6%	*	34%	4%	*
Routh	13%	*	42%	-	*
Average†	13%	45%	30%	1%	11%

*Given the published data, it was impossible to separate bowls from restricted bowls in these contexts.
†Averages were calculated to not include those contexts for which bowls and restricted bowls could not be separated.

considered, we see a *slight* decrease in bowls and concomitant increase in jars (and potentially beakers) from the Hamilton Ridge through Balmoral phases. However, we see a much more dramatic decrease in restricted bowls than in open bowls. In the past, this decrease in bowls has been interpreted as marking a shift from more emphasis food consumption to more emphasis on food storage, marking a simultaneous shift from more communal to more restricted activities at Coles Creek sites (Jones 1996:5; Roe 2010:164). Recognizing that this shift is more from restricted bowls to jars than from open bowls to jars has significant implications for this interpretation. It appears that the transition occurring at the beginning of the Balmoral phase may relate more to the cooking methods used by Coles Creek people than to significant differences in the types of activities taking place at the site.

This cooking-focused explanation lends some support to Lee et al.'s (1997:9.77) position that the introduction of maize (or perhaps other cultigens), rather than the differentiation of an elite class, sparked changes in Balmoral phase communities.

Turning now to the second question, the Feltus data do not show consistent pattern of bowl size decreasing through time. Rather, average bowl size increases from the Hamilton Ridge through Ballina phases (23.5 cm to 26.5 cm to 27.5 cm), and then drops again to 25 cm during the Balmoral phase. When raw counts are considered, there are many more large bowls (here defined as those over 35 cm in diameter) during the Sundown (n = 10) and Ballina (n = 7) phases than during the Balmoral (n = 2). The data from Feltus thus tentatively support the hypothesis that bowl size decreases during the Balmoral phase.

Finally, the data from Feltus do not support the supposition that mound sites were locations for food storage (i.e., show a higher percentage of jars when compared to contemporaneous non-mound sites). The Ballina phase assemblage at Feltus contains only 11% jars while the contemporary occupation at Bird's Creek contains 39% jars. Likewise, the Balmoral phase assemblage at Feltus contains 16% jars while the non-mound Jolly assemblage contains 49% jars. Thus, during both the Ballina and Balmoral phases, it appears that food consumption was taking place in large quantities at Feltus, while storage remained primarily at non-mound sites (cf. Roe 2010:160-161). Overall, this emphasizes a great deal of continuity in the use of the Feltus landscape from the earliest occupation, during the Hamilton Ridge phase, through the latest, during the Balmoral phase.

CHAPTER 5

FOOD REMAINS AT FELTUS

While ceramic analyses reveal interesting patterns that speak to the variety of activities taking place at Feltus, there is recognized need for analyses that integrate ceramic, floral, and faunal data sets (Blitz 1993:90-92; Bray 2003:100; Jackson and Scott 2003; Kelly 2001; Knight 2004:308-309; Pauketat et al. 2002; Potter and Ortman 2004:181; Ralph 2007:41-43; VanDerwarker 2010). Thanks to good preservation of both floral and faunal materials, Feltus provides an unusual opportunity to integrate all three in a discussion of food-related activity at the site. This chapter focuses on what the plant and animal data reveal about the activities that took place at Feltus and how those activities compare with what we know about the activities taking place at other Coles Creek sites.

Anthropologists and archaeologists actively recognize that food is not only eaten to sustain the body, but also affects and is affected by the social, economic, and political world in which it is selected, prepared, and consumed (Appadurai 1981; Bourdieu 1984; Van der Veen 2003). Moreover, food—and in particular the consumption of food—plays an active role in the creation and negotiation of social identities and relationships. Despite this recognition, studies of Coles Creek foodways have thus far focused on questions of domestication and the origins of agriculture and largely ignored questions about the social uses of food (Fritz and Kidder 1993; Kidder and Fritz 1993; Kidder 1990; 1993; Roberts

2004; 2006; Rose et al. 1984; Weinstein 2005). In the broader literature, food—in particular the consumption of food—has been shown to be "a powerful medium of social relations" (Twiss 2007:50), playing an active role in the creation and negotiation of social identities and relationships. This chapter focuses on questions related to the social aspects of Coles Creek foodways, though the data presented have the potential to contribute to more commonly discussed topics as well.

Plant Remains

Current understandings of Coles Creek peoples in the LMV suggest that they were fisher-hunter-gardeners that subsisted primarily on wild plants and animals. Nuts (particularly acorn and hickory) were primary staple foods, though some wild and potentially cultivated seeds were also important. Wild fruits, seeds, tubers, and greens supplemented these staples (Fritz and Kidder 1993; Kidder 2004:553). Though it was originally assumed that the platform mound-and-plaza complexes constructed by Coles Creek people necessitated an agricultural resource base, it is now generally accepted that domesticated plants were not common until the end of Coles Creek when domesticated chenopod, knotweed, maize, and cultivated maygrass enter the archaeological record. Even then, it is not likely that these plants provided the majority of the Coles Creek diet (Fritz and Kidder 1993; Kidder and Fritz 1993; Roberts 2006:17).

The data from Feltus provide an opportunity to test this interpretation of Coles Creek subsistence and to explore variation within this strategy by illuminating what was happening east of the Mississippi, where Coles Creek foodways have not been the focus of investigation. Moreover, the Feltus data, particularly those from potential feasting contexts, allow us to

look beyond subsistence at the social uses of food during a dynamic period in LMV prehistory. Here I outline the methods used to collect and analyze plant remains, briefly discuss the taxa discovered, examine intrasite patterning in the floral data, and relate Feltus plant remains to comparable data sets. I focus explicitly on questions of what plant remains can tell us about the types and nature of activities that took place at the site.

Sample and Methods

We took systematic flotation samples from all mound floor, midden, and feature contexts at Feltus. Generally, we took 10 L samples from middens and larger features, but recovered smaller features and postholes in their entirety. We processed samples in the field with a modified, machine-assisted SMAP flotation system (see Watson 1976) collecting heavy fraction in 1.5 mm mesh and light fraction in 0.5 mm mesh.

Heavy and light fractions of thirty flotation samples from five primary contexts at Feltus were analyzed. Williams (2008) analyzed 19 of these samples in a previous study and an additional 11 were initially analyzed by the Spring 2009 Archaeobotany Lab Methods course taught by Dr. C. Margaret Scarry at UNC-CH. I checked and standardized all samples. Analyzed contexts include: (1) the midden east of Mound A (A1.S0), a primary deposit that dates to the early Ballina phase and was deposited before construction on Mound A began, (2) the midden southwest of Mound A (A2.S0), another primary deposit that dates to the late Ballina phase and is likely associated with a later stage of Mound A's construction, (3) features within the fill and on the surfaces of Mound B (B1.S3, B1.F4, and B1.F5), which span the late Ballina through early Balmoral phases and are associated with either mound construction or summit use, (4) Feature 4 in the Mound D area (D2.Feature 4), a large

midden pit dating to the Sundown phase, and (5) the sheet midden overlaying the Feature 4 area (D2.Midden), which also dates to the Sundown phase but is stratigraphically slightly later than Feature 4 (Table 5.1). Appendix 2 contains raw counts, percentages, and ubiquity data from these 30 samples (Table A2.1–A2.3) and standardized counts (Table A2.4–A2.6).

Light fractions were weighed and large samples were subsampled. They were then size-sorted into 2 mm, 1.4 mm, 0.71 mm, and less than 0.71 mm fractions. Material in the 2 mm and 1.4 mm fractions was completely sorted (separating wood, seeds, and nutshell) while smaller material was scanned for seeds, acorn shell, and cucurbit rind. The heavy fraction was weighed and then size sorted into greater than 2 mm and less than 2 mm fractions, both of which were sorted. All bone, stone, and ceramic materials, as well as modern plant matter, were classified as contaminants and not analyzed. All prehistoric botanical remains were classified, counted, and weighed, though I did not attempt species identification for wood charcoal. In many cases unidentified and unidentifiable plant materials remain. Future classification of unidentified seeds may be possible given further study.

For the purposes of this chapter, wood is represented by weight, while nutshell and seeds are represented by count.[1] Since absolute (raw) counts are subject to various biases (Popper 1988), I standardized the Feltus data using a ratio of count per gram of plant weight. Most importantly, this ratio allowed me to effectively compare samples of unequal size and thus look at both intra- and inter-site patterning (Miller 1988).[2] In addition to standardized

[1] Nutshell remains from the Feltus samples are similarly fragmented, likely indicating similar processing methods across the site and through time. Count is thus an appropriate measure for comparing contexts.

[2] Though it is more common to standardize counts by sample volume, I found that method to be less effective at identifying important patterning in the data. Standardizing by sample volume primarily revealed differences in type of deposit (i.e. amount of burned material in midden versus mound fill samples) rather than differences in the make-up of the burned material within those deposits. Should standardization by sample volume be required for comparative purposes, volumes for all samples are reported in Table 5.1.

Table 5.1. Provenience of flotation samples from Feltus.

Context Catalog Nos. Heavy	Light	Analysis Unit	Volume (L)	Plant Weight (g)	Wood Weight (g)	Other Weight (g)
Mound A, East Midden (Early Ballina Phase)						
169	190	A1.S0	10	3.87	3.79	0.08
178	196	A1.S0	10	7.41	6.69	0.72
1078	1080	A1.S0	10	7.18	6.76	0.42
1100	1101	A1.S0	10	0.67	0.62	0.05
1109	1110	A1.S0	10	11.64	11.20	0.44
1205	1206	A1.S0	4	7.27	7.00	0.27
1211	1212	A1.S0	10	1.10	1.06	0.04
1219	1220	A1.S0	4	8.73	7.57	1.16
1223	1224	A1.S0	10	18.88	17.90	0.98
1231	1232	A1.S0	8	22.83	22.68	0.15
1270	1271	A1.S0	10	2.37	2.36	0.01
170	171	A1.Features	2	9.15	9.10	0.05
Mound A, Southwest Midden (Late Ballina Phase)						
648	649	A2.S0	10	9.25	7.53	1.72
650	651	A2.S0	10	23.56	21.92	1.64
702	703	A2.S0	20	17.17	14.97	2.20
Mound B Summits (Late Ballina / Early Balmoral Phase)						
482	474	B1.S3	10	0.33	0.32	0.01
179	186	B1.F4	10	0.16	0.16	0.00
-	447	B1.F4	3	15.40	15.38	0.02
317	318	B1.F5	10	0.05	0.05	0.00
South Plaza, Feature 4 (Sundown Phase)						
480	475	V2.Feature 4	10	10.03	9.47	0.56
507	516	V2.Feature 4	10	13.40	11.91	1.49
1378	1379	V2.Feature 4	10	15.63	15.00	0.63
1381	1382	V2.Feature 4	10	24.01	22.89	1.12
-	1384	V2.Feature 4	10	8.67	8.64	0.03
1415	1414	V2.Feature 4	10	16.74	15.53	1.21
1416	1417	V2.Feature 4	10	1.36	1.09	0.27
1471	1451	V2.Feature 4	10	6.79	6.03	0.76
South Plaza, Midden (Sundown Phase)						
1293	1294	V2.Midden	10	5.02	3.94	1.08
1409	1410	V2.Midden	10	2.19	2.09	0.10
-	1377	V2.Mixed	10	3.41	3.39	0.02

counts, I relied on percentages to provide a straightforward comparison of the importance of one taxon to other taxa across samples (Miller 1988). Finally, I applied measures of ubiquity and diversity as well as correspondence analysis to further identify and explore patterning in the data (Popper 1988; Shennan 1997; VanDerwarker 2010).

Ubiquity measures highlight taxa that routinely appear in archaeological contexts. "This type of analysis is essentially a presence/absence analysis that measures the frequency of occurrence (as opposed to abundance), through measuring the number of samples in which a taxon was identified" (VanDerwarker 2010:66; see also Popper 1988:60-64). Because disposal practices strongly affect ubiquity values, I have made comparisons of ubiquity primarily within classes of plant remains.[3] One of the primary benefits to ubiquity is that it can be applied across both floral and faunal remains (VanDerwarker 2010:66-67). This is also true for diversity, which has two dimensions—richness and evenness. Richness relates to the number of taxa in an assemblage and evenness relates to how uniformly those taxa are spread across the samples (Kintigh 1989; VanDerwarker 2010:67-68). I used Kintigh's (1994) DIVERS and DIVPLT programs to measure and visually display the diversity of my study assemblages. This method generates a statistical model of expected richness for a series of sample sizes and plots them on a line graph with a confidence interval. Archaeological assemblages can then be plotted on this graph such that those with higher than expected richness plot above the line and those with lower than expected richness plot below the line (Kintigh 1989). Finally, as discussed in Chapter 3, correspondence analysis highlights the

[3] Traditionally, ubiquity is applied when the samples compared come from clearly distinct contexts (i.e., pits or hearths). In this case, I analyzed numerous samples from four massive midden deposits and one mound surface. However, I found that it was still useful to be able to talk about what percentage of those samples contained a given taxa and have thus chosen to use ubiquity in this sense. For example, knotweed is present in 100% of the five analyzed contexts from Feltus, but present in only 57% of the samples. Acorn is also present in 100% of the five analyzed contexts but is present in 90% of the samples.

degree to which the values of one variable correlate with the values of another (here, context and plant category respectively) by creating a graphical representation of these relationships in which nearby points are positively associated (Shennan 1997:308-360).

I discuss plant remains in four categories—nuts, starchy and oily seeds, fruits, and other seeds (Table 5.2). Miscellaneous and unidentified categories are also used in accordance with the data. In two instances, I subdivide these categories. Acorns are examined separately from other nuts because they were an important source of carbohydrates, as opposed to primarily providing fat and protein. Likewise, starchy seeds are examined separately from oily seeds.

Pre- and post-depositional factors bias the occurrence of taxa in a given archaeological assemblage and must be briefly considered here. Most importantly, plant remains must be carbonized to preserve archaeologically. We must consider where and how various plant resources were used, processed, stored, and disposed and how those factors affect their potential for fire exposure. Differences in the plants themselves can also influence preservation, with denser remains (e.g., nutshell) being better preserved than more fragile remains (e.g., seeds). Processing methods such as crushing or grinding further affect whether remains enter the archaeological record intact. Finally, archaeological methods of sampling, recovering, processing, and identifying floral remains also affect the final data set (Popper 1988). Because it is impossible to entirely compensate for these factors, I must assume that the more a plant was used, the more likely it will be to appear in flotation samples (Yarnell 1982).

Table 5.2. Plants identified from Feltus.

	Common Name	Usages	Taxonomic Name
Nuts	Acorn	Nut (Starchy)	*Quercus* spp.
	Hickory	Nut (Oily)	*Carya* spp.
	Pecan	Nut (Oily)	*Carya illinoensis*
	Walnut	Nut (Oily)	*Juglans nigra*
Starchy and Oily Seeds	Amaranth	Seeds (Starchy)/Greens	*Amaranthus* sp.
	Chenopod	Seeds (Starchy)/Greens	*Chenopodium* sp.
	Cheno-am	Seeds (Starchy)/Greens	*Chenopodium/Amaranthus* spp.
	Erect Knotweed	Seeds (Starchy)/Greens	*Polygonum erectum*
	Little Barley	Seeds (Starchy)	*Hordeum pusillum*
	Maygrass	Seeds (Starchy)	*Phalaris caroliniana*
	Smartweed/Knotweed	Seeds (Starchy)/Greens	*Polygonum* spp.
	Squash	Seeds (Oily)/Nonfood	*Cucurbita* sp.
	Sumpweed	Seeds (Oily)	*Iva annua*
	Sunflower	Seeds (Oily)	*Helianthus annuus*
Fruits	Bramble	Fruit	*Rubus* sp.
	Cabbage Palm	Fruit/Nonfood	*Sabal palmetto*
	Elderberry	Fruit	*Sambucus* sp.
	Grape	Fruit	*Vitis* sp.
	Hackberry	Fruit	*Celtis* sp.
	Maypop	Fruit	*Passiflora incarnata*
	Persimmon	Fruit	*Diospyros virginiana*
	Plum or Cherry	Fruit	*Prunus* sp.
	Sumac	Fruit	*Rhus* sp.
Other Plants	Bedstraw	Greens/Nonfood	*Galium* sp.
	Cane	Nonfood	*Arundinaria* sp.
	Carpetweed	Incidental	*Mollugo verticilata*
	Catchfly	Incidental	*Silene* sp.
	Morning-glory	Medicinal	Convolvulaceae
	Nightshade	Medicinal	*Solanum* sp.
	Pokeweed	Greens	*Phytolacca* sp.
	Purslane	Greens	*Portulaca* sp.
	Spurge	Medicinal	*Euphorbia* sp.
	Tobacco	Medicinal	*Nicotiana* sp.
	Vetch or Wild Pea	Legume/Greens	*Vicia* sp. or *Lathyrus* sp.
	Composite Family	-	Asteraceae
	Grass Family	Seeds (Starchy)/Nonfood	Poaceae

Nuts

All nuts in the Feltus collections are naturally abundant in LMV hardwood forests and are collectable throughout the fall. These easily storable resources were "the most important wild plant foods for most Native American peoples of the Eastern Woodlands" (Scarry 2003:57). This importance is clearly demonstrated by the Feltus data, as nuts are both the most abundant and ubiquitous floral category.

ACORN (*Quercus* spp.; sample: 996 nutshell, 8 nutmeat).

Acorn shell was found in nearly every sample at Feltus (90%)[4] and acorns were undoubtedly an important food source. This fits the recognized pattern of Coles Creek sites containing unparalleled amounts of acorn (Fritz 2000:238). Oaks were common in the LMV and if collecting trips were carefully timed, people could have collected large numbers of acorns every year. Oaks may even have been managed in groves, allowing for more effective collection (Fritz 2000:242). Acorns are starchier than other nuts and remained an important source of carbohydrates for southeastern Indian groups even after maize was introduced (Scarry 2003:66). Acorns can be effectively stored when parched. Some species are readily edible without additional processing, while others must have the tannins leeched from their nutmeats before consumption (Scarry 2003:66).

HICKORY (*Carya* spp.; sample: 868 nutshell).

Hickory shell was also found in most samples at Feltus (77%). As opposed to acorn, hickory nutshell is often overrepresented in the archaeological record due to its use as a fuel

[4] Acorn nutshell is generally underrepresented in the archeological record because of how it fragments and the degree to which it degrades when carbonized (Smith 1996:60). To compensate for this, I counted all acorn shell fragments greater than 0.71 mm.

source, the processing methods necessary to consume it, and its hardness, which causes it to preserve better when carbonized. Thus, hickory's abundance may not always be indicative of its importance as a food source (Smith 1996:59). However, in this case, hickory nuts were undoubtedly also an important food source. Because they contain fat and protein, hickory nuts are high-energy foods. Trees tend to grow in groves within hardwood forests and "trees within a grove tend to be on the same cycle. Thus, in good years mast may be exceptionally abundant locally, making it possible to harvest large quantities of nuts with relatively little time spent on search and travel" (Scarry 2003:60). Because the meat of hickory is difficult and time-consuming to extract, it is likely that nuts were crushed whole and rendered into oil. Both this oil and the unshelled nuts could be stored (Scarry 2003:61). Crushed hickory may also have been made into *ku-nu-che*, balls of hickory nutmeat and shell that can be made into soup (Fritz et al. 2001).

PECAN (*Carya illinoensis*; sample: 90 nutshell).

Like hickory, pecan (or thin-shell hickory) is a storable resource that are high in fat and protein and grow in groves within LMV forests. Unlike hickory, pecan meat was extracted by hand, not crushed for oil (Scarry 2003:61). The ease of processing pecan near collection sites means that it may be underrepresented in the archaeological record of consumption sites (Smith 1996:60). Though to some degree, this may explain why pecan does not approach the amounts of acorn and hickory in the Feltus assemblage, it is more likely that the differences are due to tree distribution.

WALNUT (*Juglans nigra*; sample: 34 nutshell).

Walnuts are the least abundant nuts at Feltus. While they are the best source of plant protein available in the LMV, they may occur less frequently than hickories because they are more difficult to collect en masse and must be handpicked from the shell (and could not be used for oil without such picking). They likely contributed to the diet of Feltus people, but did not played as large a role as other nut resources. Like hickory and pecans, unshelled nuts could be stored (Roberts 2006:49; Scarry 2003:64).

Starchy and Oily Seeds

Seeds of some indigenous, weedy plants are rich in starches and oils and were important in prehistoric diets. The consumption of their greens and flowers may also have provided important vitamins and minerals. Such plants prefer open, disturbed habitats and often thrive on the edges of human occupation. They would have been easy to collect in large quantities from highly productive, concentrated stands (Scarry 2003:70). Like nuts, they are storable. At Feltus and in the archaeological record more generally, starchy seeds outnumber oily seeds. However, this differentiation likely has more to do with preservation factors than dietary importance (Smith 1992:127). Some of these plants were cultivated and domesticated by prehistoric southeastern populations (Smith 1992) and the Coles Creek archaeological record may contain early evidence of these morphs being adopted by populations living in the southern LMV (perhaps from neighbors further north in Arkansas and Tennessee with longer histories of crop production).

AMARANTH (*Amaranthus* sp.; sample: 92 seeds).

Amaranth would have been an additional source of carbohydrates for LMV people, including those at Feltus. The seeds could be collected in bulk and stored if parched and the greens were likely also consumed (Scarry 2003:71-73). In addition to the confidently identified seeds, 74 additional seeds were classified as cheno-am because they could not be positively identified as either chenopod or amaranth.

CHENOPOD (*Chenopodium berlandieri*; sample: 302 seeds).

Like amaranth, chenopod seeds would have been an additional source of carbohydrates for people living in the LMV and young leaves were likely consumed raw or as potherbs. Chenopod is the most common seed at Feltus, occurring in 73% of the samples, and was likely an important food resource. Domesticated chenopod (as well as potentially domesticated knotweed, little barley, sunflower, and cultivated maygrass) has been documented in the Baytown period at sites such as Toltec, Taylor, McNight, and Rock Levee (Kidder 2004:552). Domesticated forms of chenopod have an unpitted testa, truncate margin, and thin seed coat (21 microns or less) when compared to wild forms (Smith 1992; Smith and Funk 1985). Fritz and Kidder (1993) report no confidently identified domesticated chenopod from Baytown or early Coles Creek sites south of Vicksburg, but scanning electron microscopy identified both wild and domesticated morphs in the Feltus assemblage. Clearly domesticated morphs were identified from Ballina phase deposits on top of Mound B (B.S3). Scanning electron microscopy of these seeds was conducted at UNC-Chapel Hill's Analytical and Nanofabrication Laboratory and the images were sent to Bruce Smith for a second opinion (Figure 5.1). He identified them as the domesticated, pale (a.k.a. naked)

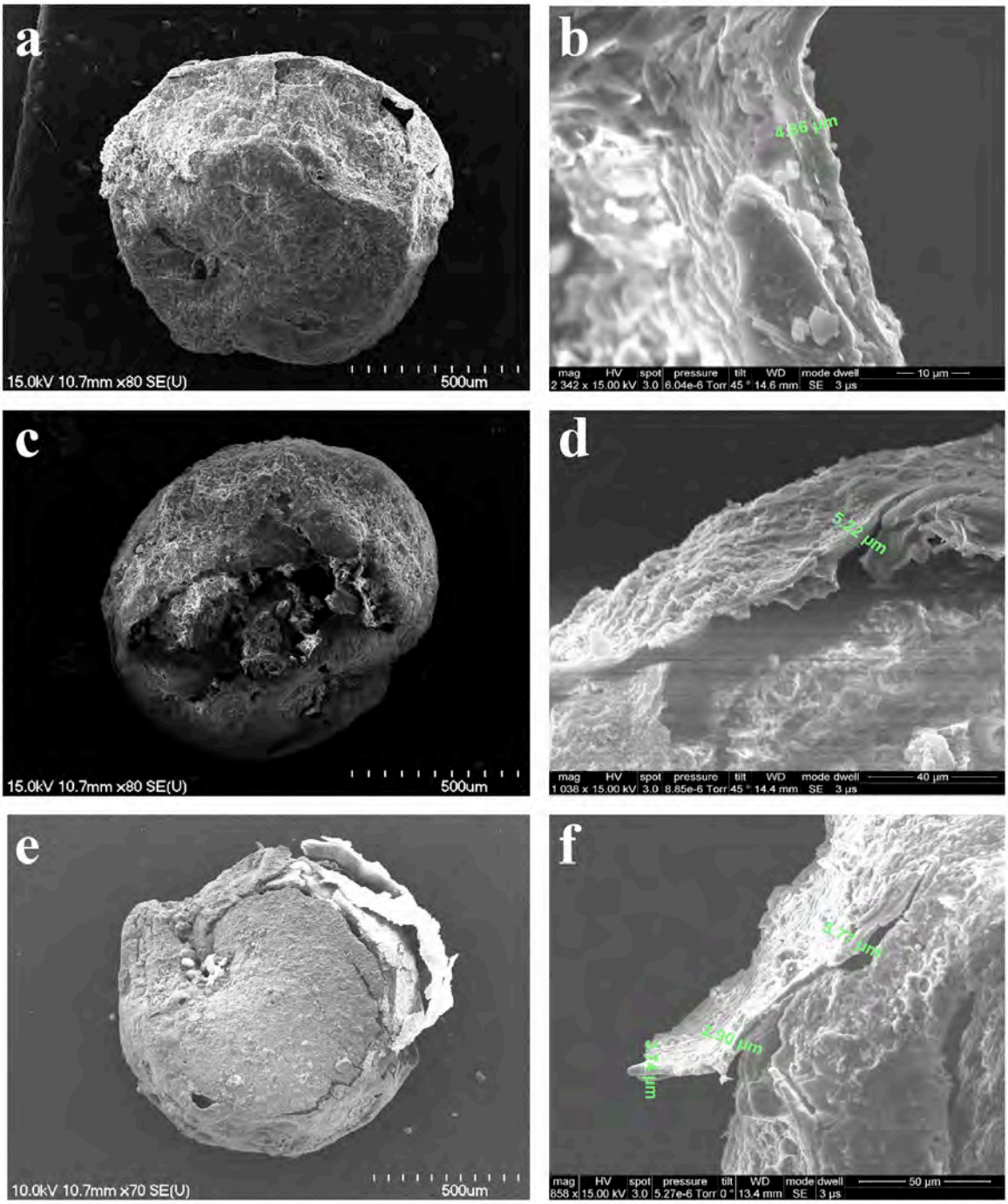

Figure 5.1. SEM images of domesticated chenopod seeds from B.S3 at Feltus. (a, c, e) Whole seed images showing the wavy, convoluted appearance of the testa and the presence of a flattened side away from the beak. (b, d, f) Detailed images of the seed coats on the same chenopod seeds showing thin testa measurements.

morph based the wavy, convoluted appearance of the testa, its thinness, and the presence of a flattened side away from the beak (Bruce Smith, personal communication 2010).

ERECT KNOTWEED (*Polygonum erectum*; sample: 65 seeds).

Knotweed is not as abundant as chenopod, amaranth, or maygrass, but still occurs in most Feltus samples[5] (57%). The carbohydrate-rich seeds ripen in the summer and fall, but collecting was most effective in the fall when ripening is synchronized. Like chenopod, young leaves were likely collected and consumed raw or as potherbs. Taxonomic and morphological complications make it difficult to distinguish wild and domesticated knotweed (Fritz 1987) and thus it has not been attempted here. That said, knotweed played a role in prehistoric horticultural systems as early as the Early Woodland (Smith 1992:108-110) and was likely an important resource for the people at Feltus.

LITTLE BARLEY (*Hordeum pusillum*; sample: 5 seeds).

Little barley is often included within the Eastern Agricultural Complex because of its abundance at archaeological sites with known cultivated assemblages (Smith 1992:103). However, some specialists believe it naturally occurs in stands dense enough to provide significant harvests during the spring and early summer (Roberts 2006:55; cf. Smith 1996:64). Like other grains, little barley provided an important source of carbohydrates for some prehistoric populations, but its presence in small quantities at sites could also be incidental (Smith 1996:64). At Feltus, little barley only occurred in A2.S0. While it is not abundant, its presence in only one context suggests it was not a part of the normal seed rain.

[5] An additional 73 seeds were classified as smartweed/knotweed (*Polygonum* spp.). This category includes seeds of the *Polygonum* genus that could not be identified as *Polygonum erectum*.

MAYGRASS (*Phalaris caroliniana*; sample: 232 seeds).

Maygrass, which is also available during the spring and early summer, is the second most common seed at Feltus and occurs in 70% of samples. Maygrass was undoubtedly an additional source of carbohydrates. Because maygrass is abundant (particularly in storage contexts), is found in association with known cultigens, and existed out of its modern geographic range, it is assumed that it was cultivated prehistorically (Fritz 2000:233-234; Roberts 2006:53; Smith 1992:107-108). That said, finding morphological evidence of domestication is difficult because seeds of vastly different sizes coexist on a single plant. Maygrass at Feltus may have been managed, but given that the LMV is within its natural range, this cannot be proven. Fritz (2014) has argued that maygrass may have also had significant ritual importance (see also Schoenwetter 2001). She suggests that maygrass provided an essential ingredient in Late Woodland and Mississippian feasting events in the American Bottom, and notes its frequent association with tobacco.

SQUASH (*Cucurbita* sp.; sample: 61 rind, 3 seeds).

Unlike most of the starchy seeds discussed above, the oily seeds of this genus provide a good source of protein and fat (Scarry 2003:69). The rind and flesh of some species is edible and the dry fruits were commonly employed as containers (Smith 1992:108). Squash was found in 69% of the A1.S0 and A2.S0 samples, but is notably absent from the Mound D area collections.

SUMPWEED (*Iva annua*; sample: 17 seeds).

Sumpweed seeds are similar to sunflower seeds in their high oil content, color, flavor,

and texture. Sumpweed was domesticated in the Southeast but also continued to grow wild in the edge zones between wet and well-drained soils (Smith 1992:49, 53; Roberts 2006:55). Seeds from Coles Creek sites, including Feltus, are all of wild size (Fritz 2000:238). Though sumpweed is infrequent in the Feltus collection when compared to starchy seeds, preservation factors combined with a 20% ubiquity in the collection overall implies it was still an important food source (Smith 1992:137).

SUNFLOWER (*Helianthus annuus*; sample: 2 seeds).

Sunflowers also provide protein and fat and were domesticated in the Southeast (Smith 1992:49-50; Roberts 2006:55), but the two examples from A2.S0 are within the size range of wild seeds. The low occurrence of sunflower at Feltus implies that the resource was not readily available or used and/or that the seeds have not preserved as well in excavated deposits.

Fruits

Though not as common as other categories of plant remains at Feltus, fruits were undoubtedly part of the Coles Creek diet. They would have supplemented staple resources by contributing essential vitamins and minerals (Scarry 2003:69). Some fruits may also have had important medicinal and ritual uses. Fruits in the LMV are wild resources, though prehistoric populations could have managed and encouraged their growth by weeding around young plants and protecting them from animals (Fritz 2000:248).

BRAMBLE (*Rubus* sp.; sample: 7 seeds).

Though not abundant at Feltus, bramble (i.e., blackberry or raspberry) seeds occur in most site areas indicating that they may have been eaten regularly. Because the small seeds are consumed with the flesh, low numbers in middens are expected. The most productive plants grow in areas of human disturbance and given the right growing conditions, good crops can be collected every year. "Brambles are also one of the most commonly used medicinal plants … with at least 38 usages for Eastern tribal groups… The plant, usually its roots, was an important component in preparations for colds, coughs, and even tuberculosis" (Williams 2000:192).

CABBAGE PALM (*Sabal* sp.; sample: 60 seeds).

The leaves of this plant were used for roof and wall thatch among LMV groups and the fruits, young shoots, and starchy stem heart were all edible (Roberts 2006:48). Ripe fruits would have been available from late fall through early winter, but could have been stored. Though occasionally stem fragments of this plant are identifiable in paleoethnobotanical studies (e.g., Roberts 2006:48), all examples from Feltus are from fruit seeds clearly indicating its use as a food source in addition to a construction material. It is the most abundant fruit in the Feltus assemblage and is highly concentrated in the Mound A middens (where 50% of samples contain cabbage palm) and absent from the Mound D area.

ELDERBERRY (*Sambucus* sp.; sample: 1 seed).

A single elderberry seed was found in Feature 4. Ripe elderberries provide Vitamin C and can be eaten fresh, dried, baked into bread, or made into tea. Elderberry has documented

medicinal uses that emphasize emetic, cathartic, and gastrointestinal applications (Williams 2000:163). Its low incidence at Feltus is likely due to the fact that seeds were commonly ingested, and its presence in a known ritual deposit could imply a ritual or medicinal use.

GRAPE (*Vitis* sp.; sample: 41 seeds).

Grape is the most ubiquitous and second most abundant fruit at Feltus but is highly concentrated in the Mound D area. These fruits could have been eaten fresh or dried and the sap and twigs could be used to prepare a medicinal drink to treat diarrhea, thrush, and kidney issues (Smith 1996:66; Williams 2000:201). The fruit would have been available from mid-summer to fall and thus if eaten more often when fresh, may imply seasonality for the Mound D area deposits.

HACKBERRY (*Celtis* sp.; sample: 1 seed).

A single hackberry seed was found in Feature 4. Hackberries may have been consumed as food, turned into tea, or served medical purposes. Hackberries were one of an "arsenal of herbal plants used by prehistoric women, midwives, and mothers to control fertility and assist in child birthing" (Williams 2000:46).

MAYPOP (*Passiflora incarnata*; sample: 2 seeds).

In addition to being eaten raw or dried, maypops could have been baked into bread or used as medicine. The roots of the maypop were used in weaning children, curing headaches, and healing scrapes (Williams 2000:150-153). Their low occurrence at Feltus could imply

that they are incidental or medicinal inclusions, especially because the seeds are large enough that they may be spit out and thus should appear in middens if being regularly consumed.

PERSIMMON (*Diospyros virginiana*; sample: 38 seeds).

Persimmon tends to be well represented in archaeological contexts as the fruits contain large, inedible seeds that must be discarded (Scarry 1986:265). At Feltus, it is the third most common fruit and is concentrated in A2.S0. Persimmon trees prefer disturbed habitats and thus their abundance in the late prehistoric archaeological record could be an indicator of increased land disturbance. Persimmons would have been available in the fall and winter months and were likely consumed fresh, dried, and baked into bread. In addition to being a basic subsistence food, persimmon has documented curative properties (Roberts 2006:50). “Sore throats, toothaches, stomach aches, and diarrhea were all treated with the high tannins and other chemicals contained in this plant” (Williams 2000:177).

PLUM OR CHERRY (*Prunus* sp.; sample: 1 pit fragment).

Stone fruits could be eaten both fresh and dried, but are exceedingly uncommon at Feltus, found only in A1.S0. Because it is unlikely that this specimen is an incidental inclusion, its presence indicates that this fruit was being exploited to some degree as either food, medicine, or dye. “The bark and roots were used as an antihelmintic, a cough medicine, a urinary aid, and to help with the healing of cuts or wounds to the skin and mouth” and were thought to have antibiotic properties (Williams 2000:184).

SUMAC (*Rhus* sp.; sample: 5 seeds).

Sumac is rare at Feltus and only found in the Mound A middens. The berries could be eaten fresh or dried and stored, and there are ethnographic records of people producing a cooling lemonade-like tea from the berries (Smith 1996:65-66). Medicinal applications are also well documented, most commonly as dermatological aids, treatments for colds or coughs, and antibiotics. Moreover, sumac stems, bark, roots, and berries provided provide brightly colored dyes, and the leaves were added to smoking mixtures (Williams 2000:160). Their correlation with deposits at Feltus that contain pipes could be evidence of ritual plant use.

Other Plants

The plants in this category were used for purposes other than seed or fruit consumption. Some were used primarily for greens or construction material while others have medicinal and ritual uses. In general, they are rare at Feltus.

BEDSTRAW (*Galium* sp.; sample: 14 seeds).

Bedstraw is found only in the Mound A middens at Feltus. Most paleoethnobotanists believe that bedstraw is included in deposits incidentally, however the leaves and parched seeds of this plant could be used as food, tea, or medicine for treating dermatological, kidney, or urinary symptoms. It is also possible that the plant itself was collected for bedding and construction material (Williams 2000:130).

CANE (*Arundinaria* sp.; sample: 1 stem fragment)

Cane grows in dense thickets and was regularly used by native groups in constructions and items such as mats. It is also possible that the seeds were consumed (Roberts 2006:48). Though it is remarkable that only one piece of cane was recovered from flotation samples at Feltus, cane impressions were found in daub on B.S5 and carbonized cane was found on B.S4, indicating that it was certainly used as a construction material by people at Feltus.

CARPETWEED (*Mollugo verticilata*; sample: 1 seed).

Carpetweed is a naturally abundant field weed. The single seed from A2.S0 is likely an incidental inclusion.

CATCHFLY (*Silene* sp.; sample: 1 seed).

Like carpetweed, catchfly is a naturally abundant field weed. The single seed from A1.S0 is also probably an incidental inclusion, though Williams (2000:147) does document medicinal uses for this plant.

MORNING-GLORY (Convolvulaceae; sample: 2 seeds).

The two morning-glory seeds from Feltus were found in A1.S0. They are unlikely to be incidental and indicate medicinal or ritual usage. Morning-glory has been recovered from known ritual contexts in the American Bottom and has both healing and hallucinogenic properties (Williams 2000:208-213).

NIGHTSHADE (*Solanum* sp.; sample: 2 seeds).

Found in A1.S0 and Feature 4 at Feltus, nightshade was also used for medicinal or ritual purposes. The ripe fruits and young greens of black nightshade are edible, but most wild North American varieties are toxic and dangerous to consume if harvested at the wrong time or incorrectly processed. "Some of these medicines were quite practical in their application, such as using it to get rid of worms in children. Other uses were probably more psychologically satisfying such as relieving loneliness, and for various ceremonial purposes" (Williams 2000:168). The association of these and other seeds with ceramic pipes may indicate that plants other than tobacco were being smoked at Feltus.

POKEWEED (*Phytolacca americana*; sample: 15 seeds).

Pokeweed seeds show up consistently on southeastern archaeological sites, but the immature greens of this plant were the part more likely being eaten to provide important vitamins and minerals (Scarry 2003:73). Because seeds would not occur on the immature plants, the fifteen seeds in the Feltus deposits may be better explained by a non-food use such as dye or medicine for treating skin ailments (Williams 2000:153-156) or as incidental inclusions because of the ubiquity of pokeweed plants in disturbed ground settings. At Feltus, pokeweed is concentrated in Feature 4.

PURSLANE (*Portulaca oleracea*; sample: 210 seeds).

Purslane is the third most abundant type of seed at Feltus, occurring in 47% of samples. Purslane grows in both open fields and disturbed areas. Its flowers and seeds are both edible, but it was most likely consumed as greens collected during the spring (Roberts

2006:56; Scarry 2003:73). The ubiquity of the seeds at Feltus suggests that this plant was an important food source for Feltus people. There is also historical documentation of purslane being used to soothe wounds and quiet gastrointestinal problems (Williams 2000:188).

SPURGE (*Euphorbia* sp.; sample: 1 seed).

The single spurge seed from Feltus was found in A2.S0 and is probably an incidental inclusion. That said, spurge has documented uses as an oral aid, purgative, dermatological aid, and cough medicine (Williams 2000:122).

TOBACCO (*Nicotiana* sp.; sample: 1 seed).

At Feltus, one seed is tentatively identified as tobacco, though scanning electron microscopy would be necessary to make a solid identification. It is known that tobacco was present in the LMV by A.D. 1000 (Kidder and Fritz 1993). Its social, ritual, and medicinal uses are well known due to its persistent significance in American Indian lifeways (Williams 2000:220-225).

VETCH OR WILD PEA (*Vicia* sp. or *Lathyrus* sp.; sample: 11 seeds).

These genera include vine-like herbs in the bean/legume family. Their leaves and seeds provide a concentrated source of protein (Roberts 2006:56) and Williams (2000:144-147) documents potential medicinal uses. They are concentrated in A2.S0.

COMPOSITE FAMILY (Asteraceae; sample: 2 seeds)

These seeds could only be identified to the composite family, which includes a wide variety of flowering plants. Both the seeds and greens of these plants may have been eaten and many also have medicinal uses.

GRASS FAMILY (Poaceae; sample: 58 seeds).

It is common in paleoethnobotanical analyses for some seeds to be identified only as belonging to the grass family. Isolated seeds that are categorized this way are likely incidental inclusions in the archaeological deposit, but conspicuous concentrations of similar seeds at particular sites or at particular periods have also been identified, such as Poaceae Type X (Smith 1996:62-65). Scarry (2003:70) suggests that in addition to food uses, these unidentified seed groups may represent grasses used for thatch.

Plant Use at Feltus

Looking at standardized counts, acorn is the most abundant plant resource at Feltus (3.63 count/g). It is closely followed by hickory (3.16 count/g). Combined, these resources make up 56% of the identifiable plant assemblage from the site. Three additional resources—chenopod, maygrass, and purslane—make up an additional 22% and every other individual taxon accounts for 3% or less. Thus, Feltus subsistence relied heavily on nuts and certain starchy seeds. Oily seeds may also have been heavily used, but preservation factors prevent them from appearing in flotation samples. The high incidence of purslane likely indicates a reliance on greens as well as fruit for essential vitamins and minerals. Finally, a variety of

other preserved plant remains indicate additional resources that were either used as food or used in medicinal or ritual contexts.

That said, some important differences exist among contexts at Feltus. First and foremost, the Mound B assemblage stands out as significantly different from the midden contexts from Mound A and the Mound D area. The Mound B samples contained few plant remains and were dominated by chenopod. These seeds came from two samples taken from a burnt hearth and a possible burnt mound floor. They likely indicate unusual contexts such as a pot spilling or boiling over or seeds being stored en masse. Due to fundamental differences in both the archaeological context and the plant assemblage, Mound B is not easily compared to the Mound A or Mound D area refuse deposits and is thus excluded from the analyses undertaken in the remainder of this section.

Comparisons among the remaining four contexts are fruitful. Overall, the Mound A middens are more diverse than the Mound D area deposits. A1.S0, in particular, shows the highest diversity while the D2 midden shows the lowest (Figure 5.2). In general, the diversity of A1.S0 supports the interpretation that it differs from the other midden deposits on the site. Given that A1.S0 was laid down more gradually and potentially in association with the use of numerous small structures, we can posit that this depositional process may have increased its plant diversity (perhaps through the presence of plant materials from all seasons or the inclusion of more incidental seeds). The lack of diversity in the other three contexts may thus reflect rapidly deposited materials resulting from one or two concentrated episodes of activity.

A correspondence analysis reveals further differences and helps to explain the results of the diversity analysis (Figure 5.3). A1.S0 is most strongly associated with the suite of

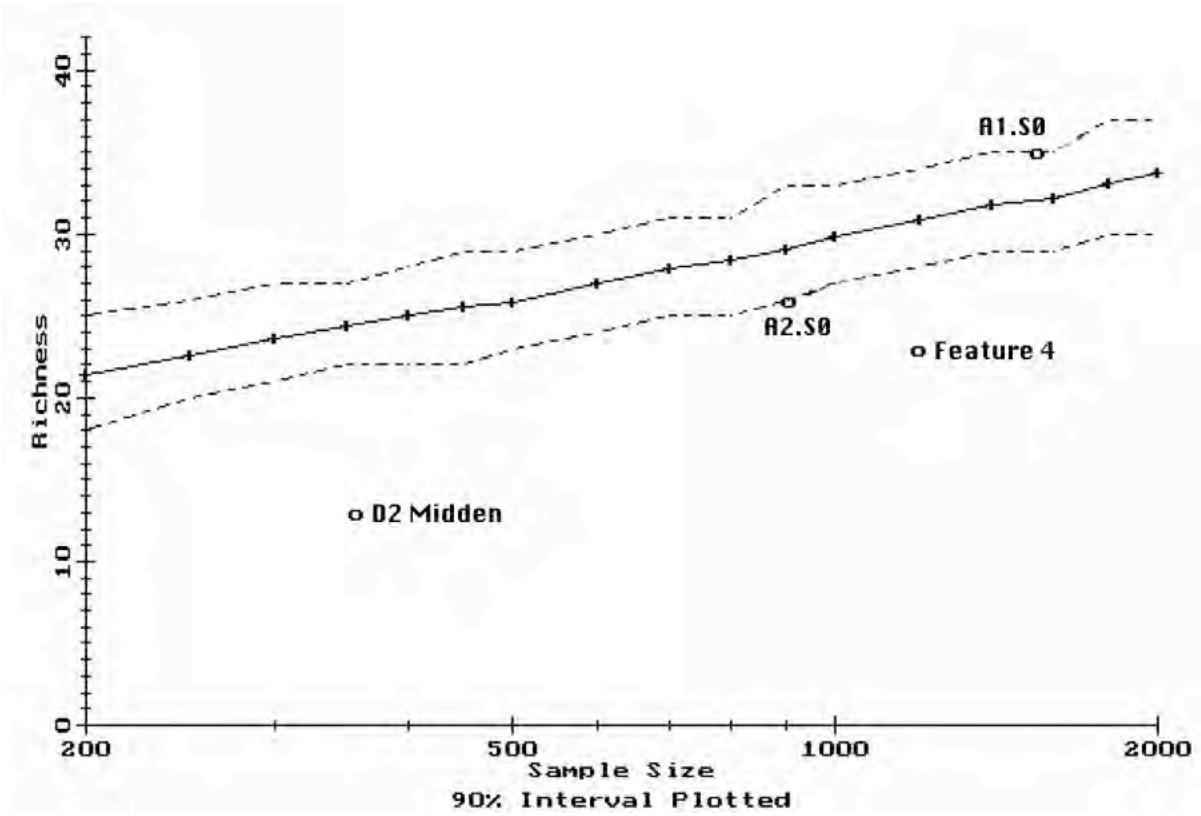

Figure 5.2. Diversity plot of the four Feltus midden contexts showing that A1.S0 has a higher than expected diversity, while A2.S0, Feature 4, and the D2 midden all show lower than expected diversity.

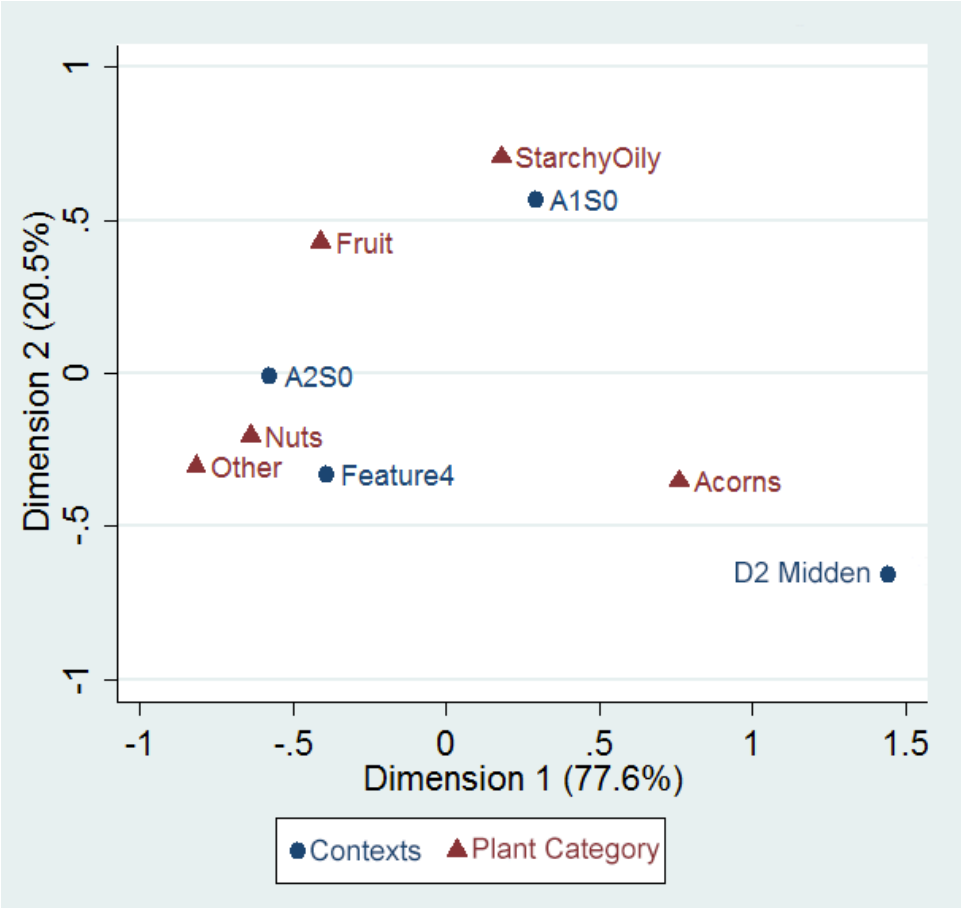

Figure 5.3. Correspondence analysis of the four Feltus midden contexts showing that A1.S0 is associated with starchy and oily seeds and, to some degree, fruit, the D2 midden is associated with acorns, and A2.S0 and Feature 4 plot close together associated with oily nuts and other seeds.

starchy and oily seeds present at the site. These seeds contribute to its high diversity value, as does the presence of some fruits. On the other hand, the D2 midden is strongly associated with acorns and plots the farthest away from the center of the graph, illustrating its low diversity score. A2.S0 and Feature 4 plot relatively close together and are most strongly associated with oily nuts and other seeds. A2.S0 is also somewhat associated with fruit. These two contexts also have similar diversity scores.

Comparisons with Other Sites

Williams (2008) compares the Feltus botanical assemblage to contemporary assemblages from three sites in the Tensas Basin—Hedgeland, Shackleford Lake, and Lisa's Ridge.[6] Shackleford Lake and Lisa's Ridge are Sundown phase (AD 750 to 850) sites and the Hedgeland data used here also date to that period. Roberts (2006) analyzed the data from these sites using methods equivalent to those applied at Feltus, and Williams (2008) standardized Roberts's counts. Raw data for all four sites are presented in Appendix 2 (Table A2.7); standardized counts are presented by taxa in Table 5.3 and by plant category in Table 5.4. Feltus differs from the other sites in having a distinctive nut assemblage, varying frequencies of starchy and oily seeds, somewhat less fruit, and a high prevalence of other seeds. These differences are clearly visible in a correspondence analysis comparing the four sites (Figure 5.4).

There are major differences among the nut assemblages. Hedgeland, Shackleford Lake, and Lisa's Ridge all have higher standardized counts of acorn and pecan than Feltus.

[6] As mentioned above, the data from Feltus Mound B are not included in these interregional comparisons because of important differences in context, assemblage make up, and in this case, temporal association. If the Mound B data were included, Feltus would have a higher occurrence of starchy seeds.

Table 5.3. Standardized counts by plant taxa for Feltus, Hedgeland, Lisa's Ridge, and Shackleford Lake.

	Plant Taxa	**Feltus**	**Hedgeland**	**Lisa's Ridge**	**Shackleford Lake**
Nuts	Acorn Shell	3.63	4.89	5.55	16.16
	Acorn Meat	0.03	0.05	0.05	-
	Hickory	3.16	-	-	-
	Pecan	0.33	1.08	0.66	5.02
	Walnut	0.12	-	-	-
Starchy and Oily Seeds	Amaranth	0.34	0.01	-	0.32
	Barnyard Grass	-	1.67	-	-
	Chenopod	1.10	2.94	0.01	0.06
	Cheno-am	0.27	-	0.11	2.12
	Knotweed	0.24	0.03	0.01	0.04
	Little Barley	0.02	-	-	-
	Maygrass	0.85	0.36	-	1.66
	Smartweed	0.27	-	-	-
	Squash Rind	0.22	0.02	0.01	0.12
	Squash Seed	0.01	-	-	-
	Sumpweed	0.06	-	0.09	0.08
	Sunflower	0.01	0.05	-	-
Fruits	Bramble	0.03	0.01	-	0.22
	Cabbage Palm	0.22	0.19	0.17	1.66
	Grape	0.15	0.16	-	0.04
	Maypop	0.01	-	-	-
	Persimmon	0.14	1.66	2.71	2.33
	Sumac	0.02	-	-	-
Other	Bean Family	-	-	-	0.24
	Bedstraw	0.05	-	0.03	0.20
	Morning-glory	0.01	-	-	-
	Nightshade	0.01	-	-	0.04
	Pokeweed	0.05	0.03	-	-
	Purslane	0.36	0.02	-	0.63
	Verbena	-	-	-	0.04
	Vetch or Wild Pea	0.04	-	-	-

Table 5.4. Standardized counts by plant category for Feltus, Hedgeland, Lisa's Ridge, and Shackleford Lake.

Plant Category	Feltus	Hedgeland	Lisa's Ridge	Shackleford Lake
Acorn	3.66	4.94	5.59	16.16
Other Nuts	3.61	1.08	0.66	5.02
Starchy and Oily Seeds	3.39	5.07	0.23	4.39
Fruits	0.57	2.02	2.89	4.25
Other seeds	0.52	0.05	0.03	1.15

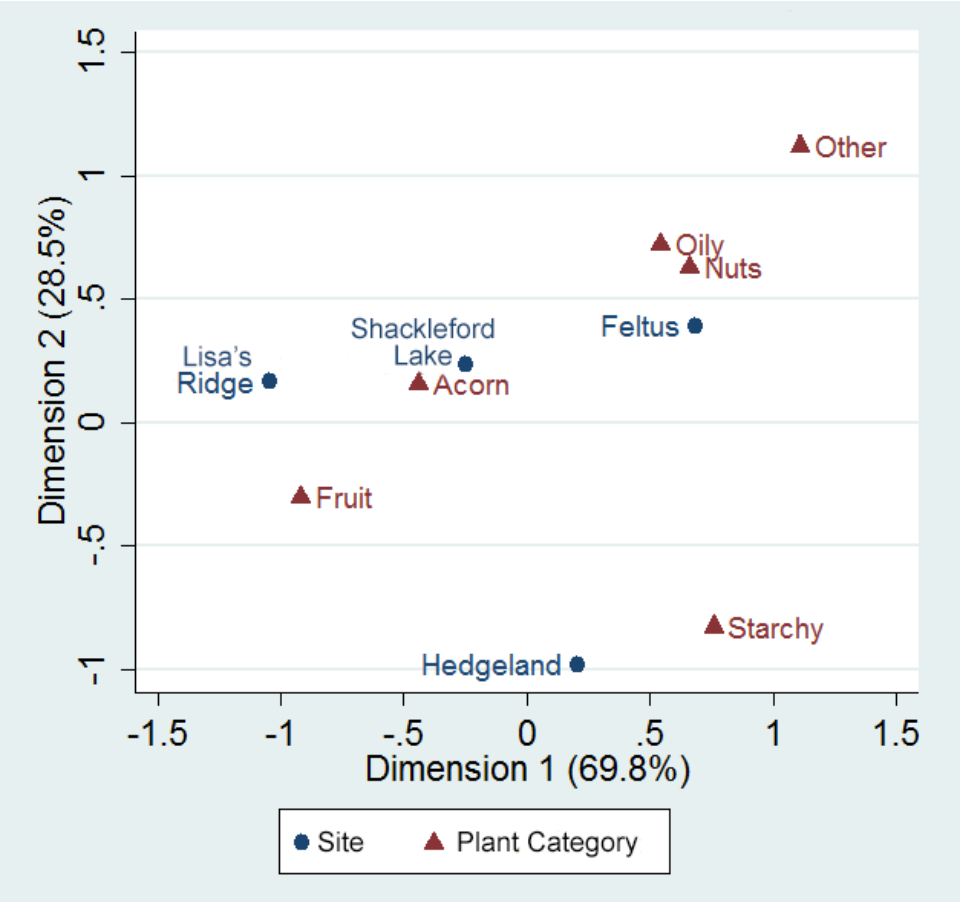

Figure 5.4. Correspondence analysis comparing the Feltus floral assemblage with those from Hedgeland, Lisa's Ridge, and Shackleford Lake, showing Feltus's association with oily nuts and seeds and other seeds.

On the other hand, Feltus contains thick-shell hickory[7] and walnut, which are not present in the other assemblages. Environmental differences likely explain this disparity, as hickory and walnut trees may have been more prevalent in upland environments. However, preference and differences in site function may also have played a significant part. Acorns play a different role in prehistoric subsistence systems than other nuts, providing carbohydrates and protein and fat respectively. Either Feltus occupants were relying heavily on plants to obtain protein and fat, while the people at the other sites were relying more on animal or as-yet unidentified sources, or Feltus people were focused on amassing fat-rich food for the feasts.[8]

Differences in the starchy and oily seeds at these sites are less dramatic. Rather than relying on different resources, the occupants of all four sites relied on the same suite of seed-bearing plants to varying degrees. The starchy and oily seed assemblage from Feltus is most similar to that from Shackleford Lake, another four-mound site. Feltus stands out, however, due to the presence of all members of the Eastern Agricultural Complex (chenopod, knotweed, little barley, maygrass, squash, sumpweed, and sunflower). This, combined with strong evidence for the cultivation of domesticated chenopod, may suggest that Feltus was an early location of cultivation in the LMV.

The Feltus assemblage contains relatively low amounts of fruit; only cabbage palm, grape, and persimmon have standardized counts above 0.1. This is likely because they are the fruits with seeds that are the least likely to be ingested. They are also three of the most easily storable fruits and all have both food and medicinal or ritual uses. On the other hand, remains

[7] Differences in sorting methods between sites need to be mentioned. At Feltus, I sorted hickory from the 2 mm and 1.4 mm fractions, whereas Roberts (2006) only sorted the 2 mm fraction. While this difference may have contributed to the lack of hickory in the comparative site assemblages, much of the Feltus hickory came from the 2 mm fraction. Moreover, as all nuts were sorted in the same way, this methodological difference should increase counts of pecan and thick-shell hickory equally at Feltus, which does not appear to be the case.

[8] This is further supported by a higher prevalence of oily seeds in the standardized counts from Feltus (n = 30) than those from the comparative sites (n = 7, 10, and 20).

from the other seed category are generally well represented at Feltus. Shackleford Lake is the only other site with significant numbers of these seeds. Again, many of these seeds have medicinal and ritual uses, so their appearance at the two mound centers is suggestive.

As determined in the previous section of this chapter, there are important differences among contexts at Feltus. The correspondence analysis was thus re-run with the Feltus contexts separated (Figure 5.5). This biplot shows that A1.S0 and the D2 midden are more similar to the assemblages from Hedgeland, Shackleford Lake, and Lisa's Ridge than A2.S0 and Feature 4, which are quite similar to each other. Given what we know about the activities taking place at Feltus, it is likely that A2.S0 and Feature 4 represent similar types of nondomestic activity. The ceramic and excavation data suggest that the D2 midden also resulted such nondomestic activities, but the correspondence analysis in Figure 5.5 suggests that its plant assemblage is much more similar to the other Coles Creek sites and A1.S0.

Animal Remains

Coles Creek people also relied heavily on a broad suite of animal resources. Current understandings of Coles Creek faunal exploitation emphasize the importance of deer, but also include fish, small mammals, and aquatic turtles. The data available on the scheduling of Coles Creek animal procurement suggest that deer were hunted year-round (with greater emphasis in the fall) and fish and turtles were obtained primarily during the late spring and summer (Kelley 1990:3). These data come from relatively few excavated sites, all west of the Mississippi River. Thus, the data from Feltus have the potential to significantly augment our understanding of Coles Creek faunal exploitation. Also, it has the potential to suggest what animals may have had ritual significance to Coles Creek people.

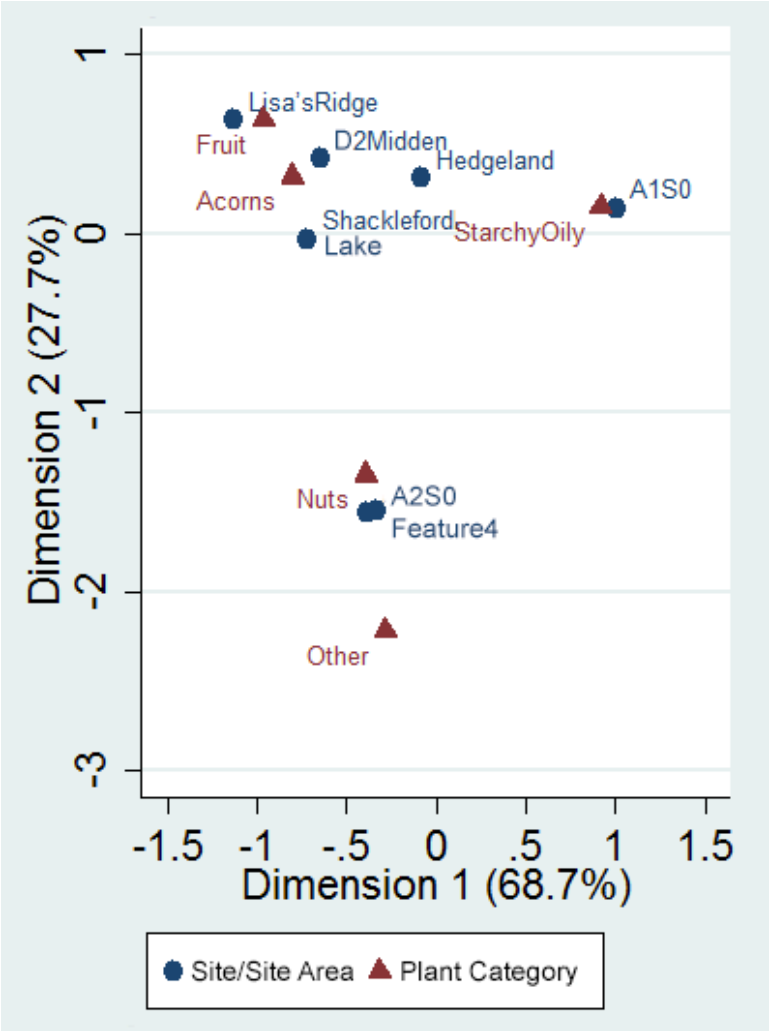

Figure 5.5. Correspondence analysis comparing the Feltus floral assemblage, divided by context, with those from Hedgeland, Lisa's Ridge, and Shackleford Lake, showing A2.S0 and Feature 4 as significantly different from other Coles Creek contexts.

Methods and Sample

Faunal analysis from Feltus is ongoing. For the purposes of this chapter, Dr. H. Edwin Jackson and Lynn Funkhouser have analyzed faunal materials from five contexts using the University of Southern Mississippi's comparative collection. Contexts analyzed by Funkhouser (2013) include Feature 1 in D1 and the midden over Feature 4 in D2. Jackson (personal communication 2012) provided data on three additional contexts—Feature 4, the premound midden in A1, and the midden in A2. Faunal elements were identified to the level of genus and species whenever possible, but sizable family and class categories are also included. (For A1.S0, data are currently only reported at the category level.)

Primary data was recorded as taxon and elements represented, specimen count, cultural and natural modification, age and sex, and specimen weight (Funkhouser 2013:1). In this chapter, specimen count is presented as number of identified specimens (NISP). Though common, this method of reporting has a number of drawbacks that must be mentioned. First, it over-represents taxa with greater numbers of identifiable bones. Second, "it is strongly affected by cultural practices, such as butchering patterns, that result in differential fragmentation among taxa and the absence of certain elements (i.e., initial butchering waste) from some sites" (Kelley 1990:109). And third, it does not account for variability in the amount of meat provided by the various taxa. That said, when combined with data on bone weight, NISP provides useful data on the frequency of faunal remains and their relative contributions to diet.

Minimum numbers of individuals, or MNI, is used to avoid the drawbacks of NISP and bone weight data. MNI is "a conservative measure of the smallest number of individuals necessary to account for all of the species elements recovered … MNI is derived from

repetition in symmetry among elements and differences in age and size among repeated elements" (Funkhouser 2013:1). MNI data were recorded for Feature 1 and the D2 midden, but not for Feature 4 or the Mound A middens and thus cannot be consistently relied upon here. MNI's disadvantages include the assumption that the site's population used the same parts of the same animals consistently, its over-sensitivity to sample size, and its tendency to emphasize rare taxa over common ones (Kelley 1990:109).

Overall, the identified faunal assemblage from Feltus contains mammals, birds, reptiles, amphibians, and fish (Table 5.5).[9] Large mammals and fish dominate the assemblage. Bird, reptile, and amphibian remains are rare at Feltus and dominated by a few species.

Mammals

Twelve mammal taxa were identified in the Feltus collection. Along with fish, they dominate the assemblage. For comparative purposes, mammals are classified by size. Large mammals (bear and deer) are by far the most common category. Medium-sized mammals are very rare, though some unidentified specimens may fall into this range. Small mammals are somewhat common, but do not approach the numbers (let alone the biomass) provided by large mammals.[10] Low incidence of breakage in the Feltus faunal collections suggests that mammals were used primarily for their meat; however, it is likely that their pelts were also utilized.

[9] Additional species are likely included but captured only in the unidentified counts. In some cases further study may identify additional taxa, but generally the bone is too fragmentary or poorly preserved. Jackson's (personal communication, 12 October 2012) data suggests that at least some additional species were confidently identified in A1.S0, though they are not listed.

[10] Scavengers and other commensal species are more or less absent from the Feltus collections, again indicating that storage was likely not occurring on site.

Table 5.5. Animals identified from Feltus.

	Common Name	Scientific Name
Mammal	Beaver	*Castor canadensis*
	Black bear	*Ursus americanus*
	Canid	*Canis* sp.
	Cottontail rabbit	*Sylvilagus floridanus*
	Fox squirrel	*Sciurus niger*
	Gray squirrel	*Sciurus carolinensis*
	Mole	*Scalopus aquaticus*
	Opossum	*Didelphis virginianus*
	Rabbit	*Sylvilagus* sp.
	Raccoon	*Procyon lotor*
	Squirrel	*Sciurus* sp.
	Striped skunk	*Mephitis mephitis*
	Swamp rabbit	*Sylvilagus aquaticus*
	Vole	*Microtus pinetorum*
	Whitetail deer	*Odocoileus virginianus*
Bird	Rail, Gallinule, or Coot	Rallidae
	Turkey	*Meleagris gallopava*
Reptile	Box turtle	*Terrapene* sp.
	Box or water turtle	Emydidae
	Common snapping turtle	*Chelydra serpentina*
	Cooter, slider, or map turtle	Aquatic Emydid
	King, rat, or corn snake	*Elaphe* or *Lampropeltis* sp.
	Mud or musk turtle	Kinosternidae
	Non-poisonous snake	Colubridae
	Snake	Serpentes
	Snapping turtle	Chelydridae
	Turtle	Testudines
	Viper	Viperidae
	Water snake	*Nerodia* sp.
Amphib.	Bullfrog	*Rana catesbeiana*
	Frog or toad	*Rana* or *Bufo* sp.
	Hellbender	*Cryptobranchus alleganiensis*

Table 5.5. Continued.

	Common Name	Scientific Name
Fish	Alligator gar	*Atractosteus spatula*
	Bass	*Micropterus* sp.
	Black bullhead	*Ictalurus melas*
	Black crappie	*P. nigromaculatus*
	Blue cat	*Ictalurus furcatus*
	Bowfin	*Amia calva*
	Brown bullhead	*Ictalurus nebulosus*
	Bullhead	*Ictalurus melas, natalis,* or *nebulosus*
	Buffalo	*Ictiobus* sp.
	Catfish	*Ictalurus* sp. or *Ameiurus* sp.
	Catfish or bullhead	Ictaluridae
	Channel cat	*Ictalurus Punctatus*
	Channel or blue cat	*Ictalurus* p/f
	Crappie	*Pomoxix* sp.
	Flathead cat	*Pylodictis olivaris*
	Freshwater drum	*Aplodinotis grunniens*
	Gar	Lepisosteidae
	Largemouth bass	*Micropterus salmoides*
	Largemouth buffalo	*Ictiobus cyprinellus*
	Longnosed gar	*Lepisosteus osseus*
	Perciformes	Osteichthyes
	Redear sunfish	*Lepomis microlophus*
	Smallmouth buffalo	*Ictalurus bubalus*
	Striped bass	*Morone saxatilis*
	Sturgeon	*Scaphirhynchos* sp.
	Sturgeon	Acipenseridae
	Sucker	Catastomidae
	Sunfish	*Lepomis* sp.
	Sunfish	Centrarchidae
	White crappie	*Pomoxix annularis*
	Yellow bullhead	*Ictalurus natalis*

BLACK BEAR (*Ursus americanus*; sample: 74)

Weighing between 100 and 227 kg, bears would have been the largest animals available to Coles Creek people. They decrease their activity significantly during the winter, perhaps providing less dangerous hunting opportunities (Kelley 1990:26-28). Because bears are solitary creatures, they have low population densities even in the most favorable habitats, 1 per 5.2 km^2 (Smith 1975). Compared to other LMV sties, bear bone is exceptionally common at Feltus. As will be discussed in more detail later in Chapter 6, it is likely that bear was both a food source and a ritually important animal for Feltus people. Pelts, claws, and others portions of the bear may have had special uses.

WHITETAIL DEER (*Odocoileus virginianus*; sample: 603)

Deer was the other large mammal available to Coles Creek people, weighing between 40 and 136 kg. Young deer provide a method of identifying seasonal deposits because most births occur in May and June. At Feltus, the remains of two fawns in the D2 midden suggest that this deposit took place in late spring or early summer. Estimates of the prehistoric deer population density vary significantly from 3 per km^2 to 19.5 per km^2 (Kelley 1990:28-31; Smith 1975). As expected, deer provided most of the meat in the Feltus diet. While their pelts were also likely used by the Feltus people, analysis of the bone breakage patterns suggest that their bones were not being broken for marrow or turned into bone tools (Funkhouser 2013:3).

BEAVER (*Castor canadensis*; sample: 4)

Beavers are restricted to aquatic habitats and typically range in weight from 11 to 35 kg. Though rare, these elements represent one of the few medium-sized mammals in the

Feltus assemblage. Smith (1975:83-84) tentatively suggests a prehistoric population density of 20 per km^2. In addition to providing a food source, beavers may have been hunted for their pelts and incisors (Swanton 1946:250).

CANID (*Canis* sp.; sample: 1)

Only one element of this genus was found at Feltus, which may have come from a dog, wolf, or coyote. Without further identification, it is impossible to suggest weights or population densities for this medium-sized mammal.

MOLE OR VOLE (*Scalopus aquaticus* or *Microtus pinetorum*; sample: 3)

These two small mammals are very rare in the Feltus assemblage. Both are likely to have been either incidental inclusions or recent intrusions into the midden deposits (Kelley 1990:147).

OPOSSUM (*Didelphis virginianus*; sample: 16)

Opossums would have been abundant in the LMV (24.2 per km^2) and range in weight from 3 to 6 kg (Kelley 1990:36; Smith 1975:87). They are also considered a small mammal in this analysis and are less common than raccoons. Though both their meat and pelts may have been used, some Native groups had taboos against consuming opossum meat (Swanton 1946:250).

RABBITS (*Sylvilagus* spp.; sample: 170)

There were two species of rabbits available in the LMV prehistorically—cottontail

rabbits (0.6 – 1.6 kg) and swamp rabbits (1.2 – 2.9 kg). Population densities would have fluctuated significantly from year to year (ranging from 13.7 to 166.7, with an average around 55.6 per km^2) (Kelley 1990:36-37; Smith 1975:94-96). These small mammals were likely an important food source for the populations at Feltus, especially the larger swamp rabbit species (NISP = 136). They may also have been hunted for their pelts.

RACCOON (*Procyon lotor*; sample: 30)

Raccoons would have been abundant in the LMV (15.6 per km^2) and range in weight 4 to 14 kg (Kelley 1990:35; Smith 1975:44). In this analysis, they are considered a small mammal. Compared to other small mammals, they are relatively infrequent but still could have been eaten by people at Feltus. They may also have been hunted for their pelts.

SQUIRRELS (*Sciurus* spp.; sample: 121)

Like rabbits, there were two species of these small mammals living in the prehistoric LMV—fox squirrels (0.4 –1.0 kg) and gray squirrels (0.3 –0.7 kg) (Kelley 1990:38-39). At Feltus, gray squirrels, which prefer woodland environments, outnumber fox squirrels, which prefer open field environments (Jackson and Scott 2003:565). Additional specimens were identified only as squirrel family. Smith (1975:112) calculates prehistoric population densities as 125 per km^2 for both species but suggests there may have been significant variation. It is likely that squirrels were regularly exploited as a food source at Feltus and may also have been hunted for their pelts.

STRIPED SKUNK (*Mephitis mephitis*; sample: 1)

Though skunks, which weigh 2.7 – 3.6 kg, are often discounted as a food source, Lawson (1709:109) notes that many Native groups both consumed their meat and used their pelts.

Birds

Identifiable birds are rare in the Feltus assemblage and include only turkey and one member of the Rallidae family. Even when unidentifiable fragments of bird bone are included, they make up only 2.3% of the Feltus faunal assemblage. The lack of both migratory waterfowl and large wading birds is notable.

TURKEY (*Meleagris gallopava*; sample: 41)

Turkey is the only confidently identified bird in the Feltus assemblage and would have been the largest avian resource available in the prehistoric LMV, with adult males averaging 9.4 kg (Kelley 1990:47). Moreover, turkeys roam in flocks, making them relatively easy to hunt en masse during the winter and early spring. During this high season, population densities would have approached 10 per km^2 , and around 4 per km^2 during the rest of the year (Kelley 1990:47-48; Smith 1975:80). It is likely that turkeys were a regular part of the Feltus diet. They may also have been hunted for their feathers.

Reptiles and Amphibians

Reptiles are rare in the Feltus assemblage and primarily represent turtle species, with a few snakes. Amphibians are exceedingly rare and likely represent incidental inclusions.

Though many more species of reptile and amphibians would have been available, their small size would have limited their utility as food sources.

TURTLES (Testudines; sample: 368)

Four mutually exclusive turtle taxa were identified in the Feltus assemblage—box turtles (*Terrapene* sp.), cooter/slider/map turtles (Aquatic Emydid), mud and musk turtles (Kinosternidae), and snapping turtles (*Chelydra serpentina*). There are also large numbers of unidentified turtle elements. While most would have been appropriate food sources, mud and musk turtles are so small that they would have been of little importance to subsistence and may represent animals caught in the process of fishing (Kelley 1990:53). Given their overall abundance at Feltus, it is likely that turtles were a significant food source. Their shells were also likely used.

SNAKES (Serpentes; sample: 76)

Three mutually exclusive snake taxa were identified in the Feltus assemblage—vipers (Viperidae), king/rat/corn snakes (*Elaphe* or *Lampropeltis* sp.), and water snakes (*Nerodia* sp.), but the majority of snake remains are unidentified. It is unlikely that these species regularly provided food for the people at Feltus (Kelley 1990:168).

FROGS OR TOADS (*Rana* or *Bufo* spp.; sample: 4)

Only one species of frog was confidently identified at Feltus, bullfrog (*Rana catesbeiana*). Though bullfrogs were likely used for food by other Coles Creek groups

(Kelley 1990:156), their small numbers here imply that they were incidental inclusions at Feltus.

HELLBENDER (*Cryptobranchus alleganiensis*; sample: 1)

Hellbenders are giant salamanders (often over 2 ft in length). The single specimen from Feltus may have been intentionally caught for food, or may have been caught during fishing.

Fish

Second to large mammals, fish dominate the Feltus assemblage. People at Feltus could have amassed fish from three distinct sources: oxbow lakes (and associated backwater environments), the primary Mississippi River channel, and the streams and creeks that run into it (Kelley 1990:40). Most of the Feltus fish were probably caught in oxbow lakes or other backwater riverine environments near the site, though people were also likely fishing in the primary river channel.

BASS (*Micropterus* spp.; sample: 38)

Largemouth bass (*Micropterus salmoides*) were identified in the Feltus assemblage, along with additional unidentifiable bass elements. These fish most commonly lived in backwater environments and oxbows and may have regularly contributed to the Feltus diet.

BOWFIN (*Amia calva*; sample: 295)

Bowfin are the third most represented fish in the Feltus assemblage. They are most often caught it oxbow lakes and backwater environments but may also have been captured in nearby creeks and streams (Kelley 1990:40). Though the number of bowfin may be slightly exaggerated because their bones are easy to identify, they were undoubtedly an important food source (Kelley 1990:167).

BUFFALOES (*Ictiobus* spp.; sample: 39)

Two species of buffalo—largemouth (*Ictiobus cyprinellus*) and smallmouth (*Ictiobus bubalus*)—are found in the Feltus assemblage. A small number of additional specimens could not be identified to the species level. Largemouth are much more common and they may have played an important role in the Feltus subsistence system. Buffalo would be most commonly available in the main river channel but may also be found in oxbow lakes and other backwater environments where they go to spawn (Kelley 1990:43-44).

CATFISH OR BULLHEADS (Ictaluridae; sample: 459)

Catfish and bullhead were a major food source for Feltus people. Three species of catfish—blue (*Ictalurus furcatus*), channel (*Ictalurus punctatus*), and flathead (*Pylodictis olivaris*)—have been confidently identified in the Feltus assemblage along with three species of bullhead—black (*Ictalurus melas*), brown (*Ictalurus nebulosus*), and yellow (*Ictalurus natalis*). Many additional elements are identified to Ictaluridae more broadly, making it the most common fish family exploited at Feltus.[11] Catfish prefer to live in river channels but can be caught in oxbows and backwater environments, especially during and after the flood

[11] This could be partially due to the fact that they preserve well and are easily identifiable.

season. Bullhead are more likely to be found in oxbows year-round but may also enter the river channel (Kelley 1990:40).

CRAPPIE (*Pomoxix* sp.; sample: 12)

Crappies are infrequent in the Feltus assemblage. Like many other fish at Feltus, they primarily live in oxbow lakes (Kelley 1990:40) and thus were likely caught in the process of catching gar and other staple resources, but were not sought out.

FRESHWATER DRUM (*Aplodinotis grunniens*; sample: 36)

Drum is somewhat common in the Feltus assemblage and may have contributed to the regular diet. They live in both backwater and river channel environments and could be caught in both with consistency (Kelley 1990:40).

GARS (Lepisosteidae; sample: 431)

Two species of gar—alligator (*Atractosteus spatula*) and longnosed (*Lepisosteus osseus*)—have been identified at Feltus. Alligator gar is particularly abundant. The assemblage also contains a very large number of elements identified only to Lepisosteidae. Combined, gar is the second most represented family in the assemblage and undoubtedly served as an important food source. Gar scales are not included in this NISP because they would unnecessarily bias the data towards gar. However, they were counted separately; 2179 gar scales were identified in the analyzed contexts. Gar prefer to live in oxbows and other backwater riverine environments but can be caught in the river channels (Kelley 1990:40). The importance of gar may be somewhat exaggerated because, like bowfin, their bones are

easy to identify and their bones are denser (and thus better preserved) than most other fish (Kelley 1990:167).

STRIPED BASS (*Morone saxatilis*; sample: 2)

Striped bass are rare at Feltus. Though they can live in both salt and freshwater, it is most common to find them in fresh water during the spawning season. At this time, they lay their eggs in moving water and thus as most likely to be caught in the main river channel.

STURGEONS (Acipenseridae; sample: 10)

Only one genus of sturgeon was identified, *Scaphirhynchos*. Given its rarity, it is unlikely that this fish family played a regular role in Feltus subsistence. These fish occur almost exclusively in the river channel (Kelley 1990:40-42) and their scarcity may be a good indicator of the Feltus population's focus on fishing the oxbow lakes.

SUCKERS (Catastomidae; sample: 170)

This family comprises the fourth most abundant fish resource utilized by the Feltus people and were undoubtedly an important food source. Like catfish, these fish are most abundant in the main river channels, but may also be caught in oxbow lakes, especially during and after the flood season (Kelley 1990:43-44).

SUNFISHES (*Lepomis* sp.; sample: 72)

Sunfish are less frequent in the Feltus assemblage but still may have regularly contributed to the diet. Only one species could be confidently identified, the redear sunfish

(*Lepomis microlophus*). They are very abundant in oxbow lakes and were undoubtedly caught in the process of catching gar and other staple resources (Kelley 1990:44). The lower number of sunfish at Fetus could suggest that nets are not the primary capture method or indicate a distinct preference on the part of Feltus people.

Animal Use at Feltus

Looking at NISP and bone weight, the Feltus assemblage is dominated by large mammals (NISP = 24%, weight = 66%) and fish (NISP = 36%, weight = 10%). Within the large mammal category, whitetailed deer are most prevalent, but bear also occur in higher than expected frequencies. Among the fish, the gar and catfish families dominate, followed by bowfin and sucker, but a wide variety of other fish were also eaten. Turkey, turtle and assorted small mammals such as rabbit and squirrel were also important subsistence resources for the Feltus population.

As with the plants, differences in animal abundance exist among contexts. One particular context, Feature 1, will be treated separately, as the midden contexts that were analyzed are directly relatable to the contexts discussed in the paleoethnobotanical analysis detailed above and may be more readily compared. Correspondence and diversity analyses provide more effective comparisons among the three comprehensively analyzed midden deposits—D2.Midden, Feature 4, and A2.S0[12].

As discussed in Chapter 2, Feature 1 is one of a series of large post pits in the Mound D area. Bear remains from this feature were identified in the field and thus it was selected as high priority for faunal analysis. Though the faunal assemblage is small (NISP = 94), it is

[12] Very little information is available about A1.S0, though Jackson (personal communication 2012) has provided animal category data for comparative purposes. It is thus included in Table 5.5 but not in Figures 5.7 or 5.8.

impressive given the size of the feature and allowed for the identification of five mammal, two bird, and five fish taxa (Table 5.6; Appendix 2, Table A2.8 for element data). The bear femur was burned and very petite and the bear metacarpal shows a possible healed fracture (Funkhouser 2013:2). Feature 1 also contained the remains of four or five children (Table 5.7). "MNI is based on repetition of a sulcus in the occipital … There are no indications of trauma, disease, or arrested development [on any of the remains]" (Funkhouser 2013:2).

The midden overlaying the complex of features in D2 provided a more sizable faunal sample (NISP = 2,962) and allowed for the identification of ten mammal, one bird, five reptile, and ten fish taxa (Table 5.8; see also Appendix 2, Table A2.9 for the element data). Deer, bear, gar, catfish, and sucker dominate the assemblage, leading to relatively low diversity (Figure 5.6). Size estimates for identifiable elements suggest that the fish in this deposit are large for their species. Jackson (personal communication 2012) has estimated that some gar individuals were over 2 m long. Likewise, the NISP (and resulting MNI) for large mammals (i.e., bear and deer) is high while the same measures for medium and small mammals are low; there are also a high percentage of unidentified mammal remains.

More detailed analyses revealed additional patterns. First, utility indices show that deer resources were used in a particular way, with the majority of the effort going into meat extraction and very little into marrow or grease extraction or bone-tool production (Table 5.9; Funkhouser 2013:3). Second, element representation for deer was determined by a ratio of skeletal portions using NISP. Overrepresented portions include axial, forequarter, and hindquarter elements, while the skull and feet are underrepresented (Table 5.10; Funkhouser 2013:3). Element representation was also considered for bear. Seven of the ten bear elements are from hands or feet.

Table 5.6. The faunal assemblage from Feature 1 (NISP = 94 including five mammal, two bird, and five fish taxa).

Taxon	**NISP**	**%**	**Weight (g)**	**%**	**Heat Altered**	**%**	**Immature**	**%**	**MNI**	**%**
Bear (*Ursus americanus*)	2	2.13	158.40	81.07	1	0.01	0	0.00	1	6.25
Gray squirrel (*Sciurus carolinensis*)	2	2.13	0.47	0.24	2	3.85	0	0.00	1	6.25
Opossum (*Didelphis virginianus*)	1	1.06	1.46	0.75	0	0.00	1	50.00	1	6.25
Swamp rabbit (*Sylvilagus aquaticus*)	1	1.06	0.20	0.10	0	0.00	0	0.00	1	6.25
Whitetail deer (*Odocoileus virginiana*)	2	2.13	15.46	7.91	0	0.00	0	0.00	1	6.25
Unidentified large mammal	1	1.06	0.59	0.30	0	0.00	0	0.00	0	0.00
Unidentified medium mammal	3	3.19	0.75	0.38	2	3.85	1	50.00	0	0.00
Unidentified medium/small mammal	3	3.19	0.46	0.24	2	3.85	0	0.00	0	0.00
Unidentified mammal	17	18.09	7.10	3.63	7	13.46	0	0.00	0	0.00
Subtotal Mammal	**32**	**34.04**	**184.89**	**94.63**	**14**	**26.92**	**2**	**100.00**	**5**	**31.25**
Turkey (*Meleagris gallopava*)	1	1.06	0.44	0.23	0	0.00	0	0.00	1	6.25
Rails, Gallinules, and Coots (Raillidae)	1	1.06	0.05	0.03	1	1.92	0	0.00	1	6.25
Unidentified bird	1	1.06	0.06	0.03	0	0.00	0	0.00	0	0.00
Subotal Bird	**3**	**3.19**	**0.55**	**0.28**	**1**	**1.92**	**0**	**0.00**	**2**	**12.50**

Table 5.6. Continued.

Taxon	NISP	%	Weight (g)	%	Heat Altered	%	Immature	%	MNI	%
Alligator gar (*Atractosteus spatula*)	1	1.06	0.24	0.12	0	0.00	0	0.00	1	6.25
Blue cat (*Ictalurus furcatus*)	1	1.06	0.40	0.20	0	0.00	0	0.00	1	6.25
Bowfin (*Amia calva*)	3	3.19	0.16	0.08	2	3.85	0	0.00	1	6.25
Largemouth buffalo (*Ictiobus cyprinellus*)	1	1.06	0.15	0.08	1	1.92	0	0.00	1	6.25
Catfish family (Ictaluridae)	3	3.19	0.62	0.32	3	5.77	0	0.00	2	12.50
Gar family (Lepisosteidae)	6	6.38	1.02	0.52	4	7.69	0	0.00	1	6.25
Sucker family (Catastomidae)	2	2.13	0.40	0.20	0	0.00	0	0.00	1	6.25
Sunfish family (Centrarchidae)	1	1.06	0.09	0.05	1	1.92	0	0.00	1	6.25
Unidentified fish	41	43.62	6.86	3.51	26	50.00	0	0.00	0	0.00
Subtotal Fish	**59**	**62.77**	**9.94**	**5.09**	**37**	**71.15**	**0**	**0.00**	**9**	**56.25**
TOTAL	**94**	**100**	**195.38**	**100**	**52**	**100**	**2**	**100**	**16**	**100**
Indeterminate	-		0.77							

Table 5.7. Human remains from Feature 1.

Cat. No.	Element	Age	Notes
348	scapula, left	3-4	3 fragments of same element; glenoid fossa, lateral border, coracoid process
348	calcaneus, left	3-4	2 fragments of same element; articular surface and plantar surface
348	cranial, parietal	-	possibly same individual as Cat. No. 401
350	unidentified	-	unidentified fragment
363	rib fragments	-	3 fragments
372	cranial, parietal (?)	-	2 fragments and 1 complete wormian bone; same individual as Cat. No. 401
401	cranial, occipital*	3-5	3 fragments of same element; occipital sulcus
401	cranial, parietal, left	3-5	2 fragments of same element
401	cranial, parietal, right	3-5	3 fragments of same element; along sagittal suture
401	cranial, parietal, right	3-5	2 fragments of same element; along lambdoid suture
401	cranial, unidentified	3-5	likely parietal; along lambdoid suture
401	cranial, unidentified	-	< 1/4" fragments; likely same individual as above
422	humerus, left	1.5	complete
425	cranial, occipital*	-	5 fragments of varying size; possible occipital sulcus
665	cranial, occipital*	1	pars squama, right pars lateralis, and complete pars basilaris
734	scapula, left	1.5	3/4 complete; missing superior angle and medial border
746	cranial, occipital*	2-3	3 fragments of same element; occipital sulcus
746	cranial, parietal	2-3	-
746	cranial, occipital*	2-3	occipital sulcus
746	cranial, unidentified	-	2 fragments

*Specimens used to establish MNI.

Table 5.8. The faunal assemblage from the midden overlaying the complex of features in D2 (NISP = 2962 including ten mammal, one bird, five reptile, and ten fish taxa).

Taxon	**NISP**	**%**	**Weight (g)**	**%**	**Heat Altered**	**%**	**Modified**	**%**	**Immature**	**%**	**MNI**	**%**
Bear (*Ursus americanus*)	10	0.34	142.34	5.71	0	0.00	1	33.33	3	10.71	2	3.39
Cottontail rabbit (*Sylvilagus floridanus*)	2	0.07	0.42	0.02	0	0.00	0	0.00	0	0.00	1	1.69
Fox squirrel (*Sciurus niger*)	3	0.10	1.14	0.05	0	0.00	0	0.00	0	0.00	1	1.69
Gray squirrel (*Sciurus carolinensis*)	8	0.27	1.45	0.06	3	0.65	0	0.00	0	0.00	3	5.08
Mole (*Scalopus aquaticus*)	1	0.03	0.25	0.01	0	0.00	0	0.00	0	0.00	1	1.69
Opossum (*Didelphis virginianus*)	1	0.03	0.82	0.03	0	0.00	0	0.00	0	0.00	1	1.69
Raccoon (*Procyon lotor*)	1	0.03	0.70	0.03	0	0.00	0	0.00	0	0.00	1	1.69
Swamp rabbit (*Sylvilagus aquaticus*)	9	0.30	4.60	0.18	0	0.00	0	0.00	0	0.00	2	3.39
Vole (*Microtus pinetorum*)	1	0.03	0.04	0.00	1	0.22	0	0.00	0	0.00	1	1.69
Whitetail deer (*Odocoileus virginiana*)	147	4.96	1335.88	53.58	12	2.59	2	66.67	20	71.43	9	15.25
Squirrel family (Sciuridae)	1	0.03	0.08	0.00	0	0.00	0	0.00	0	0.00	1	1.69
Large mammal	550	18.57	376.44	15.10	121	26.08	0	0.00	1	3.57	0	0.00
Large / Medium mammal	33	1.11	33.67	1.35	14	3.02	0	0.00	0	0.00	0	0.00
Medium mammal	34	1.15	16.59	0.67	11	2.37	0	0.00	1	3.57	0	0.00
Medium / Small mammal	52	1.76	10.64	0.43	20	4.31	0	0.00	1	3.57	0	0.00
Small Mammal	5	0.17	0.44	0.02	0	0.00	0	0.00	1	3.57	0	0.00
Mammal	1030	34.77	193.54	7.76	137	29.53	0	0.00	1	3.57	0	0.00
Subtotal Mammal	**1888**	63.74	**2119.04**	84.99	**319**	68.75	**3**	100	**28**	100	**23**	38.98
Turkey (*Meleagris gallopava*)	16	0.54	22.04	0.88	2	0.43	0	0.00	0	0.00	3	5.08
Large bird	4	0.14	1.20	0.05	0	0.00	0	0.00	0	0.00	0	0.00
Bird	52	1.76	9.34	0.37	15	3.23	0	0.00	0	0.00	0	0.00
Subtotal Bird	**72**	2.43	**32.58**	1.31	**17**	3.66	**0**	0.00	**0**	0.00	**3**	5.08

Table 5.8. Continued.

Taxon	**NISP**	**%**	**Weight (g)**	**%**	**Heat Altered**	**%**	**Modified**	**%**	**Immature**	**%**	**MNI**	**%**
Box turtle (*Terrapene* sp.)	6	0.20	2.36	0.09	1	0.22	0	0.00	0	0.00	1	1.69
Cooter/slider/map turtle (Aquatic Emydid)	1	0.03	2.04	0.08	1	0.22	0	0.00	0	0.00	0	0.00
Box/water turtle (Emydidae)	3	0.10	2.00	0.08	0	0.00	0	0.00	0	0.00	0	0.00
Mud/musk turtle (Kinosternidae)	2	0.07	0.43	0.02	1	0.22	0	0.00	0	0.00	1	1.69
Unidentified turtle	45	1.52	7.86	0.32	13	2.80	0	0.00	0	0.00	0	0.00
King/rat/corn snake (*Elaphe/Lampropeltis* sp.)	2	0.07	0.04	0.00	0	0.00	0	0.00	0	0.00	1	1.69
Non-poisonous snake (Colubridae)	18	0.61	1.63	0.07	0	0.00	0	0.00	0	0.00	0	0.00
Viper (Viperidae)	1	0.03	0.04	0.00	0	0.00	0	0.00	0	0.00	1	1.69
Unidentified snake	29	0.98	3.95	0.16	0	0.00	0	0.00	0	0.00	0	0.00
Subtotal Reptile	**107**	3.61	**20.35**	0.82	**16**	3.45	**0**	0.00	**0**	0.00	**4**	6.78
Alligator gar (*Atractosteus spatula*)	5	0.17	17.88	0.72	0	0.00	0	0.00	0	0.00	1	1.69
Blue cat (*Ictalurus furcatus*)	3	0.10	2.23	0.09	0	0.00	0	0.00	0	0.00	3	5.08
Bowfin (*Amia calva*)	7	0.24	1.08	0.04	0	0.00	0	0.00	0	0.00	1	1.69
Freshwater drum (*Aplodinotis grunniens*)	21	0.71	8.33	0.33	2	0.43	0	0.00	0	0.00	4	6.78
Largemouth bass (*Micropterus salmoides*)	1	0.03	0.15	0.01	0	0.00	0	0.00	0	0.00	1	1.69
Largemouth buffalo (*Ictiobus cyprinellus*)	14	0.47	9.00	0.36	2	0.43	0	0.00	0	0.00	2	3.39
Longnosed gar (*Lepisosteus osseus*)	6	0.20	34.60	1.39	0	0.00	0	0.00	0	0.00	2	3.39
Smallmouth buffalo (*Ictalurus bubalus*)	2	0.07	0.56	0.02	0	0.00	0	0.00	0	0.00	1	1.69
Channel/blue Catfish (*Ictalurus p/f*)	1	0.03	2.00	0.08	0	0.00	0	0.00	0	0.00	1	1.69
Buffalo (*Ictiobus* sp)	2	0.07	0.30	0.01	0	0.00	0	0.00	0	0.00	1	1.69
Crappie (*Pomoxix* sp.)	1	0.03	0.17	0.01	0	0.00	0	0.00	0	0.00	1	1.69

Table 5.8. Continued.

Taxon	NISP	%	Weight (g)	%	Heat Altered	%	Modified	%	Immature	%	MNI	%
Catfish family (Ictaluridae)	48	1.62	23.19	0.93	5	1.08	0	0.00	0	0.00	2	3.39
Gar family (Lepisosteidae)	127	4.29	116.04	4.65	43	9.27	0	0.00	0	0.00	3	5.08
Sucker family (Catastomidae)	40	1.35	15.63	0.63	3	0.65	0	0.00	0	0.00	5	8.47
Perciform	29	0.98	3.85	0.15	3	0.65	0	0.00	0	0.00	0	0.00
Unidentified fish	585	19.75	86.18	3.46	40	8.62	0	0.00	0	0.00	0	0.00
Subtotal Fish	**897**	30.28	**321.34**	12.89	**98**	21.12	**0**	0.00	**0**	0.00	**29**	49.15
Total Assemblage	**2962**	100	**2493.24**	100	**464**	100	**3**	100	**28**	100	**59**	100
Gars scales (Lepisosteidae)	264		53.32									
Indeterminate	-		5.73									

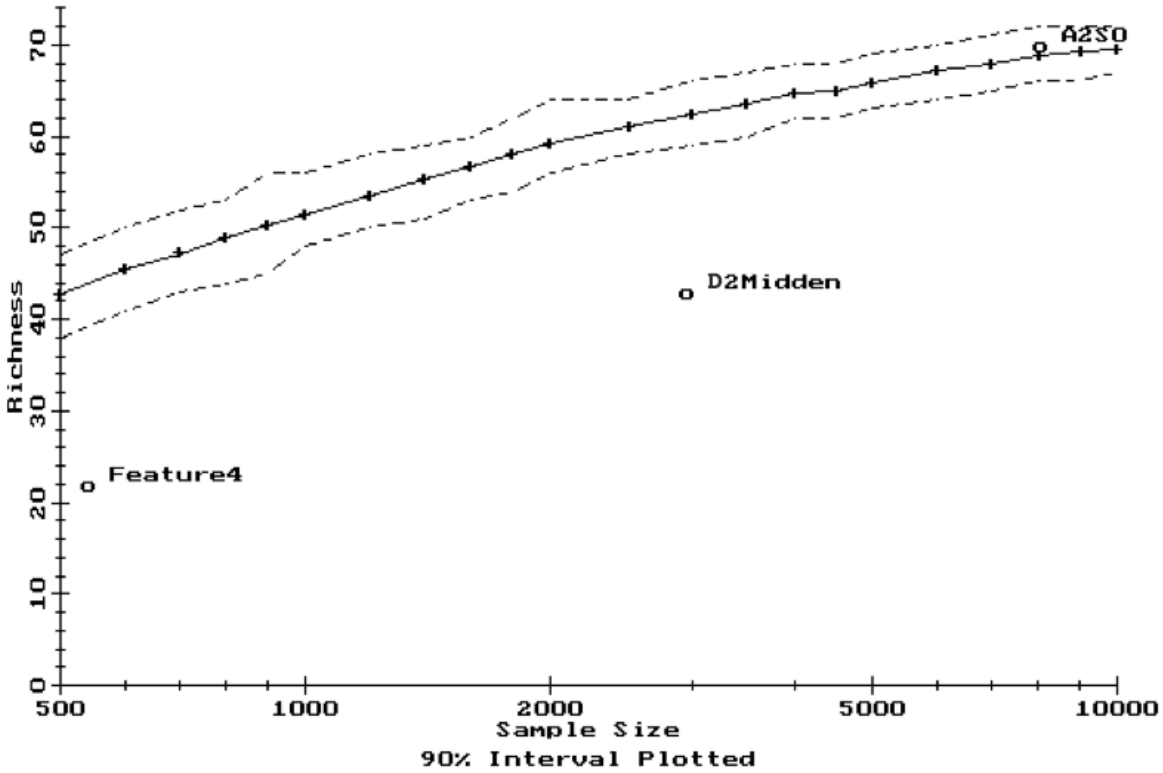

Figure 5.6. Diversity plot of the three analyzed Feltus midden contexts showing that A2.S0 has a higher than expected diversity, while Feature 4 and the D2 midden show lower than expected diversity.

Table 5.9. Utility indices indicating a low overall utilization of deer resources (i.e., a focus on meat extraction but not marrow or grease extraction or bone tool production).

Element	Complete	Sample	MNE Excepted	% MAU	MGUI	Density
Skull	30	5	120	4.17		
Mandible	2	2	8	25.00	44	0.57
Atlas	1	1	4	12.50	10	0.13
Axis	1	1	4	12.50	10	0.16
Cervical vertebrae	5	8	20	40.00	36	0.19
Thoracic vertebrae	12	11	48	22.92	46	0.24
Lumbar vertebrae	5	15	20	75.00	32	0.29
Sternum	1	0	4	0.00	64	0.22
Scapula	2	4	8	50.00	43	0.36
Proximal humerus	2	0	8	0.00	43	0.24
Distal humerus	2	4	8	50.00	37	0.39
Proximal radius	2	4	8	50.00	27	0.39
Distal radius	2	2	8	25.00	22	0.43
Proximal ulna	2	1	8	12.50	32	0.30
Distal ulna	2	3	8	37.50	32	0.44
Carpals	12	3	48	6.25	32	0.39
Sacrum	1	0	4	0.00	40	0.19
Pelvis	2	5	8	62.50	48	0.27
Proximal femur	2	8	8	100.00	100	0.36
Distal femur	2	8	8	100.00	100	0.28
Proximal tibia	2	3	8	37.50	65	0.30
Distal tibia	2	1	8	12.50	47	0.50
Calcaneus	2	1	8	12.50	32	0.64
Astragulus	2	1	8	12.50	32	0.47
Tarsals	8	1	32	3.13	32	0.39
Metacarpal	2	0	8	0.00	12	0.56
Metatarsal	2	0	8	0.00	30	0.55
Phalange 1	8	0	32	0.00	14	0.42
Phalange 2	8	0	32	0.00	14	0.25
Phalange 3	8	2	32	6.25	14	0.25

Significance of represented bone v. MGUI: 0.40819
Significance of represented bone v. Density: -0.32639

Table 5.10. Element representation for deer based on a ratio of skeletal portions using NISP. Overrepresented portions include axial, forequarter, and hindquarter elements; underrepresented portions include the skull and feet.

	Archaeological			**Sample**			
Portion	**NISP**	**NISP %**	**Loge X**	**NISP**	**NISP %**	**Loge Y**	**Ratio d=(Log$_e$ X)-(Log$_e$ Y)**
Head	7	6.7	1.902	63	23.9	3.174	-1.254
Axial	36	34.6	3.544	73	27.7	3.321	0.223
Forequarter	18	17.3	2.851	8	3.0	1.099	1.752
Hindquarter	35	33.7	3.517	16	6.1	1.808	1.709
Forefoot	3	2.9	1.065	14	5.3	1.668	-0.603
Hindfoot	2	1.9	0.642	14	5.3	1.668	-1.026
Foot	3	2.9	1.065	76	28.8	3.360	-2.295

> This is not particularly uncommon within archaeological contexts as such bones often come back to camp with the skin of the animal to be worked out in the process of tanning. Far more uncommon are the three remaining elements, two leg bones and a vertebra. This may suggest that the death of the bear was part of the ceremonialism associated with the mound center. (Funkhouser 2013:3)

These analyses imply that higher quality cuts of meat were being selected and that some animals were being used in atypical ways. The abundance of large mammal and general low diversity of other classes is suggestive of feasting or other ceremonial activity. Finally, the presence of two fawns indicate that the event represented by the D2 midden, if singular, took place in late spring or early summer (Funkhouser 2013:3).

Feature 4 is distinctly less diverse than the midden above it (see Figure 5.6). Its faunal assemblage (NISP = 541) contains four confidently identified mammal species, five fragments of unidentified bird bone, at least three turtle taxa, an unidentified snake bone, and four fish taxa (Table 5.11). It is dominated by large mammals and turtle and has an exceptionally low abundance of fish (Figure 5.7; Table 5.6; Appendix 2, Table A2.9 for

Table 5.11. Faunal assemblage from Feature 4 (NISP = 541 including four mammal species, five fragments of unidentified bird bone, at least three turtle taxa, an unidentified snake bone, and four fish taxa).

Taxon	**NISP**	**%**	**Weight (g)**	**%**	**Heat Altered**	**%**
Bear (*Ursus americanus*)	5	0.92	18.43	8.02	1	0.32
Raccoon (*Procyon lotor*)	1	0.18	0.75	0.33	1	0.32
Whitetail deer (*Odocoileus virginiana*)	15	2.77	29.84	12.99	12	3.83
Squirrel (*Sciurus* spp.)	1	0.18	0.07	0.03	1	0.32
Unidentified very large mammal	19	3.51	28.97	12.61	0	0.00
Unidentified large mammal	257	4.75	116.74	50.81	161	51.44
Unidentified small/medium mammal	4	0.74	0.41	0.18	4	1.28
Unidentified mammal	131	24.21	15.88	6.91	50	15.97
Subtotal Mammal	**433**	**80.04**	**211.09**	**91.87**	**230**	**73.48**
Unidentified large bird	2	0.37	0.43	0.19	2	0.64
Unidentified bird	3	0.55	0.34	0.15	2	0.64
Subtotal Bird	**5**	**0.92**	**0.77**	**0.34**	**4**	**2.00**
Box turtle (*Terrapene* sp.)	7	1.29	2.26	0.98	7	2.24
Cooter/slider/map turtle (Aquatic Emydid)	6	1.11	4.4	1.91	0	0.00
Mud/musk turtle (Kinosternidae)	1	0.18	0.27	0.12	1	0.32
Unidentified turtle	49	9.06	7.32	3.19	34	10.86
Unidentified snake (Serpentes)	1	0.18	0.05	0.02	1	0.32
Subtotal Reptile	**64**	**11.83**	**14.3**	**6.22**	**43**	**13.00**
Bowfin (*Amia calva*)	2	0.37	0.09	0.04	1	0.32
Channel/blue catfish (*Ictalurus* p/f)	1	0.18	0.08	0.03	0	0.00
Catfish family (Ictaluridae)	3	0.55	0.12	0.05	3	0.96
Gar family (Lepisosteidae)	7	1.29	1.46	0.64	7	2.24
Sucker family (Catastomidae)	1	0.18	0.06	0.03	1	0.32
Perciformes	2	0.37	0.2	0.09	2	0.64
Unidentified fish (Osteichthyes)	23	4.25	1.6	0.07	22	7.03
Subtotal Fish	**39**	**7.21**	**3.61**	**1.57**	**36**	**11.50**
TOTAL	**541**	99.63	**229.77**	**100**	**313**	**99.68**
Indeterminate	-		18.74			

Figure 5.7. Correspondence analysis of the three analyzed Feltus midden contexts showing that A2.S0 is associated with medium/small mammals and fish, the D2 midden is associated with birds and unidentified mammals, and Feature 4 is associated with large mammals and reptiles.

element data). Given the relatively small sample size, the five definite and 19 probable bear bones from this deposit are noteworthy.[13] The bear to deer ratio in Feature 4 is 1:3 while that from the midden above it less than 1:14.

The final context for which the faunal assemblage has been thoroughly analyzed is A2.S0. A2.S0 is both the largest (NISP = 8031) and the most diverse (see Figure 5.6) assemblage from the site, containing twelve mammal, one bird, seven reptile, two amphibian, and nineteen fish taxa (Table 5.12). This includes many taxa not found in any other assemblages from Feltus, especially fish, amphibian, and medium/small mammal species (see Figure 5.7). In addition to deer, bowfin, catfish, and gar dominate this assemblage. The data available about A1.S0 indicate that it is comparable to A2.S0, though it has a smaller percentage of large mammals and higher percentages of fish and birds (see Table 5.6).

Comparisons with Other Sites

Kelley (1990) reports the faunal data from the Coles Creek period Paw Paw site in the Felsenthal region of southern Arkansas. Despite its more northern location in a transitional zone between LMV and Caddoan cultures, Paw Paw provides one possible comparative sample for Feltus. Looking first at broad faunal categories, there are major differences between the two sites (Table 5.13). First and foremost, fish make up over 30% of the Feltus assemblage, but only 2% of the Paw Paw assemblage. Mammals, reptiles, and amphibians

[13] Probable bear bones are recorded as "unidentified very large mammal." They are entirely consistent with bear, just lack the features necessary to be confidently identified. That said, as they are larger than deer bones, there are few other mammals to which these specimens could belong (H. Edwin Jackson, personal communication 2012).

Table 5.12. Faunal assemblage from A2.S0 (NISP = 8031, including twelve mammal, one bird, seven reptile, two amphibian, and nineteen fish taxa).

Taxon	**NISP**	**%**	**Weight (g)**	**%**	**Heat Altered**	**%**
Bear (*Ursus americanus*)	59	0.73	235.22	3.26	4	0.33
Beaver (*Castor canadensis*)	4	0.05	38.3	0.53	0	0.00
Cottontail rabbit (*Sylvilagus floridanus*)	15	0.19	10.56	0.15	0	0.00
Fox squirrel (*Sciurus niger*)	17	0.21	4.73	0.07	0	0.00
Gray squirrel (*Sciurus carolinensis*)	79	0.98	20.07	0.28	6	0.49
Opossum (*Didelphis virginianus*)	15	0.19	23.57	0.33	2	0.16
Raccoon (*Procyon lotor*)	28	0.35	56.24	0.78	5	0.41
Striped skunk (*Mephitis mephitis*)	1	0.01	1.93	0.03	0	0.00
Swamp rabbit (*Sylvilagus aquaticus*)	127	1.58	89.55	1.24	11	0.90
Vole (*Microtus pinetorum*)	1	0.01	0.02	0.00	0	0.00
Whitetail deer (*Odocoileus virginiana*)	441	5.49	3239.84	44.92	29	2.37
Dog/wolf/coyote (*Canis* sp.)	1	0.01	0.23	0.00	0	0.00
Rabbit family (*Sylvilagus* spp.)	17	0.21	3.42	0.05	7	0.57
Squirrel family (*Sciurus* spp.)	12	0.15	0.98	0.01	1	0.08
Unidentified large mammal	1281	15.95	1155.89	16.03	529	43.29
Unidentified medium mammal	33	0.41	22.97	0.32	5	0.41
Unidentified small/medium mammal	32	0.40	8.1	0.11	0	0.00
Unidentified small mammal	155	1.93	40.21	0.56	21	1.72
Unidentified mammal	2009	25.02	1280.11	17.75	488	39.93
Subotal Mammal	**4327**	**53.88**	**6231.94**	**86.40**	**1108**	**90.67**
Turkey (*Meleagris gallopava*)	25	0.31	85.21	1.18	0	0.00
Unidentified large bird	22	0.27	9.67	0.13	2	0.16
Unidentified medium bird	2	0.02	0.59	0.01	0	0.00
Unidentified bird	140	1.74	31.00	0.43	9	0.74
Subtotal Bird	**189**	**2.35**	**126.47**	**1.75**	**11**	**0.90**
Common snapping turtle (*Chelydra serpentina*)	3	0.04	4.21	0.06	0	0.00
Box turtle (*Terrapene* sp.)	9	0.11	22.38	0.31	0	0.00
Cooter/slider/map turtle (Aquatic Emydid)	7	0.07	7.05	0.10	0	0.00
Box/water turtle (Emydidae)	21	0.26	5.41	0.08	3	0.25
Mud/musk turtle (Kinosternidae)	2	0.02	0.29	0.00	0	0.00
Snapping turtle (Chelydridae)	66	0.82	43.16	0.60	6	0.49
Unidentified turtle	140	1.74	70.71	0.98	11	0.90

Table 5.12. Continued.

Taxon	NISP	%	Weight (g)	%	Heat Altered	%
King/rat/corn snake (*Elaphe/Lampropeltis* sp.)	5	0.06	0.54	0.01	0	0.00
Water snake (*Nerodia* sp.)	4	0.05	0.54	0.01	0	0.00
Non-poisonous snake (Colubridae)	1	0.01	0.12	0.00	0	0.00
Viper (Viperidae)	1	0.01	0.16	0.00	0	0.00
Unidentified snake (Serpentes)	14	0.17	1.87	0.03	0	0.00
Subtotal Reptile	**273**	**3.40**	**156.44**	**2.17**	**20**	**1.64**
Bullfrog (*Rana catesbeiana*)	2	0.02	1.15	0.02	0	0.00
Frog/Toad (*Rana/Bufo* sp.)	3	0.01	0.12	0.00	0	0.00
Hellbender (*Cryptobranchus alleganiensis*)	1	0.01	0.06	0.00	0	0.00
Subtotal Amphibian	**6**	**0.07**	**1.33**	**0.02**	**0**	**0.00**
Alligator gar (*Atractosteus spatula*)	68	0.85	29.6	0.41	1	0.08
Black bullhead (*Ictalurus melas*)	11	0.14	1.2	0.02	0	0.00
Black crappie (P. nigromaculatus)	2	0.02	0.16	0.00	0	0.00
Blue cat (*Ictalurus furcatus*)	11	0.14	8.18	0.11	0	0.00
Bowfin (*Amia calva*)	295	3.67	42.9	0.59	14	1.15
Brown bullhead (*Ictalurus nebulosu*s)	1	0.01	0.13	0.00	0	0.00
Channel cat (*Ictalurus Punctatus*)	51	0.64	11.3	0.16	0	0.00
Flathead cat (*Pylodictis olivaris*)	3	0.04	1.75	0.02	0	0.00
Freshwater drum (*Aplodinotis grunniens*)	36	0.45	10.54	0.15	0	0.00
Largemouth bass (*Micropterus salmoides*)	13	0.16	4.41	0.06	0	0.00
Largemouth buffalo (*Ictiobus cyprinellus*)	17	0.21	3.82	0.05	0	0.00
Longnosed gar (*Lepisosteus osseus*)	2	0.02	0.67	0.01	0	0.00
Redear sunfish (*Lepomis microlophus*)	3	0.04	0.51	0.01	0	0.00
Smallmouth buffalo (*Ictalurus bubalus*)	4	0.05	0.5	0.01	0	0.00
Striped bass (*Morone saxatilis*)	2	0.02	0.24	0.00	0	0.00
White crappie (*Pomoxix annularis*)	2	0.02	0.44	0.01	0	0.00
Yellow bullhead (*Ictalurus natalis*)	1	0.01	0.09	0.00	0	0.00
Bullhead (*Ictalurus melas/natalis/nebulosus*)	14	0.17	0.99	0.01	1	0.08
Channel/blue catfish (*Ictalurus* p/f)	15	0.19	2.83	0.04	2	0.16
Bass (*Micropterus* sp.)	25	0.31	4.35	0.06	0	0.00

Table 5.12. Continued.

Taxon	NISP	%	Weight (g)	%	Heat Altered	%
Buffalo (*Ictiobus* sp.)	18	0.22	5.7	0.08	0	0.00
Crappie (*Pomoxix* sp.)	12	0.15	1.62	0.02	0	0.00
Sturgeon (*Scaphirhynchos* sp.)	5	0.06	1.12	0.02	0	0.00
Sunfish (*Lepomis* sp.)	12	0.15	2.41	0.03	0	0.00
Catfish (*Ictalurus* sp./*Ameiurus* sp.)	11	0.14	1.19	0.02	0	0.00
Catfish family (Ictaluridae)	341	4.25	56.835	0.79	5	0.41
Gar family (Lepisosteidae)	361	4.50	226.09	3.13	30	2.45
Sturgeon family (Acipenseridae)	5	0.06	0.8	0.01	0	0.00
Sucker family (Catastomidae)	170	2.12	37.46	0.52	3	0.25
Sunfish family (Centrarchidae)	69	0.86	4.29	0.06	0	0.00
Perciformes	95	1.18	8.8	0.12	3	0.25
Unidentified Fishes (Osteichthyes)	1561	19.44	225.51	3.13	24	1.96
Subtotal Fish	**3236**	**40.29**	**696.435**	**9.66**	**83**	**6.79**
Total Assemblage	8031	100	7212.61	100	1222	100
Gar Scales (Lepisosteidae)	1915		259.73			
Indeterminate	-		256.88			

Table 5.13. Comparisons by animal category for Feltus and Paw Paw.

	Feltus		Paw Paw	
Category	**NISP**	**Weight**	**NISP**	**Weight**
Mammal	57.63%	86.38%	80.98%	88.85%
Bird	2.31%	1.58%	2.21%	1.55%
Reptile	3.85%	1.94%	14.20%	8.62%
Amphibian	0.04%	0.01%	0.29%	0.05%
Fish	36.17%	10.09%	2.16%	0.92%

were all more common at Paw Paw than at Feltus, while birds occur at the two sites in relatively similar frequencies.

In order to better understand these patterns, it is necessary also to look at the taxa within each major category (Table 5.14). Mammals are similarly diverse at both sites and the mammals that do differ between them are represented only in small quantities. That said, there are potentially important differences among taxa frequencies. Large mammals are more frequent at Feltus, making up 89% of the assemblage as compared to 55% at Paw Paw (Table 5.15). Moreover, the composition of the large mammal category is quite different between the two sites (Table 5.16); bear is more frequent at Feltus, where it totals 9% of the large mammals, than at Paw Paw, where it totals less than 1%. Deer was undoubtedly an important food source at both sites, while bear was regularly emphasized only at Feltus. This further supports the idea that bear had a particular ritual significance to the Feltus population. Medium and small mammals are much more frequent at Paw Paw, with the exception of gray squirrels and swamp rabbits, which are more common at Feltus. It is thus likely that these smaller mammals were more important in the diets of the people living at Paw Paw than the people at Feltus.

Birds occur at approximately the same frequency at the two sites, however the assemblage is much more diverse at Paw Paw than at Feltus (nine versus two taxa).[14] Both sites' populations likely relied on turkey as a primary food source while other birds were less important. Reptiles are more common at Paw Paw (14.2% of the total assemblage) than at Feltus (3.85% of the total assemblage) and likely formed a much more significant part of the diet there. Turtles dominate both assemblages, but snakes are fairly common at Feltus and

[14] This difference may represent a disparity in the abilities of the researchers to identify bird taxa, especially as there are much larger numbers of unidentified birds in the Feltus assemblage.

Table 5.14. Taxa level faunal data for Feltus and Paw Paw.

	Feltus				Paw Paw			
Taxon	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**
Bear	74	0.64	395.99	3.91	9	0.10	200.10	0.60
Beaver	4	0.03	38.30	0.38	21	0.24	245.30	0.74
Bobcat	0	0.00	0.00	0.00	6	0.07	46.40	0.14
Cottontail rabbit	17	0.15	5.15	0.05	27	0.31	25.30	0.08
Fox squirrel	20	0.17	5.87	0.06	21	0.24	13.00	0.04
Gray fox	0	0.00	0.00	0.00	8	0.09	54.90	0.17
Gray squirrel	87	0.75	21.52	0.21	56	0.65	29.00	0.09
Mole	1	0.01	0.25	0.00	0	0.00	0.00	0.00
Muskrat	0	0.00	0.00	0.00	1	0.01	1.00	0.00
Opossum	16	0.14	24.39	0.24	42	0.49	110.40	0.33
Raccoon	30	0.26	57.69	0.57	128	1.49	260.70	0.79
Red fox	0	0.00	0.00	0.00	2	0.02	5.90	0.02
Striped skunk	1	0.01	1.93	0.02	0	0.00	0.00	0.00
Swamp rabbit	136	1.18	94.15	0.93	25	0.29	44.60	0.13
Vole	2	0.02	0.06	0.00	0	0.00	0.00	0.00
Whitetailed Deer	603	5.23	4605.56	45.46	2600	30.23	21255.60	64.01
Dog/wolf/coyote	1	0.01	0.23	0.00	4	0.05	33.10	0.10
Rabbit family	17	0.15	3.42	0.03	28	0.33	38.10	0.11
Squirrel family	14	0.12	1.13	0.01	18	0.21	5.40	0.02
Large mammal	2140	18.55	1711.71	16.90	1200	13.95	4985.50	15.01
Medium/small mammal	315	2.73	99.36	0.98	2769	32.19	2146.60	6.46
Mammal	3170	27.48	1684.74	16.63	0	0.00	0.00	0.00
Subtotal Mammal	**6648**	**57.63**	**8751.45**	**86.38**	**6965**	**80.98**	**29500.90**	**88.85**
Bald Eagle	0	0.00	0.00	0.00	1	0.01	0.40	0.00
Bobwhite	0	0.00	0.00	0.00	1	0.01	0.30	0.00
Crow	0	0.00	0.00	0.00	2	0.02	2.30	0.01
Mallard	0	0.00	0.00	0.00	3	0.03	3.30	0.01
Pintail	0	0.00	0.00	0.00	1	0.01	1.20	0.00
Passenger pigeon	0	0.00	0.00	0.00	6	0.07	2.30	0.01
Turkey	41	0.36	107.25	1.06	117	1.36	459.70	1.38
Wood Duck	0	0.00	0.00	0.00	1	0.01	0.50	0.00
Duck	0	0.00	0.00	0.00	3	0.03	2.40	0.01

Table 5.14. Continued.

	Feltus				Paw Paw			
Taxon	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**
Large bird	28	0.24	11.30	0.11	0	0.00	0.00	0.00
Medium bird	2	0.02	0.59	0.01	0	0.00	0.00	0.00
Bird	194	1.68	40.63	0.40	55	0.64	43.50	0.13
Subtotal Bird	**265**	**2.31**	**159.77**	**1.58**	**190**	**2.21**	**515.90**	**1.55**
Alligator snapping turtle	0	0.00	0.00	0.00	79	0.92	679.80	2.05
Common snapping turtle	3	0.03	4.21	0.04	46	0.53	90.80	0.27
Box turtle	22	0.19	27.00	0.27	223	2.59	745.90	2.25
Red-eared turtle	0	0.00	0.00	0.00	53	0.62	180.00	0.54
Slider	0	0.00	0.00	0.00	57	0.66	125.70	0.38
Softshell turtle	0	0.00	0.00	0.00	30	0.35	68.40	0.21
Cooter/slider/ map turtle	14	0.12	13.49	0.13	55	0.64	228.35	0.69
Box/water turtle	24	0.21	7.41	0.07	0	0.00	0.00	0.00
Mud/musk turtle	5	0.04	6.11	0.06	125	1.45	102.80	0.31
Snapping turtle	66	0.57	43.16	0.43	0	0.00	0.00	0.00
Turtle	234	2.03	85.89	0.85	547	6.36	635.70	1.91
Mud snake	0	0.00	0.00	0.00	1	0.01	0.10	0.00
King/rat/corn snake	7	0.06	0.58	0.01	0	0.00	0.00	0.00
Water snake	4	0.03	0.54	0.01	0	0.00	0.00	0.00
Non-poisonous snake	19	0.16	1.75	0.02	0	0.00	0.00	0.00
Viper	2	0.02	0.20	0.00	0	0.00	0.00	0.00
Snake	44	0.38	5.87	0.06	0	0.00	0.00	0.00
Unidentifed reptile	0	0.00	0.00	0.00	5	0.06	5.70	0.02
Subtotal Reptile	**444**	**3.85**	**196.21**	**1.94**	**1221**	**14.20**	**2863.25**	**8.62**
Bullfrog	2	0.02	1.15	0.01	24	0.28	16.40	0.05
Frog/toad	2	0.02	0.12	0.00	0	0.00	0.00	0.00
Hellbender	1	0.01	0.06	0.00	0	0.00	0.00	0.00
Tiger salamander	0	0.00	0.00	0.00	1	0.01	1.00	0.00
Subtotal Amphibian	**5**	**0.04**	**1.33**	**0.01**	**25**	**0.29**	**17.40**	**0.05**

Table 5.14. Continued.

	Feltus				Paw Paw			
Taxon	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**
Black bullhead	11	0.10	1.20	0.01	0	0.00	0.00	0.00
Black crappie	2	0.02	0.16	0.00	0	0.00	0.00	0.00
Blue catfish	14	0.12	10.41	0.10	0	0.00	0.00	0.00
Bowfin	304	2.64	44.07	0.43	5	0.06	3.12	0.01
Brown bullhead	1	0.01	0.13	0.00	0	0.00	0.00	0.00
Channel cat	51	0.44	11.30	0.11	0	0.00	0.00	0.00
Flathead catfish	3	0.03	1.75	0.02	0	0.00	0.00	0.00
Freshwater drum	57	0.49	18.87	0.19	69	0.80	202.19	0.61
Largemouth bass	14	0.12	4.55	0.04	10	0.12	8.50	0.03
Largemouth buffalo	31	0.27	12.82	0.13	0	0.00	0.00	0.00
Longnosed gar	8	0.07	35.27	0.35	1	0.01	0.90	0.00
Paddlefish	0	0.00	0.00	0.00	1	0.01	2.50	0.01
Redear sunfish	3	0.03	0.51	0.01	0	0.00	0.00	0.00
Smallmouth buffalo	6	0.05	1.06	0.01	0	0.00	0.00	0.00
Striped bass	2	0.02	0.24	0.00	0	0.00	0.00	0.00
White crappie	2	0.02	0.44	0.00	0	0.00	0.00	0.00
Yellow bullhead	1	0.01	0.09	0.00	0	0.00	0.00	0.00
Bullhead	14	0.12	0.99	0.01	0	0.00	0.00	0.00
Channel/blue catfish	17	0.15	4.91	0.05	13	0.15	18.70	0.06
Bass	25	0.22	4.35	0.04	0	0.00	0.00	0.00
Buffalo	20	0.17	6.00	0.06	4	0.05	7.30	0.02
Crappie	13	0.11	1.79	0.02	0	0.00	0.00	0.00
Sturgeon	5	0.04	1.12	0.01	0	0.00	0.00	0.00
Sunfish	12	0.10	2.41	0.02	0	0.00	0.00	0.00
Catfish	11	0.10	1.19	0.01	0	0.00	0.00	0.00
Catfish family	392	3.40	80.15	0.79	2	0.02	5.70	0.02

Table 5.14. Continued.

	Feltus				Paw Paw			
Taxon	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**
Sturgeon family	5	0.04	0.80	0.01	0	0.00	0.00	0.00
Sucker family	211	1.83	53.15	0.52	0	0.00	0.00	0.00
Sunfish family	69	0.60	4.29	0.04	0	0.00	0.00	0.00
Fish	2295	19.89	326.14	3.22	52	0.60	30.00	0.09
Subtotal Fish	**3599**	**36.17**	**630.16**	**10.09**	**186**	**2.16**	**306.91**	**0.92**
Total Assemblage	**10961**	**100**	**9738.91**	**100**	**8601**	**100**	**33204.36**	**100**

Table 5.15. Comparisons by mammal size for Feltus and Paw Paw.

	Feltus				Paw Paw			
Size	**NISP**	**%**	**Weight (g)**	**%**	**NISP**	**%**	**Weight (g)**	**%**
Large	1036	89	2082.31	98	3809	55	26441.2	89
Medium	34	3	16.59	1	41	1	385.6	1
Small	90	8	21.81	1	3123	45	2729	9
TOTAL	1160	100	2120.71	100	6973	100	29555.8	100

Table 5.16. Comparisons of large mammals for Feltus and Paw Paw.

	Feltus		Paw Paw	
Large Mammal	**NISP**	**%**	**NISP**	**%**
Deer	603	89	2600	100
Bear	74	11	9	0
TOTAL	677	100	2609	100

nearly absent at Paw Paw. Amphibians are rare at both sites. It is unlikely that amphibians were eaten at Feltus, but the Paw Paw population may have collected bullfrogs to supplement their diet.

Fish are both more abundant and more diverse at Feltus. There are nineteen mutually exclusive fish taxa at Feltus and only seven at Paw Paw. At Feltus, their abundance suggests that they were as important of a food source as mammals. At Paw Paw, on the other hand, fish provided a relatively minor supplement to the diet. Moreover, the Feltus population likely focused their fishing on oxbow lakes while the residents of Paw Paw likely fished equally in both the main river channel and the oxbow/backwater environments. From mid-summer to early fall, fish would have been exceptionally abundant in oxbow/backwater environments. "The annual floodwaters have receded by that time and large numbers of fish are trapped in the lakes… the peak of fish biomass probably occurs immediately after the return to low water levels" (Kelley 1990:44).

Overall, this comparison paints a picture of the people at Feltus concentrating on animal resources that were relatively easy to procure en masse (i.e., deer and fish, and to a lesser degree turkey, turtle, squirrel, and rabbit). While these species dominate Coles Creek faunal assemblages more generally, Feltus shows an especially low abundance and diversity of other animals. The exception to this pattern is bear, which is much more common at Feltus than at most southeastern sites (H. Edwin Jackson, personal communication 2012). This abundance, when combined with the inclusion of bear elements not generally found on archeological sites (e.g., femora, tibiae, and vertebrae) suggest that bear were of unique importance to the people at Feltus. Moreover, it suggests that, like plant remains, some inclusions in the Feltus faunal assemblage may have had ritual as well as subsistence uses.

Food Use at Feltus

Combined, the plant and animal remains at Feltus reveal four major patterns. First, Feltus populations focused on resources that were relatively easy to hunt, gather, and grow in large quantities. This includes heavy reliance on acorns, hickory nuts, deer, and fish. Plant remains also indicate an emphasis on easily storable resources. The presence of Eastern Agricultural Complex plants such as amaranth, knotweed, and maygrass, as well as clearly domesticated chenopod, suggest that this desire to easily amass stores of plant foods may have led to early stages of cultivation in this part of the river valley. Second, the Feltus assemblage displays a low diversity of other plant and animal resources. This is demonstrated the relatively low incidence of fruit in the floral assemblage and the low diversity of small and medium mammals, birds, reptiles, and amphibians in the faunal assemblage when compared to other Coles Creek sites. Third, the Feltus food remains indicate an emphasis on resources that are high in protein and fat. This is visible not only in the unusually high reliance on oily nuts and seeds, but also in the heavy reliance on fish and large mammals. Finally, the Feltus assemblage contains a generally high incidence of ritual resources. This is most visible through the abundance of bear on the site, but also through the presence of plants such as nightshade, morning-glory, sumac, and a smattering of other seeds and fruits that occur in small frequencies.

There are also interesting differences between the site areas. Generally, the Mound A middens (A1.S0 and A2.S0) are more diverse than the Mound D area deposits (Feature 4 and D2.Midden). This may indicate differences in function among site areas or changes in the nature of activities at the site through time. A1.S0 is consistently the most diverse, containing plants and animals that rarely, if ever, occur in other deposits. This fits with recognized

contextual differences between this deposit and other midden contexts at Feltus. A1.S0 is the only midden associated with large numbers of postholes and is the only deposit with multiple, clearly delineated depositional episodes within it. As previously stated, it likely represents a more gradual accumulation of debris associated with structures or at least repeated use of the same area. That said, ritual activity of some sort is indicated by the presence of both an ash-lined post and pipe fragments in the final episode of midden deposition. I believe that A1.S0 was built up gradually before being capped by the rapidly deposited trash layer and then the first stage of mound fill. It is possible that, if examined separately, the final stage of A1.S0 would more closely resemble the probable feasting contexts at the site. Should additional excavations take place in this location, care should be taken to separate the final episode of fill from the earlier episodes.

A2.S0 is consistently the second most diverse assemblage at Feltus, containing fruits, other seeds, and fish taxa that are not present in other deposits. Though its assemblage resembles A1.S0 in many ways, its stratigraphy differs dramatically. A2.S0 appears to be a single-stage deposit with no breaks evident during its deposition and no features present within or beneath it. I believe that A2.S0 represents a single large eating event associated with mound-building or mound-top activity at Mound A. Comparisons between this deposit and the Mound D area deposits thus have the potential to characterize changes in Coles Creek feasting behavior through time.

The two Mound D area deposits are less diverse than those associated with Mound A and show clear evidence of rapid deposition with pot breaks and partly articulated animal skeletons found throughout their fill. Their low diversity is largely due to a strong emphasis on a few primary resources (i.e. large mammals, reptiles, and oily nuts in Feature 4, and

acorns in the D2 midden). The diversity that *is* present beyond these staples primarily stems from plants and animals with potentially ritual functions. This pooled evidence suggests that the Mound D area deposits represent temporally isolated, large-scale eating events with ritual components. This interpretation is supported by the direct association of these midden deposits with the repeated setting and removing of free-standing posts.

These patterns, combined with overall abundance of plant and animals remains at Feltus, suggest that the site consistently hosted large-scale eating events. This interpretation is strongly supported by the excavation data presented in Chapter 2, which indicate rapid accumulation of food waste in particular areas, and the ceramic data presented in Chapter 4, which indicate an overall emphasis on serving vessels at the site. Patterning in the ceramic, plant, and animal data suggest that A2.S0, Feature 4, and the D2 midden all resulted from intensive, short-term activity focused on large-scale food consumption, while A1.S0 was gradually deposited through more typical domestic activity. What these differences reveal about the types and nature of activities at Feltus is the focus of the following chapter.

CHAPTER 6

RITUAL ACTIVITY AT FELTUS

Excavation data, radiocarbon dates, and stylistic ceramic evidence all support the conclusion that Coles Creek people utilized the Feltus landscape episodically for some 400 years, from the Hamilton Ridge phase of the Baytown period through at least the Balmoral phase of the Coles Creek period. With the possible exception of the area east of Mound A, no evidence for habitation exists at the site. Rather, it appears that Feltus hosted repeated, large-scale ritual events focused on communal food consumption and a repeated process of setting and removing large standing posts. While mound building (and burial of the dead) eventually became part of these events, much of the activity at Feltus took place before the mounds were constructed. This provides the important opportunity to take a less mound-centric view of the activities occurring at Coles Creek sites.

Even after mound construction began, the nature of the activities taking place at Feltus shows remarkable stability. This continuity between the pre- and post-mound uses of the site suggests that the act of constructing and using platform mounds did not in-and-of-itself change the nature of LMV societies. To the contrary, I argue that a strong ethos of communalism characterized the activities taking place during both the premound and mound construction phases of Feltus's occupation, and likely also characterized Coles Creek populations more broadly.

The Ritual Cycle at Feltus

The clusters of radiocarbon dates from Feltus fall into three Coles Creek phases—Sundown, Ballina and Balmoral (see Figure 2.39). Archaeological data support the case that these clusters represent distinct episodes of use and not accidents of sampling. The first episode of intensive use at Feltus occurred during the Sundown phase and is represented archaeologically by a series of large posts and refuse pits in the Mound D area. The post pits display an internal structure that indicates a specific, repeated depositional sequence that included both placing dedicatory deposits in the initial fill of the post hole and plugging the post molds with clean sediment after their removal. Radiocarbon dating of bone from one post pit (Feature 1) returned a date identical to that from a nearby massive pit full of food remains and ceramic refuse (Feature 4). The character of Feature 4's fill suggests rapid dumping, and the shape and size of ceramic vessels, suite of animal and plants recovered, and large size of certain animal specimens suggests feasting. Similarities in date and presumably ritual inclusions (e.g., pipes and bear bone) imply that this refuse deposit and nearby post pits are linked through ceremonies involving placing and removing free-standing posts and attendant feasting. Slightly later dates from one post in D4, and the stratigraphic relationship between Feature 4 and the D2 midden above it suggest that this combination of activities was repeated at least twice during the Sundown phase.

This association between post-setting and feasting is strengthened by evidence for these activities happening concurrently in the deposits now buried under Mound A during the second major period of Feltus's occupation in the Ballina phase. Mound A sits upon a thick midden deposit that built up over an undetermined period of time. The upper portion of the midden consists of a particularly dense deposit of fish scales, animal bones, and charcoal.

This layer represents a discrete deposit put in place immediately before mound construction began. A large, ash-lined, standing post (Feature 37) much like those in the South Plaza was set into this midden and the final refuse deposit quickly accumulated around it. This post was pulled immediately before the first stage of Mound A was constructed. A second ash-lined post was also located in the midden just to the southeast of the mound.

Once mound building began at Feltus it proceeded rapidly, with large portions of at least Mounds A and B being constructed during the Ballina phase. However, these two large platform mounds were constructed and used in different ways. Mound B was constructed gradually in five stages, with burning and veneering on the summits, while Mound A was built more quickly in four large stages, and shows no evidence of buildings on the summits. The only indications of summit use at Mound A were large, bathtub-shaped fire pits on A.S2, contexts likely associated with continued feasting during the late Ballina phase. It is possible that the midden southwest of Mound A was formed during this feast and then quickly followed by additional mound construction. Thus, during the second episode of concentrated activity at Feltus, we continue to see the pattern of post-setting associated with feasting, and add to it mound building activity.

After a brief hiatus, mound construction continued at Feltus. Mound C was constructed during the Balmoral phase and contains typical Coles Creek burials in the form of disarticulated bundles of human bone deposited en masse into the final mound stage. A late date from the midden in the base of the borrow pit south of Mound D's former location suggest that Mound D may also have been constructed during this time. However, it is equally possible that it was constructed during the preceding Ballina phase. Mound B was completed during the Balmoral phase and flank midden deposits on B.S4 indicate that food

consumption remained an important activity during this final stage. Large, leaning posts associated with this flank midden suggest that post-setting may also have occurred on the summit. Finally, radiocarbon dates place at least one standing post from the Mound D area in this final episode of concentrated activity. The pattern of post-setting, food consumption, and mound construction thus continues into the Balmoral phase, when burial of the dead also becomes an important part of the pattern.

Using the data from our 2006–2012 investigations, I conclude that Feltus provided a location for periodic ritual activity focused around a cycle of feasting, post-setting, mound building, and burial of the dead. In order to understand what this ritual cycle reveals about Coles Creek society, the rest of this chapter will summarize our knowledge about the nature of the activities included within it. I will begin with a focus on feasting, emphasizing the importance of recognizing and elucidating instances of non-competitive feasting in the archaeological record. I will then turn more briefly to post-setting and burial and suggest how these activities further support the communal nature of the activities taking place at Feltus. Finally, I will end with a discussion of monument construction, and specifically mound building at Feltus, that allows me to tie the Feltus case into broader discussions of platform mound construction in the American South.

Reconceptualizing Feasting

Food is almost universally recognized by anthropologists and archaeologists as being "good to think" (Dietler and Hayden 2001:1). Looking beyond food as a subsistence resource, anthropologists recognize the dialectic relationship that exists between food and the social, economic, and political world in which it exists (Appadurai 1981; Bourdieu 1984;

Van der Veen 2003). Much of the archaeological discussion of food as a socially charged material comes from the current emphasis on feasting. In the introduction to their volume on this topic, Dietler and Hayden (2001:2) state, “we need to think seriously and critically about what feasts are, how they operate, and how we can detect and interpret them. Otherwise, they risk becoming one more ill-digested archaeological interpretative fad.” In this section, I contribute to this critical examination of feasting by reimagining how we define what it a feast is and what social effects it may have.

During the recent florescence of feasting literature in both archaeology and ethnography, there have been a variety of definitions provided for the term *feast*. I have created a classificatory scheme that gives two key spectra of variation in these definitions (group size and level of sociopolitical competition) an equal role in defining an eating event as a feast. By allowing more variability in what qualifies as a feast, my scheme eliminates confusion about eating events that are excluded from the category of feasting by some researchers and included by others. Moreover, it provides an important means of comparison among eating events that allows for more sophisticated interpretations of archaeological remains. Finally, and perhaps most importantly, my conception acknowledges the importance of a large category of feasts that are under-theorized in archaeology—those whose purpose is to build community and increase solidarity within a group.

While most researchers assert that there is a real difference between feasts and everyday or “normal” food consumption, what constitutes this difference is rarely agreed upon. Some researchers emphasize differences in food quality or quantity (e.g., Dietler and Hayden 2001; Ralph 2007; Van Keuren 2004; Wills and Crown 2004), others focus on the size of the group involved (e.g., Mills 2004; Van Keuren 2004; Wills and Crown 2004), and

still others highlight differences in the format, level of ritualization, timing, or social role of the eating event (e.g., Gero 2003; Mills 2004; Pollock 2003). In extreme cases, a single event may be labeled a feast by one researcher and deliberately left out of that category by another.

My goal is not to posit a single definition of feast, but rather to develop a classificatory scheme that allows archaeologists to place a given eating event in relation to others while gaining a better understanding of that event and the society in which it took place. Most attempts at such a classification have involved defining subcategories of feasting — for example, Dietler's (1996; 2001) distinction between empowering, patron-role, and diacritical feasting and Hayden's (2001) distinction between alliance/cooperation, economic, and diacritical feasting. Yet even as the primary players in creating these schemes, Dietler and Hayden (2001:4) recognize the potential for more useful types of categorization:

> Within the domain of practices that we designate as feasts, there are many possible ways to categorize the range of differences and similarities. This fact explains the considerable diversity of classificatory schemes brought to bear on the subject … While some readers may find the lack of a uniform classification troubling or disappointing, we would suggest that this diversity need not worry us and is, in fact, a good thing—especially at this stage of theoretical development … As research progresses in this relatively novel field, our various ways of characterizing and understanding feasts will undoubtedly improve.

The schemes described above all have the problematic tendency "to present everyday domestic meals and feasts as mutually opposed rather than dialectically related" (Twiss 2007:51). Innovatively, Twiss (Twiss 2007:51) suggests that we visualize all eating events as existing "along a continuum that runs from the meanest of snacks to the grandest of feasts" (Figure 6.1) (see also Spielmann 2002). In Twiss's conceptualization, certain flamboyant events are quite obviously feasts characterized by large quantities of special foods shared

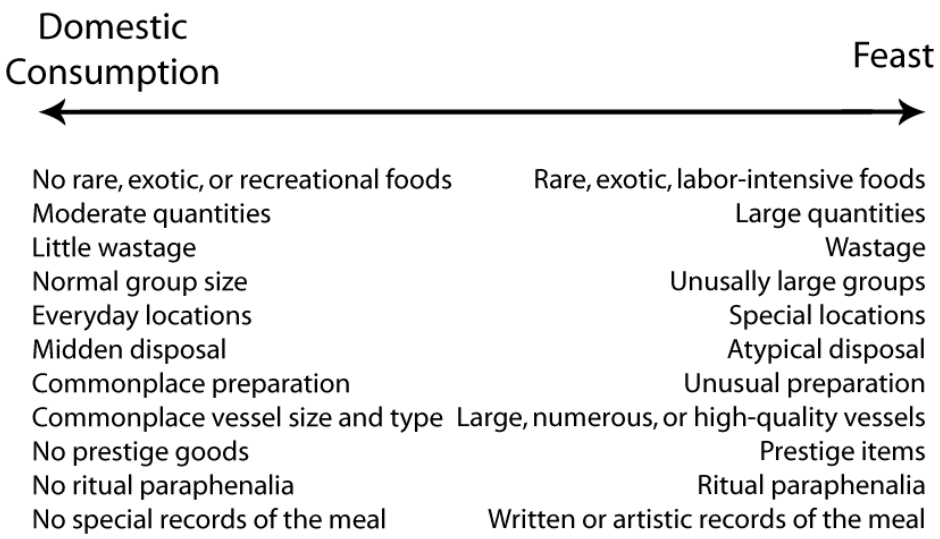

Figure 6.1. The continuum between domestic consumption and feasting including the common archaeological indicators of both extremes (after Twiss 2007:Table 3-1).

between large groups at special places and using special tools and materials in special ways. Other events are clearly everyday affairs characterized by moderation in food type and quantity, people involved, and all other aspects of preparation, consumption, and disposal. Moreover, because of these characteristics, everyday meals have certain social outcomes and effects, while feasts have others (Twiss 2007:53-54; see also Hayden 2001).

I find Twiss's conception of these differences as falling along a continuum to be more satisfactory than any attempt to dichotomize the distinction into *non-feasts* and *feasts*, or even non-feasts, empowering feasts, patron-role feasts, and diacritical feasts (Dietler 1996). However, I remain unsatisfied with her conception. Although she lists likely archaeological correlates of the two ends of her continuum and discusses their potential social ramifications, middle-ground cases remain problematic. These cases combine attributes of domestic consumption and feasting and are thus share material and social consequences as well. This severely limits the interpretive potential of Twiss's model. For example, cases exist in which a small number of people share foods on an important occasion, thereby conferring prestige

on the host (e.g., Hammond 1993; Strong 2002; Windham 2011:24-25). Likewise, large numbers of people sometimes gather for communal eating with little to no evidence of status negotiation (e.g., Knight 2001; Potter and Ortman 2004). As expected, these events leave different archaeological signatures and have different social outcomes, but in Twiss's conception, each would fall into the middle of the spectrum and further differentiation would be impossible. In other words, the continuum model recognizes the existence of middle-ground events, but does not have the explanatory power to convey very much about them. My scheme attempts to differentiate these middle-ground cases in a useful way. This aim is complicated, however, by the presence of multiple dimensions that do not always vary in tandem.

In reviewing the array of events defined as feasts in the archaeological and ethnographic literature, I noted an emphasis on two characteristics: (1) the size of the group involved (as seen through the abundance of food remains, number and size of vessels, magnitude of dining locations, etc.) and (2) the level of sociopolitical competition taking place (as seen through differential consumption and resultant differences in wealth and sociopolitical status). I have adapted Twiss's model to increase its utility for archaeological applications by include these two axes of variation. In my conceptualization, each individual eating event is measurable in two dimensions: (1) *group size* (GS, ranging from small to large) and (2) *level of sociopolitical competition* (SC, ranging from low to high). With these two dimensions represented as axes that define a two-dimensional space, the location of an eating event is determined by its position along both continua and will fall in one of four quadrants (Figure 6.2). These quadrants can be roughly defined as representing: *small domestic meals or snacks* (small GS, low SC); *competitive events with limited attendance*

(small GS, high SC); *large-scale, egalitarian communal events* (large GS, low SC); and *large-scale, competitive events* (large GS, high SC) (Figure 6.3).

The trait lists at each end of Twiss's continuum can then be split between the two dimensions (Figures 6.4 and 6.5). Although this division is not flawless, the ease with which it could be made testifies to the fact that Twiss's continuum combined two distinct ranges of variation. The presence of a single characteristic from one list does not identify high or low group size or level of sociopolitical competition, but rather they are tools to evaluate if the evidence from a given event is weighted towards one interpretation over the other.

The main archaeological indicators on the GS dimension are quantity of food and vessel capacity. Clearly, more people require more food and thus more or larger pots in which to store, prepare and serve that food (Blitz 1993; Hayden 2001; Potter and Ortman 2004; Ralph 2007; Van Keuren 2004). Though preservation bias must be taken into consideration with questions of relative quantity, such differences are often readily identifiable as large and rapidly deposited clusters of material. In the feasting literature, food quantity and vessel capacity are frequently lumped with the presence of rare or labor-intensive foods,[1] unusual cooking styles,[2] and/or special or high-quality vessels.[3] I however, have positioned these characteristics as markers of high sociopolitical competition. It is important that these traits be kept separate as many documented feasts use large quantities of

[1] Such as high proportions or different cuts of meat (Blitz 1993; Bray 2003; Jackson and Scott 2003; Kelly 2001; Knight 2004; Pauketat et al. 2002; Potter and Ortman 2004; Ralph 2007), uncommon, out of season, or hard to process resources (Hayden 1996; 2001; Van der Veen 2003), or recreational substances (Ralph 2007; Wills and Crown 2004).

[2] Such as specialized preparation to create differences in taste, aroma, appearance, etc. (Hayden 1996; 2001; Van der Veen 2003) or inherently unequal cooking and distribution methods such as roasting instead of boiling meat (Potter and Ortman 2004).

[3] Such as fine wares (Hayden 2001; Smith 2003; Smith et al. 2003), unusual decorative styles (Hayden 2001; Smith 2003; Smith et al. 2003), or trade wares (Hayden 2001; Potter and Ortman 2004; Smith et al. 2003; Spielmann 2004).

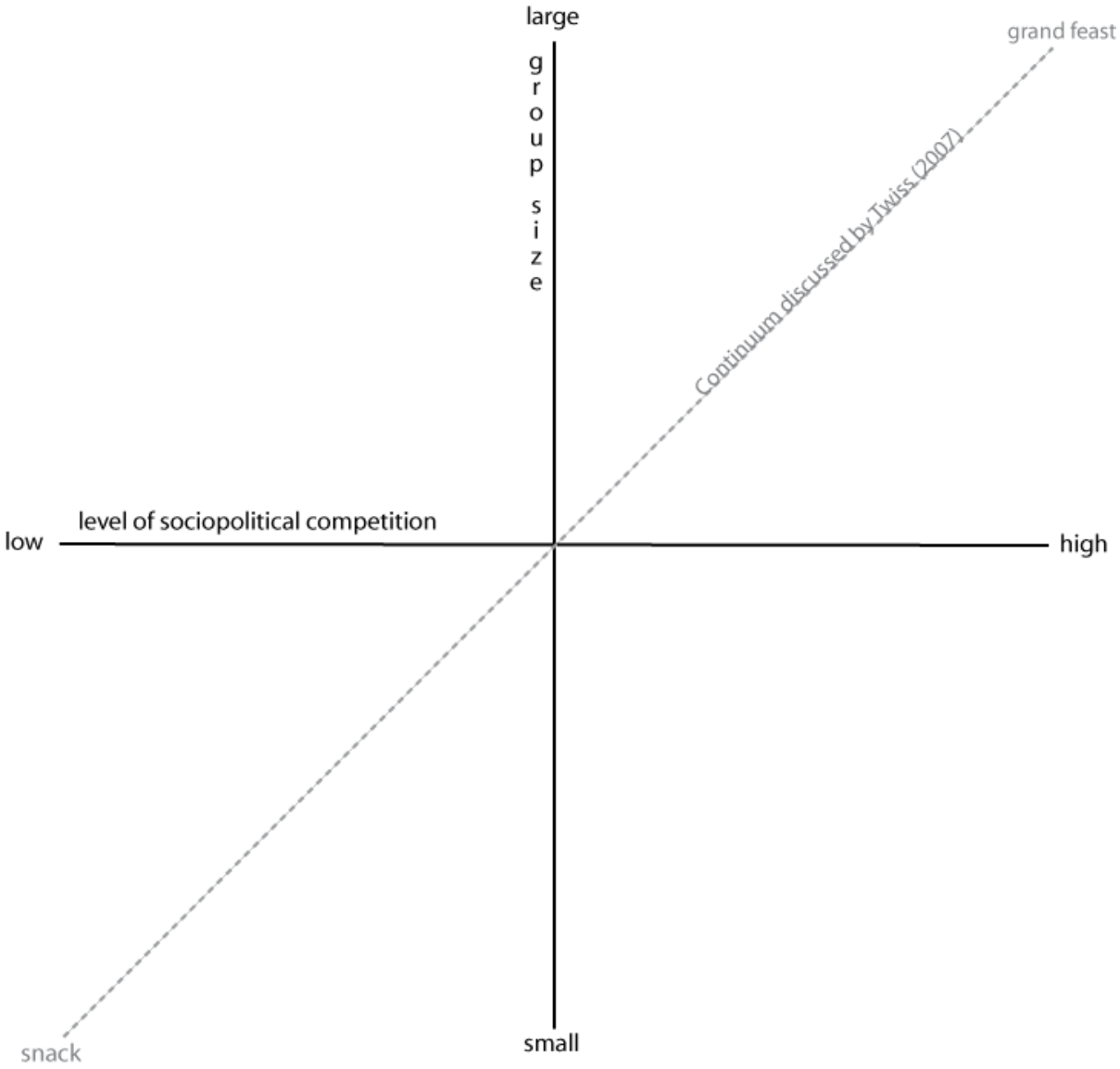

Figure 6.2. New conceptualization of the variety of eating events that ranks each event on a scale of small to large group size and high to low degree of sociopolitical competition.

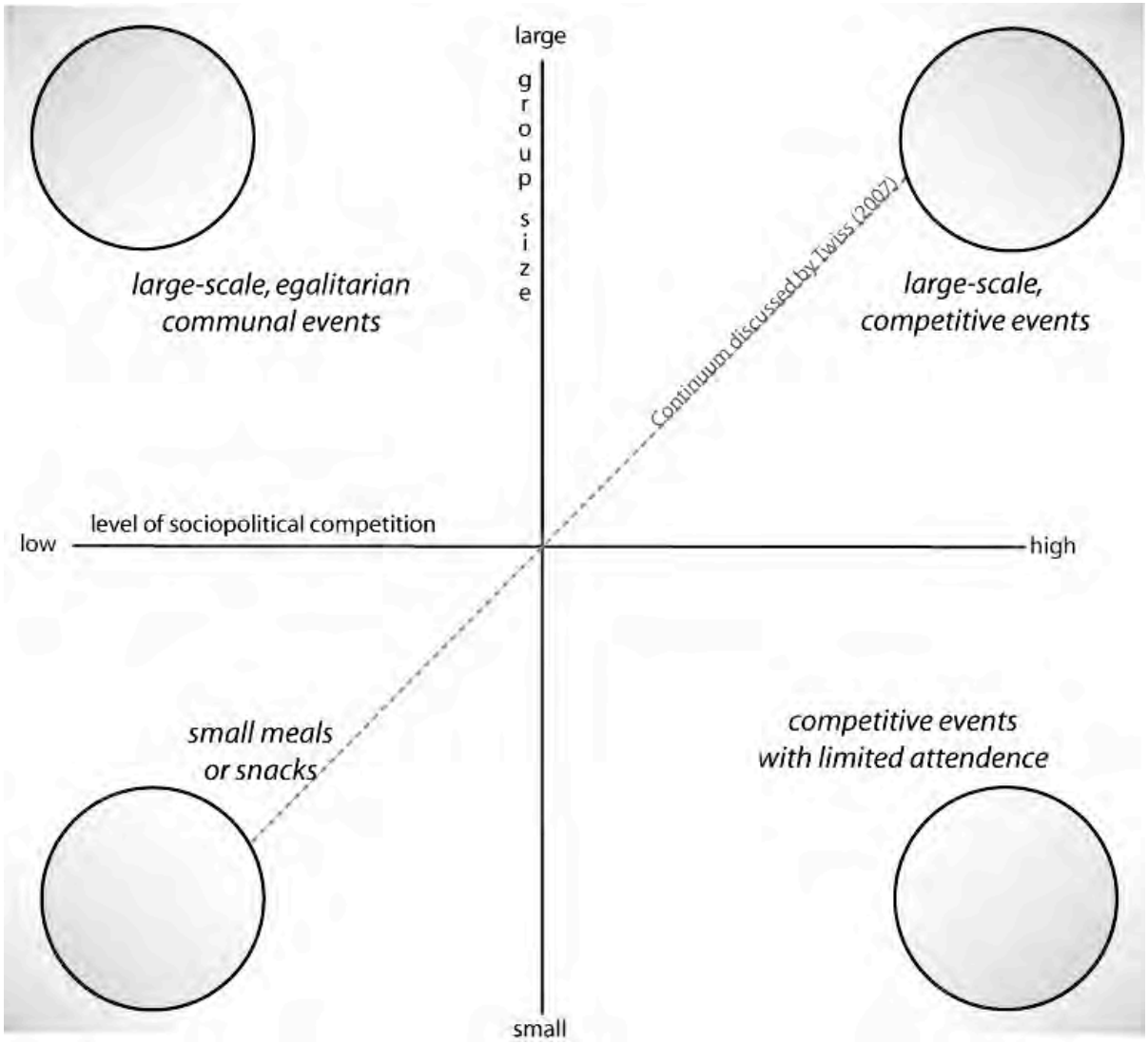

Figure 6.3. New conceptualization showing general categories of eating events as they would be placed on the axes.

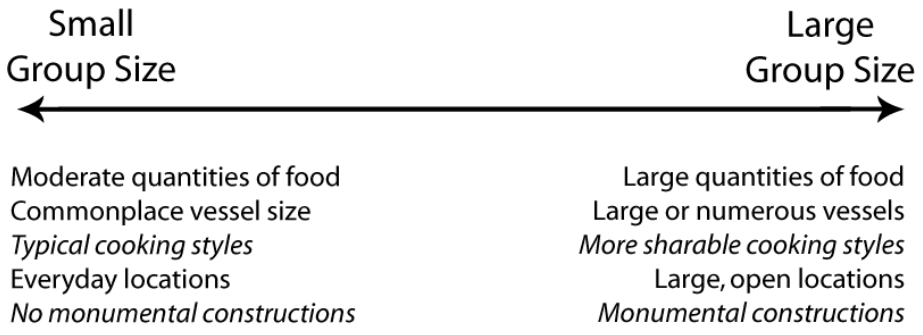

Figure 6.4. The group size continuum with archaeological correlates listed at either extreme. Twiss's (2007) list of associated characteristics is in plain text and additional characteristics proposed by others are in italics.

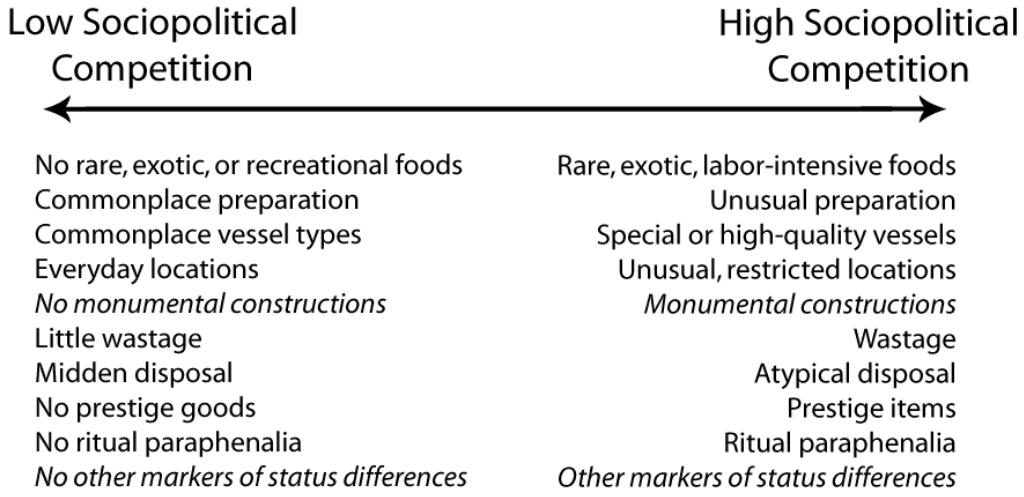

Figure 6.5. The level of sociopolitical competition continuum with archaeological correlates listed at either extreme. Twiss's (2007) list of associated characteristics is in plain text and additional characteristics proposed by others are in italics.

everyday foods and tools (Potter and Ortman 2004; Van der Veen 2003; VanDerwarker et al. 2007; Van Keuren 2004).

Unusual event locations[4] can be associated with either dimension. As a group gets larger, eating within the normal domestic context will no longer be possible and special locations will have to be used. Likewise, as sociopolitical competition becomes more explicit, the organizer of the feast may want to remove the event from the everyday landscape. Related to this discussion of location is the presence or absence of monumental constructions (such as mounds, enclosures, large public buildings, etc.) at feasting sites (Dietler 1996; Knight 2001; Pauketat et al. 2002; Ralph 2007). Monumental constructions at a site are often interpreted as signs of hierarchy (and thus also the competitive and self-aggrandizing behaviors commonly associated with this type of sociopolitical organization). However, as I discuss in more detail later in this chapter, societies lacking a system of sociopolitical differentiation and without significant evidence for status-seeking behaviors have been shown to be both interested in and capable of amassing the labor and other resources needed to produce monumental constructions. There is abundant evidence that these constructed landscapes were social spaces used for public rituals aimed at emphasizing inclusiveness and shared interests (Barrett 1994; Bender 1998; Bradley 1991; Phear 2007). Moreover, by definition, monumental constructions require a labor force beyond that of the household unit (Bradley 1985:2; Dietler 1996:104-105; Trigger 1990:119). In light of these characteristics, I identify monumental constructions as markers of large group size in addition to high levels of competition.

[4] Such settings can be abnormally large, open or unroofed, surrounded by areas of food preparation, unusual in layout and/or design, or restricted in access (Cook and Glowacki 2003; Hayden 2001; Potter and Ortman 2004; Ralph 2007).

The rest of the characteristics utilized by Twiss fall along the sociopolitical competition dimension. Wastage,[5] atypical disposal,[6] and other conspicuous displays of wealth are commonly associated with status negotiation because squandering material goods sends the message that one has so much that (s)he need not value it as much as others (Hayden 2001:40-41; Ralph 2007:41, 44). Prestige goods, ritual paraphernalia, and other status indicators such as elaborate burials, institutionalized site hierarchies, craft specialization, aggressive warfare, and elite houses belong on the competitive dimension because their use and meaning is explicitly tied to the display of power (Blitz 1993:92; Hayden 1996:140-141; 2001:40-41; Kirch 2001:180; Knight 2004:309-311; Ralph 2007:33-34; Smith et al. 2003:241).

Most archaeological and ethnographic accounts of feasting clearly focus on the political and economic roles of feasts in creating power and/or status differences among the people participating (e.g., Dietler 2001; Mills 2004; Pollock 2003; Wiessner and Schiefenhövel 1996). In a feast characterized by large quantities of everyday things, however, one may expect that the social outcomes would not be drastically different from those negotiated in everyday life. Thus feasts in more egalitarian communities may have reinforced a sense of group cohesion and equality. While many authors recognize that both effects—increasing solidarity among a community *and* emphasizing differences among its members—may happen simultaneously, primacy of both effect and intention is generally given to the latter (e.g., Blitz 1993; Bray 2003; Dietler 1996; Dietler and Hayden 2001; Gero 2003; Goldstein 2003; Hendon 2003; Pollock 2003; Smith et al. 2003; cf. Knight 2001).

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[5] Such as animal sacrifice, ritual "killing" of vessels, the deliberate throwing away of edible portions, destruction of personal property, etc.

[6] That said, atypical disposal could also be due to the need to dispose of ritually important garbage in specific ways.

Though some researchers have recognized this bias and worked to bring communal, non-competitive feasting into our larger theoretical discussions (Potter 2000; Potter and Ortman 2004; Spielmann 2002; Van der Veen 2003), their attempts have been only mildly successful because accepted definitions often include political or status-seeking behavior as part of what defines a feast. To truly eliminate this bias, we must "be careful not to confuse diacritical [competitive] feasting practices with the kinds of practices that may be used to differentiate feasts in general, as public ritual events, from everyday informal consumption" (Ralph 2007:13). Separating the competitive dimension from that of scale alleviates this issue and allows non-competitive, large-scale eating events to be readily classified as feasts.

Central to the development of this model is the idea that "not all feasts are created equal" (Potter 2000:47; Ralph 2007:83); the examples discussed in the following section demonstrate the variability inherent in the concept. My conceptualization increases the specificity with which we can interpret the archaeological signatures of different feasting events. Any given feast (be it a feast due only to large group size, a high level of sociopolitical competition, or both) would likely have the effect of both emphasizing the similarities among people *and* marking differences in status, wealth and power; however, which of these aspects is emphasized can change (Potter 2000:475). As the social goals of feasting change, so will the means by which one may reach these goals, leaving behind different archaeological signatures. By recognizing and explicitly focusing on this variation, I believe that my model will allow us to see the importance of a large category of feasts that are under-theorized in archaeology—those whose underlying purpose is to build community and increase solidarity within a group.

Applying the Model Archaeologically

This model can be used in two distinct ways. First, the characteristics associated with the two dimensions can be used to identify which contains the most variation at a particular site. Given the degree to which the deposit differs from "normal" on each dimension, the researcher can interpret what the likely social outcomes of the event may have been. Second, the two-dimensional model can be used as a framework for comparison.[7] In order to illustrate its utility, I have added thirteen archaeological and ethnographic cases to the axes defined by group size and level of sociopolitical competition (Figure 6.6). The position of each case was determined by the degree to which the archaeological or ethnographic evidence supported the presence the characteristics listed in Figures 6.4 and 6.5. Tables 6.1 and 6.2 show one scored example from each quadrant.

In the quadrant characterized as *small meals or snacks*, ethnographic examples abound as all societies consume moderate amounts of food on a daily basis for sustenance. I have included an account of a 1950s American weekday breakfast as an ethnographic example and Twiss's (2007:57-61) discussion of domestic consumption during the Pre-Pottery Neolithic B (PPNB) as an archaeological one. Archaeological evidence from the PPNB suggests that eating was an individual household activity showing little evidence of being tied into the broader political and ceremonial life of the communities. That said, because of the larger size of households and the inherent differences in status among household members, the PPNB case study sits above and slightly to the right of the American breakfast.

[7] Moreover, a society for which the social meaning of feasts is fairly well understood (e.g., via a robust ethnographic record) can be placed on the axes and then the characteristics of each continuum can be used to make an educated guess about what material signature may be left behind.

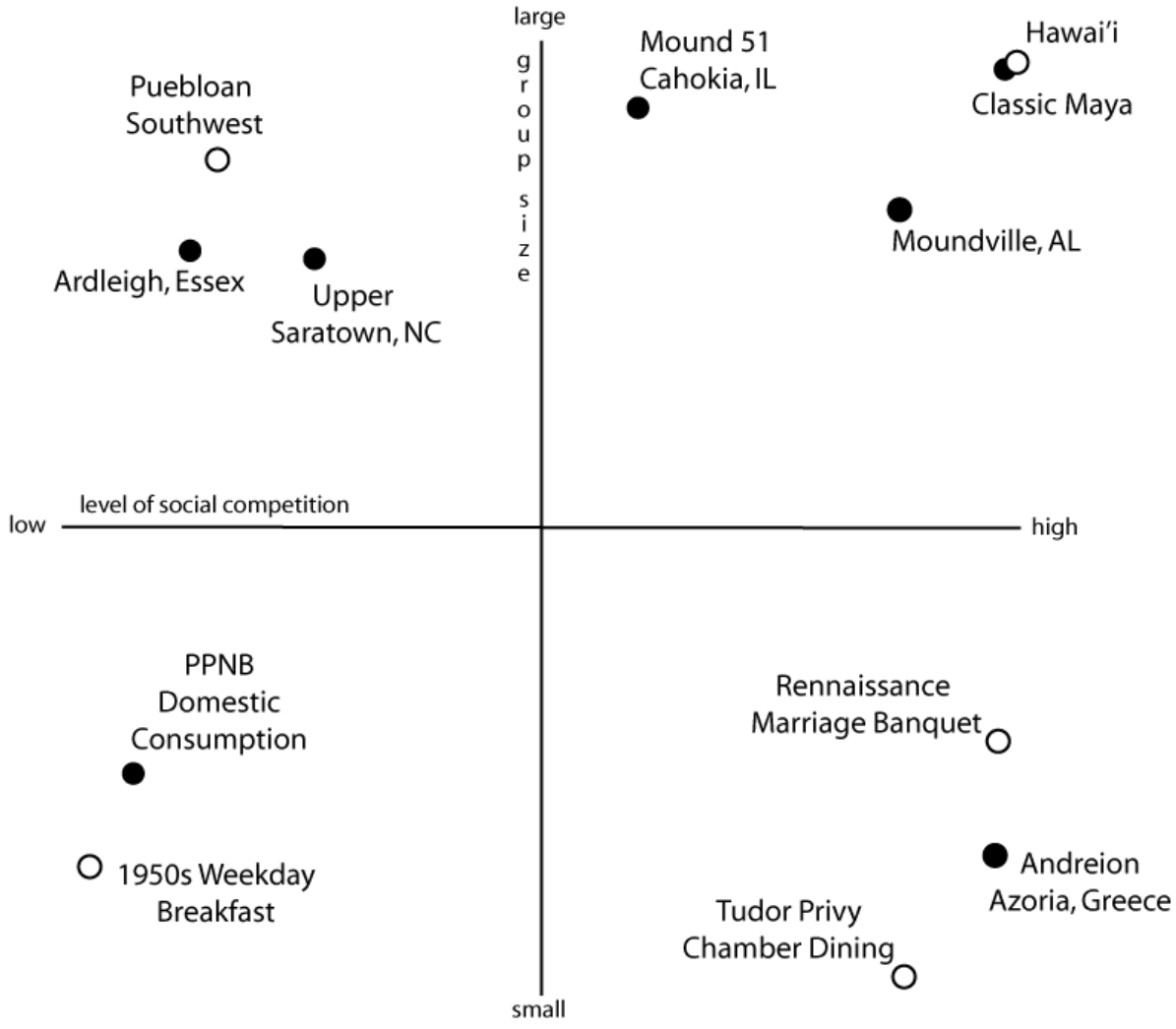

Figure 6.6. New conceptualization showing specific ethnographic (open circles) and archaeological (closed circles) examples of eating events as they would be placed on the axes given the characteristics listed in Figures 6.2 and 6.3. Placements of the individual eating events are based on the data presented in Bossard and Boll (1950), Haggis et al. (2011), Jackson and Scott (2003), Kelly (2001), Kirch (2001), Knight (2004), LeCount (2001), Mills (2004), Pauketat et al. (2002), Potter (2000), Potter and Ortman (2004), Ralph (2007), Strong (2002), Twiss (2007), Vanderwarker et al. (2007), and Welch and Scarry (1995).

Table 6.1. This table shows the process by which events were placed along the group size continuum for one case per quadrant. Each case was given a score of 1 (very low), 2 (low), 3 (medium), 4 (high), or 5 (very high) for each characteristic listed in Figure 4. These scores were then averaged and that average determined the event's placement in Figure 6.

	1950s Breakfast	**Tudor Privy Chamber Dining**	**Puebloan Southwest**	**Classic Maya**
Food Quantity	1	2	4	5
Vessel Size	2	2	5	4
Cooking Style	2	1	5	4
Location	1	1	4	5
Monumental Constructions	1	2	3	5
Average GS Score	1.4	1.6	4.2	4.6

Table 6.2. This table shows the process by which events were placed along the sociopolitical competition continuum for one case per quadrant. Each case was given a score of 1 (very low), 2 (low), 3 (medium), 4 (high), or 5 (very high) for each characteristic listed in Figure 5. These scores were then averaged and that average determined the event's placement in Figure 6.

	1950s Breakfast	**Tudor Privy Chamber Dining**	**Puebloan Southwest**	**Classic Maya**
Food Types	1	4	1	5
Preparation	1	4	2	5
Vessel Types	1	4	2	5
Location	1	3	2	5
Monumental Constructions	1	2	3	5
Wastage	1	-*	1	-*
Disposal	1	-*	2	3
Prestige Goods	1	5	1	5
Ritual Paraphernalia	1	5	1	5
Status Markers	1	5	1	5
Average SC Score	1.0	4.0	1.6	4.8

*No data available at this time, discounted from average.

In the quadrant described as *competitive events with limited attendance*, I have included two historic accounts of royal feasts in monarchies—a Renaissance marriage banquet and Tudor privy chamber dining. Artists' renditions of Renaissance banquets include impeccably decorated rooms and credenzas covered with vases, cups, platters, and other dishes. These elaborate and unusual forms, plated in silver and gold, were rarely, if ever, used (Strong 2002:163-165). In some cases, three feasts were thrown as a part of royal nuptials; the marriage feast itself was not widely attended, but the status of the individuals that did attend was paramount and determined everything from seating arrangement, to serving ware, to dinner entertainment (Strong 2002:174-175). Even more private, and thus appearing lower on the diagram, are the meals taken by Tudor kings in their privy chambers. Often the monarch ate entirely alone with servants and a buffet of lavish foods (Strong 2002:204-207). Finally, the Civic Dining Complex at Azoria, Crete provides an archaeological example of this type of event. Attendance at events in the Civic Dining Complex was limited such that the relatively small dining halls functioned as a materialization of hierarchical relationships within the city. It housed rare and luxurious foods and aristocratic status items, such as ceremonial drinking and eating wares and armor (Haggis et al. 2011).

Representing the *large-scale, egalitarian communal events* quadrant is the ethnographic example of the Puebloan Southwest. Many archaeological examples from the Southwest would also fit in this category (e.g., Potter 2000; Potter and Ortman 2004). At Puebloan feasts, food is contributed anonymously by masked kachinas (Potter and Ortman 2004:174), thereby eliminating the chance that donating may lead to social mobility. At times, the debt incurred by the feast-givers served to actually *lower* their status (Potter

2000:476). Highly structured by a ritual cycle, the feast's primary purpose was to redistribute food resources and facilitate social integration (Mills 2004; Potter 2000). Likewise, when discussing the site of Ardleigh in Essex, Ralph (2007:41) states that holding a feast would have "represented a conscious effort to create alliance and community 'spirit' among the inhabitants of the site." She makes this determination based on a lack of evidence for status-seeking behavior alongside everyday materials showing up in very large quantities and the construction and maintenance of monumental architecture. A second archaeological example comes from Upper Saratown in North Carolina (VanDerwarker et al. 2007). In the case of this relatively non-hierarchical society, plant-based feasting foods differ from normal consumption only in the amount present. However, the ability of a family or individual to provide choice cuts of meat or entire animals may have led to some degree of status differentiation.

Finally, there are many examples I could choose to place in the *large-scale competitive events* quadrant because this is the category most frequently discussed in the feasting literature. My primary example from this quadrant is the Classic Maya feast at Xunantunich during which specialized vessels and the distinctive foods they display and serve—for example, chocolate—were used by powerful elites to create and maintain power (LeCount 2001). Kirch's (2001:177-180) summary of traditional Hawaiian feasting provides an ethnographic example of this type of feast; in the highly stratified Hawaiian culture, feasting was a practice limited to elites and occurred only in restricted venues. In addition to large numbers of people and concomitant amounts of food, these feasts involve the consumption of prestige foods such as prized fish species, pork, and dog. Archaeological examples from North America exist as well, but are placed below and to the left of these

examples. Jackson and Scott (2003), Knight (2004), and Welch and Scarry (1995) all identify elite feasting deposits at Moundville in Alabama through the presence of large middens filled with rare foods, and large, high-quality vessels at special locations, associated with abundant ritual and prestige items. However, neither the population size nor level of competition matches the Mayan or Hawaiian examples. Mound 51 at Cahokia provides yet another example of large-scale feasting with some degree of competition (Kelly 2001; Pauketat et al. 2002). While the amount of material in the Mound 51 borrow pit, the speed with which it was deposited, and the assumed population of Cahokia place it very high on the group size dimension, the level of sociopolitical competition is more ambiguous. Most of the remains differ very little from normal domestic refuse, but the presence of ritual materials such as quartz, painted pots, special woods, swan bones, and tobacco certainly differentiate it and suggest the participation of both low and high status community members. Mound 51 sits near the middle of the sociopolitical spectrum because it was "simultaneously low status and high status or communal and political … a blend of the ordinary and the extraordinary" (Pauketat et al. 2002:276).

Feasting at Feltus

In many of the cases described in the previous section, a great deal is known about the society in question; however, Feltus provides an example of a situation where our understanding of the society in which the feast is taking place is lacking and may be helped significantly by comparison with similarly placed, but better understood, sites. Our excavations at the site have uncovered ample evidence of feasting. From the Sundown phase occupation of Feltus there is a large midden pit in the Mound D area (Feature 4) and an

expansive and thick midden overlaying it. The character of these refuse deposits suggests rapid dumping, with large, uninterrupted fill episodes, numerous pot breaks, and portions of articulated animal skeletons. During the early Ballina phase, the final depositional episode in A1.S0 may represent feasting occurring just before the first construction episode on Mound A. Large barbeque pits on A.S2 and the deposition of A2.S0 indicate that feasting certainly continued at Feltus after mound construction began. A dense midden on B.S4, a flank midden at the base of Mound C, and a midden in the bottom of a borrow pit in the Mound D area may indicate that large-scale food consumption continued into the Balmoral phase. Analysis of the materials from these deposits (see Chapters 3, 4, and 5) revealed much about the characteristics listed in Figures 6.4 and 6.5 and can be used to place the site on the axes defined in Figure 6.2. In this section, I will look at the ceramic, food, and ritual remains from both at the Feltus assemblage as a whole, and at those from the Mound D area deposits and the A2 midden specifically as the two most confidently identified feasting deposits.

Ceramic Remains

The decorative types and varieties represented in the feasting contexts at Feltus do not differ dramatically from what is found on any early Coles Creek site and show no consistent difference in quality of manufacture. The *size* of the vessels, however, stands out. While orifice diameter measurements[8] indicate that the range of typical Coles Creek vessel sizes (i.e., 8 to 35 cm) are present in the Feltus assemblage, a substantial number of exceptionally large vessels (i.e. greater than 40 cm) are also included (see Figure 4.15). These vessels fall outside the normal range for a domestic site and indicate communal eating. When the Mound

[8] Because height-to-width ratios could not be determined from most sherds, orifice diameter is applied here as the best available indicator of vessel size. It should be noted that using orifice diameter and only measuring those sherds that represent more than 5% of the vessel rim statistically underrepresents large vessels.

D area deposit is considered separately, the histogram of rim diameters shows a similar trend (Figure 6.7). The pattern in A2.S0 is slightly different (Figure 6.8); most vessels fall between 8 and 35 cm, but they are more weighted towards the large end of this spectrum. Combined with the presence of five exceptionally large vessels, including the largest vessel identified at Feltus (53 cm), this context has the second highest average vessel size at Feltus (see Table 4.7). Thus, Feltus in general, and the feasting contexts specifically, have larger than normal vessels displaying typical Coles Creek decorative motifs and mode of manufacture.

Vessels forms represented in the Feltus assemblage include bowls, restricted bowls, jars, and beakers—all common on Coles Creek sites. As is typical of early Coles Creek sites, nearly 50% of the Feltus assemblage consists of bowls. When the feasting deposits are examined separately, bowls make up 56% of the Mound D area assemblage and 67% of the A2.S0 assemblage. While bowl counts from Feltus as a whole are on par with other early Coles Creek sites, the numbers from the feasting contexts are distinctly higher than would be expected from a domestic site and indicate a strong emphasis on serving. Cooking vessels occur in reasonable quantities at the site, but storage vessels are only present in the A1.S0 assemblage. The lack of commensal animals at Feltus also suggests this lack of storage and long-term, open trash deposits.

When vessel size and vessel form data are combined, the character of the Feltus feasting becomes clearer. Layered histograms of rim diameter measurements for the entire Feltus assemblage and for the bowl assemblage show that bowls make up a fairly consistent percentage of the total vessel count through 30 cm; but after 30 cm, bowls dominate (Figure 6.9). This would be the expected assemblage if Coles Creek people were living (and thus storing and maybe even preparing food) in scattered homesteads and gathering at Feltus only

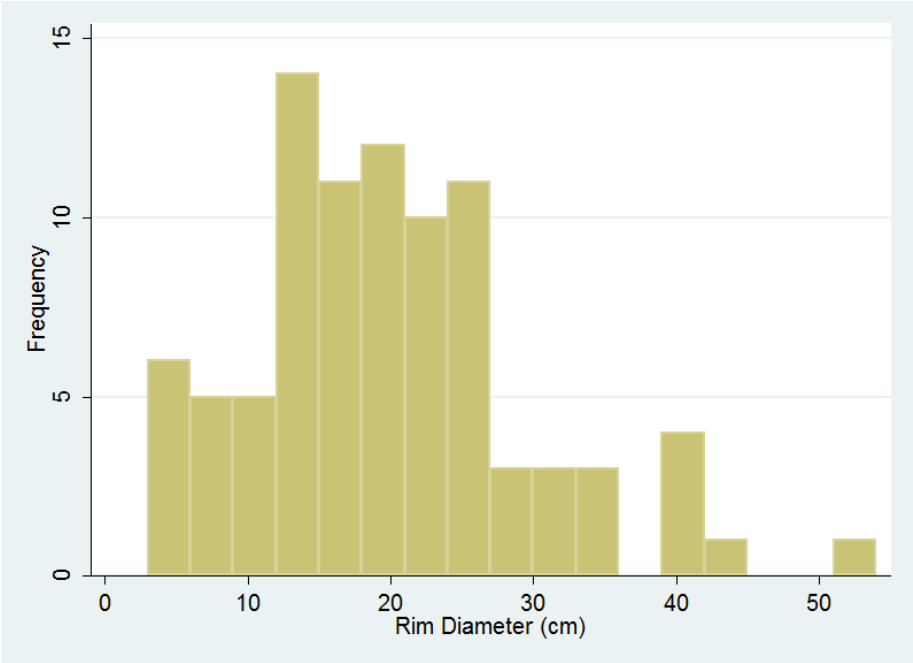

Figure 6.7. Histogram of rim diameters for the South Plaza feasting contexts (n = 89) showing a large group of vessels with rim diameters between 5 and 35 cm and two groups of exceptionally large vessels with rim diameters about 40 and 50 cm respectively.

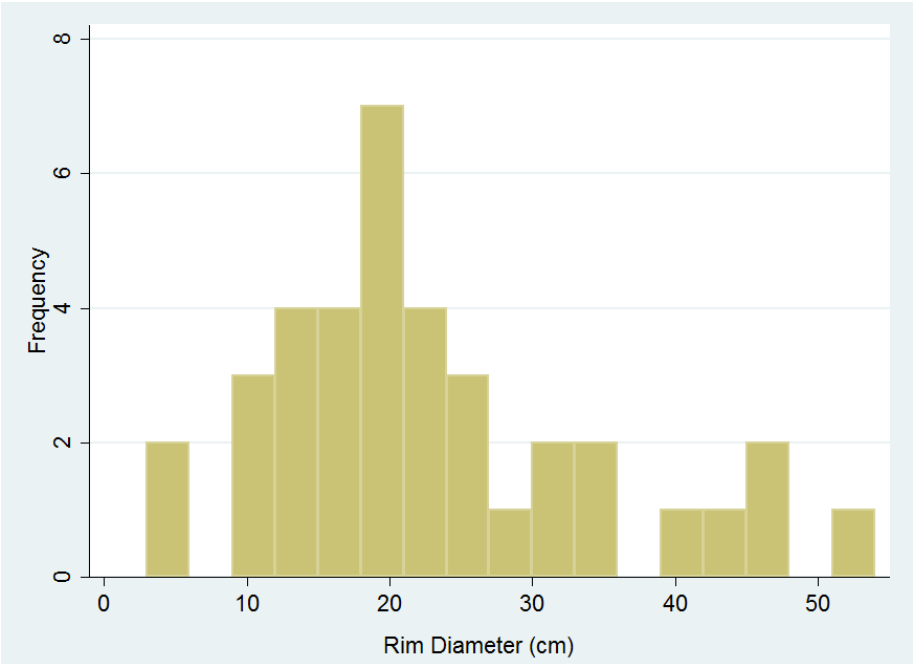

Figure 6.8. Histogram of rim diameters for the A2.S0 feasting context (n = 37) showing the a normal distribtuion of vessel sizes between 10 and 30 cm in diameter and three possible groups of large vessels with rim diameters about 30, 40, and 50 cm respectively.

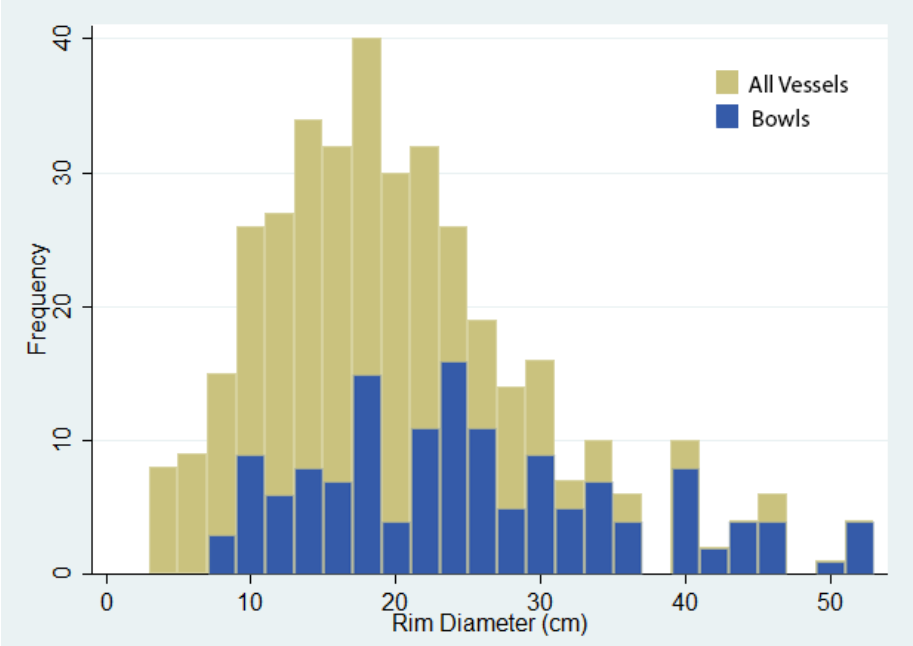

Figure 6.9. Layered histograms of all Feltus vessels (yellow) and Feltus bowls (blue), showing that bowls make up a consistent percentage of the vessels up until about 30 cm, after which they dominate the assemblage.

occasionally for communal events including feasting. The fact that the most dramatic patterns relate to the size and form, not the style or quality, of the vessels at Feltus suggests a high GS and low SC score.

Food Remains

When compared to Coles Creek domestic sites, Feltus has a similar botanical assemblage showing heavy reliance on nuts and seeds. However, there are also differences between Feltus and other analyzed Coles Creek assemblages. The Feltus plant assemblage shows heavy reliance of easily amassable resources (i.e., acorn, hickory, and weedy plants) and resources high in protein and fat (i.e., oily nuts and seeds), and a somewhat low reliance on fruit. Like most early Coles Creek sites, the Feltus data suggest dependence largely on wild resources, but morphological changes in chenopod (and the presence of other Eastern

Agricultural Complex seeds) indicate some of the earliest known use of cultivated plants in the LMV. When feasting contexts are considered independently, they show less plant diversity (see Figure 5.2) than demonstrated by the site overall and exhibit a stronger than expected focus on nut resources (see Figures 5.4 and 5.6). Combined, this evidence suggests that while people at Feltus consumed roughly the same plants as other Coles Creek populations, they may have been focusing on favored resources that were easy to amass and store in bulk.

Over 12,000 animal bones were recovered from the feasting contexts at Feltus including twelve mammal, two bird, seven reptile, two amphibian, and nineteen fish taxa. Though the animals identified at Feltus are common at most Woodland period sites, the assemblage is in no way representative of the high faunal diversity typical of the LMV. Specifically, the count and diversity of medium and small mammals is remarkably low, while the identified number of large mammals, primarily bear and deer, is quite high. Outside of these large mammals, very large examples of gar, sucker, and catfish dominate the assemblage, including numerous specimens over 1.5 m long. A lower tier of animal resources relied upon at Feltus includes rabbits, squirrels, turtles, and turkeys, all species that are relatively easy to capture in large quantities. This overrepresentation of large animals, general low diversity of other classes, and emphasis on easily amassable resources is again suggestive of feasting. This interpretation is further supported by secondary analyses of the D2 midden deposit. Low overall utilization of the deer carcasses indicates that meat extraction was the primary goal, not marrow or grease extraction or bone tool production. Likewise, element distribution ratios for deer suggest a focus on meat consumption as larger cuts of meat may have been being favored.

Ritual Remains

The ceramic, floral, and faunal data from the Feltus middens thus support a model of feasting that focuses on bringing together large quantities of more-or-less everyday things at a central location. For the most part, the assemblage does not include particularly rare, exotic, or labor-intensive foods, especially high-quality vessels shaped or decorated in distinctive ways, or overt prestige items. In others words, it is the sheer *amount* and *size* (rather than the *nature*) of the materials at Feltus that indicate feasting. That said, a few unusual and presumably ritual items are associated with the middens and will be discussed in more detail here.

The ritual use of plants at Feltus is suggested by the presence of nightshade, morning glory, sumac, pokeweed, and other plants that may have had medicinal or ritual rather than dietary uses. Moreover, as suggested by Fritz (2014), maygrass (and potentially other plants often considered dietary staples) may also have played important roles in pre-maize ritual events. Finally, while only a single possible tobacco seed has been identified from the Feltus samples, fragments of over twenty pipes have been identified from the feasting deposits and are concentrated in the D2 midden and A2.S0. Comparatively, pipes are infrequent in domestic assemblages. Whether Coles Creek people were smoking tobacco or some other plant in these pipes, it is likely that the act of smoking played a major role in the rituals associated with the feasting. In most accounts of Native groups in the eastern woodlands, the act of smoking together signifies or creates an important bond among a community of people and helps to facilitate interactions between groups by concealing apparent differences and making strangers into temporary kin (Rafferty and Mann 2004; Springer 1981; Steinmetz 1984).

An even more compelling case for the ritual inclusion of plant and animal species at Feltus comes from the relative abundance and unusual treatment of bear bone at the site. When archaeologists excavate deposits of animal bones, they tend to focus on that animal's utilitarian and economic roles. However, the prevalence of bear remains in the feasting deposits, the fact that they are repeatedly treated differently from other game at Feltus, and their inclusion with human remains in at least one context suggests the bears played a significant social role in Coles Creek society (Nelson and Kassabaum 2014). While this did not preclude the bears from being eaten, it does suggest that Coles Creek people, like many hunter-gatherer societies, existed in relational ontology (*sensu* Hill 2013) with animals.

Since Paleolithic times, bears have been potent ritual symbols for peoples throughout Eurasia and North America. Though the details of these stories change based on context, the meaning of bear has stayed remarkably constant (Bieder 2006; Black 1998; Hallowell 1926; Rockwell 1991; Shepard and Sanders 1985). The geographic and temporal span of these belief systems implies that they have great time depth. Perhaps most important here, bears are food providers (Bieder 2006:164; Berres et al. 2004:10, 22; Black 1998:343; Rockwell 1991:26-27). In many American Indian cultures including some from the South, they are seen as giving themselves willingly to hunters[9] and thought to control all game animals and thus the success of future hunts.[10] Their meat is generally consumed in communal feasts emphasizing fellowship between the participants.[11] In addition to providing themselves and other game as meat, bears quite literally guided humans in the collection of edible plants (Shepard and Sanders 1985:72-73). Finally, stories often depict bears as producing food from

[9] Alabama (Lankford 2011:123); Cherokee (Mooney 1900:327-329); Cree (Rockwell 1991:26; Skinner 1914)

[10] Mesquakie (Owen 1904:55)

[11] Ainu (Hallowell 1926:111-122); Montagnais-Naskapi, Wabanaki (Hallowell 1926:67-68)

their very bodies by rubbing their stomachs and producing nuts and berries or extracting grease from their fat without being harmed.[12] The connection between bears and feasting is thus an understandable one.

Moreover, "many preagricultural groups saw the bear as a person, albeit a different-from-human person who possessed immense spiritual power" (Bieder 2006:163). In addition to striking skeletal and muscular similarities, bears have many behavioral characteristics often considered uniquely human. Bears walk on two feet, construct dwellings, eat the same foods in roughly the same proportions as humans, and have a voracious sweet tooth (Berres et al. 2004:8; Black 1998:345; Hallowell 1926:148-152). Traditional accounts further suggest that bears react emotionally in human-like ways—they cry tears, spank their children, and moan and sigh when worried or upset (Hallowell 1926:148-152; Shepard and Sanders 1985:xi). For these reasons, among others, ethnohistoric accounts repeatedly portray bears as kin or ancestors.[13] Many Native origin myths claim descent from bears (Bieder 2005:54; Rockwell 1991:116-128) and in many of these traditions, bears are referred to as "grandmother," "brother," or "cousin" out of respect for that kinship (Hallowell 1926:43-49; Rockwell 1991:33; Shepard and Sanders 1985:88-89). Even if direct descent is not claimed, humans often share family relationships with bears through marriage and sexual relationships (Bieder 2006:168; Loucks 1985).

Beyond their roles as kin or ancestors, bears play other social roles generally reserved for human members of society, such as healers or spirit guides (Black 1998:345). Bear doctors are common in Native cultures and bears are often depicted on pipes and other

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[12] Cherokee (Mooney 1900:273-274, 327-329); Lummi (Lake-Thom 1997:54-57); Pawnee (Dorsey 1904:189-191; Rockwell 1991:71-72)

[13] Cherokee (Rockwell 1991:264); Chitimacha (Swanton 1929:354); Modoc (Bieder 2006:166); Yuchi (Rockwell 1991:107)

paraphernalia used in ceremonies focused on healing.[14] These abilities may be linked to the fact that some human societies may have learned traditional medicine from watching bears self-medicate with gathered plants, many of which are now known by names including the word "bear" (Rockwell 1991:77; Shepard and Sanders 1985:99-103). Moreover, bears are broadly seen as having life-renewing abilities because their hibernation pattern indicates an ability to circumvent and/or control the yearly pattern of death and rebirth.[15]

The specific nature of the bear remains at Feltus strengthens the connection between these stories and the archaeological record. Because large animals were usually butchered where they were killed, large bones and those of the axial skeleton are rarely found on archaeological sites. The presence of bear leg bones and vertebrae at Feltus thus suggests that bears were not being used only for their meat, but rather that their death and burial may have played a part in the ceremonialism associated with the feasts (Funkhouser 2013). In ethnohistoric accounts, bears' status as human-like animals meant they were treated differently from other game after their death. Bear remains were regularly discarded in ritually prescribed ways aimed at giving the bear spirit time to escape.[16] For example, there are ritual prescriptions for killing the animal using only the most primitive tools, pleading forgiveness upon death, making offerings of tobacco, and being attentive to the treatment of the blood and bones of the animal (Hallowell 1926; Black 1998:346; Rockwell 1991:26-40, 55-56; Shepard and Sanders 1985:85, 90-91). The bear bone at Feltus was treated differently

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[14] Chikchansi, Eskimo, Lakota, Ojibwa, Pomo, Tlingit, Yavapai (Rockwell 1991:64–72); Iroquois, Menominee, Sauk, Winnebago (Berres et al. 2004:16–17)

[15] Cherokee (Mooney 1900:327–329)

[16] Cree (Rockwell 1991:40; Skinner 1914); Eskimo (Hallowell 1926:79); Menominee, Montagnais-Naskapi, Saulteaux, Wabanaki (Hallowell 1926:63-66, 136-140); Navajo (Rockwell 1991:48-51); Ojibwa (Hallowell 1926:136-140; Skinner 1914:207)

from the other animal bones. Bear bones at Feltus were less frequently burned than those of other species (H. Edwin Jackson, personal communication 2013). Moreover, the bear bones are almost always included in the Feltus refuse deposits whole. Finally, in Feature 1, bear bone is included in a post pit with the remains of human children, once again suggesting the ontological relationship that bears and humans may have shared (Hill 2013).

Summary

Vessel size, sheer amount of food, and an open communal location all imply that Feltus should rank high on the dimension of scale. However, Feltus ranks relatively low in the level of sociopolitical competition with little to no evidence of high-quality vessels, wastage, atypical disposal, prestige items, or markers of status differentiation. Smoking pipes, bear remains, and other possible items of ritual importance are less common at Coles Creek sites and hence the need to examine their potential meaning more closely.

Pipes and bears were common players in rituals associated with community building through establishing and maintaining relationships between participants; in the South, they were rarely included in rituals explicitly associated with status negotiation. While their presence certainly indicates a ritual component to the Feltus events, they do not support a political or competitive focus. Combined, the suite of evidence from the ceramic, food, and ritual remains puts Feltus squarely in the large-scale, egalitarian communal events quadrant of the graph (Figure 6.10). Because feasting took place at Feltus throughout its occupation, this interpretation provides a starting place for considering the other activities that occurred there. In the rest of this chapter I will examine each component of the Feltus ritual cycle to demonstrate the degree to which it supports this communal, noncompetitive interpretation.

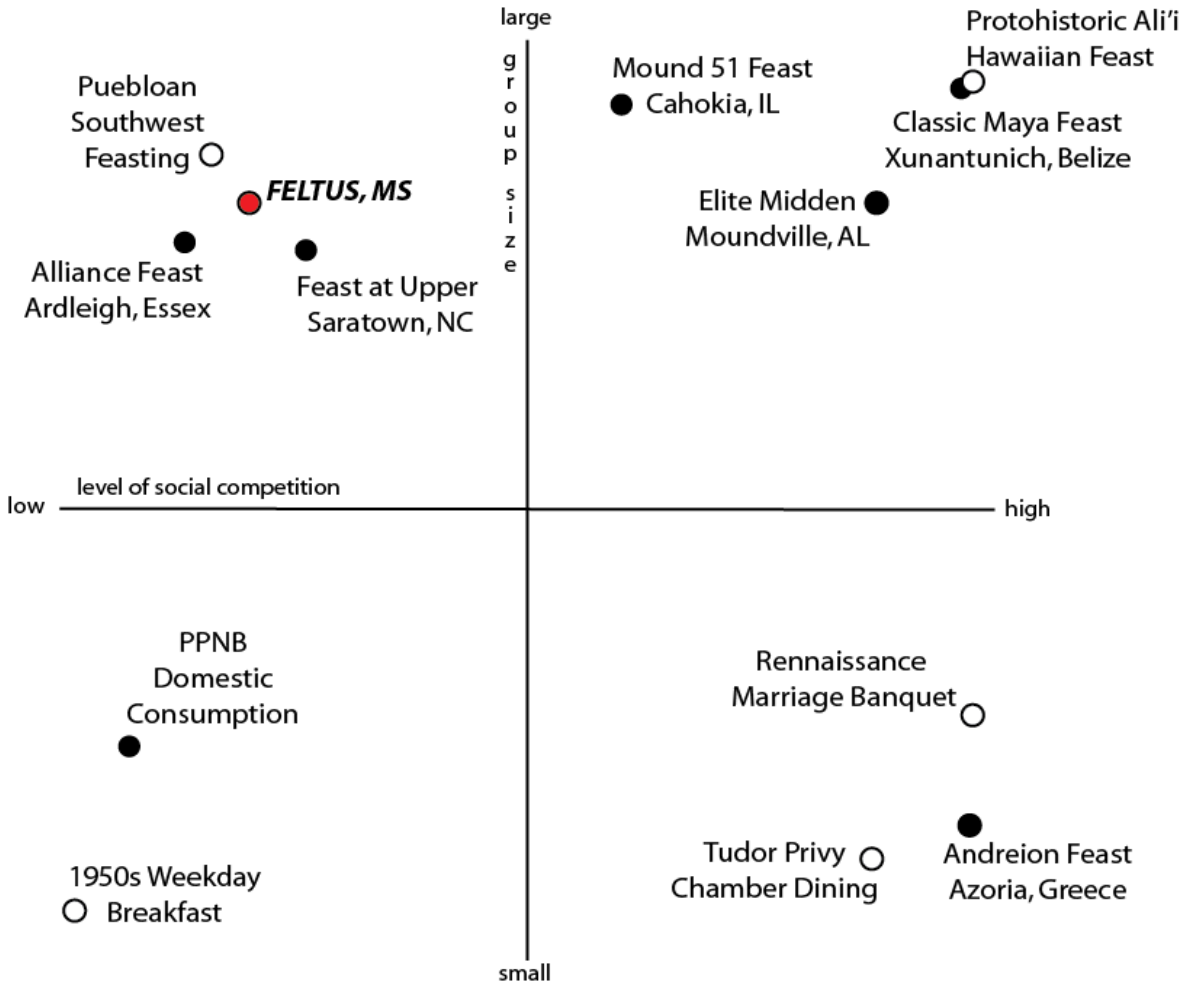

Figure 6.10. New conceptualization showing ethnographic (open circles) and archaeological (closed circles) examples of eating events as placed in Figure 6.6 and the placement of Feltus in the large-scale egalitarian, communal events quadrant of the graph. (Placements of the individual eating events are based on the data presented in this dissertation as well as Bossard and Boll [1950], Haggis et al. [2011], Jackson and Scott [2003], Kelly [2001], Kirch [2001], Knight [2004], LeCount [2001], Mills [2004], Pauketat et al. [2002], Potter [2000], Potter and Ortman [2004], Ralph [2007], Strong [2002], Twiss [2007], Vanderwarker et al. [2007], and Welch and Scarry [1995].)

Ritual Posts

In addition to feasting, the act of setting and removing nonstructural posts was one of the most widespread ritual activities at Feltus, occurring during the Sundown, Ballina, and Balmoral phases. In two recent publications, Erin Nelson and I have developed a framework for understanding this activity (Kassabaum and Nelson n.d.; Nelson and Kassabaum 2014). We argue that the post ritual at Feltus supports the conclusion that the events taking place there were centered on community building through establishing and maintaining relationships. In particular, we suggest that this activity fostered relationships with members of the social group not typically considered in interpretations of community events—those who resided in different cosmological domains.

As described in Chapter 2, standing posts at Feltus all follow roughly the same depositional process. In each case, Coles Creek people dug a large hole and inserted a post, surrounding it with ash containing food remains, fragments of ceramic vessels, and other ritual materials (e.g. human remains, bear bone, and objects with fire and water associations). Then, after a period of time, the post was removed and the resulting hole was plugged with clean, brown, clay-rich sediment. Features showing this depositional sequence have been identified in Mound D area contexts associated with feasting, directly linked to mound building at Mound A, and potentially associated with summit use on Mound B.

Standing posts that were not part of structures are common on Woodland period sites.[17] The variable interpretations of such posts are largely based on historic and contemporary Native beliefs regarding the structure of the world. There are strong

[17] At McKeithen and Cold Springs, posts were associated with complex mortuary rituals (Jeffries 1994; Milanich et al. 1984). At Walling and Kolomoki, Knight (1990; 2001) interpreted posts on the mound summits as evidence of scaffolding and feasting behavior. At Biltmore and Garden Creek, large posts were used in shamanic ceremonies (Kimball et al. 2010). Finally, at Range, posts in courtyards signaled center of the community as shared space (Kelly 1990).

continuities in world view among indigenous groups throughout the Americas and Eurasia and the geographic extent of these common understandings implies great time depth (Eliade 1961; Hudson 1976; Lankford 2007; Reilly 2004), allowing for the careful application of such analogies to archaeological finds at prehistoric American Indian sites (Berres et al. 2004; Kelly 2003; Townsend 2004:20-21). In this belief system the world consists of three divisions—the Above World, the Middle World, and the Beneath World—which are connected by an *axis mundi* represented iconographically by a pole or a tree (Lankford 2007; Reilly 2004; Waring and Holder 1945). The physical manifestations of this axis, deployed symbolically or in ritual, mark "portals" through which certain people, animals, and supernaturals can travel. Standing posts like those at Feltus may therefore represent locations from which it was possible to move and communicate between the worlds.

This idea of opening the lines of communication between the world of humans and the spirit worlds (the Above and Beneath Worlds) is supported by the material inclusions in the Feltus post holes. Within the world view just described, certain objects and substances symbolically represent the Above and Beneath Worlds (Charles et al. 2004; Lankford 2007; Pauketat 2008). In particular, objects and substances associated with fire (e.g., ash and pipes) represent connections between this world and the Above World (Nelson 2012) while objects and substances associated with water (e.g., river clay, river-worn pebbles, and the remains of aquatic animals) represent connections between this world and the Beneath World. The repeated presence of such fire- and water-focused materials in post deposits at Feltus

suggests that an interpretation of post rituals centered on communication among the three worlds may be particularly apt.[18]

In addition to containing objects and substances that specifically reference the Above and Beneath Worlds, the Feltus deposits also include materials that function more generally as world connectors — the bears and the posts themselves. As mentioned previously, bears are traditionally seen as being able to communicate and navigate between the human and spirit worlds (Black 1998:343-345; Rockwell 1991:64-67). For example, they are seen as having special powers from the sun or as inhabiting both this world and the sky,[19] and their hibernation patterns demonstrate an ability to travel back and forth between the realm of the living and the realm of the dead.[20] Moreover, shamans, whose primary role is to the bridge the gap between humans and the spirits, are commonly thought to be bears, turn into bears, or wear and use bear paraphernalia when performing their connective duties.[21] Finally, the killing of a bear is widely considered "an offering by which humans communicate with the nonhuman, spiritual domain" (Black 1998:343; see also Berres et al. 2004:10, 24). Bears association with standing posts at Feltus, though their deliberate burial in Feature 1 and repeated inclusion in the feasting middens associated with post-setting rituals, suggest that this connective role may be key to understanding their meaning.

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[18] Iconographic interpretations of Southeastern cosmology show that certain sites focused on connections with the Above World and others on connections with the Beneath World (Carr 2012; Lankford et al. 2011; Pauketat and Emerson 2001; Steponaitis and Knight 2004). The strength of the connection to the Beneath World at Feltus does not appear to be as strong as that with the Above World; however, the site's bluff top location does imply that water-focused materials were intentionally procured from the river and included in Feature 37. Perhaps the atypical nature of this post's contents is related to the unusual manner in which it was sealed.

[19] Modoc (Beider 2006:166); Pawnee (Dorsey 1904:189–191, 343–344).

[20] Cherokee (Mooney 1900:327–329).

[21] Chikchansi, Eskimo, Lakota, Ojibwa, Pomo, Tlingit, Yavapai (Rockwell 1991:64–72); Iroquois, Menominee, Sauk, Winnebago (Berres et al. 2004:16–17).

The Feltus posts and the materials and substances associated with them therefore served the function of extending the social network beyond the people physically attending the events at Feltus, to those who inhabited different spatial and temporal domains. First, many inclusions had associations with particular cosmological domains, thereby referencing these places and the beings who inhabit them. Second, the posts themselves, as well as bears, had connective properties that promoted the gathering of large groups of people, living and non-living, human and non-human. Finally, the presence of bear and human remains integrated an extended kin network, including non-human fictive kin and non-living human kin. By promoting this type of connection, post-setting certainly supports an interpretation of the events at Feltus emphasizing the commonalities rather than the differences between people. The inclusion of the same materials and substances in the other parts of the Feltus ritual cycle (e.g., unusual clay deposits in the mounds and abundant bear bone and pipe fragments in the feasting middens) ties the various ritual activities occurring at Feltus together as part of a coherent ritual cycle.

Coles Creek Burials

As discussed above, burial of the dead eventually joined feasting and post-setting as part of the Feltus ritual cycle. Though burial joined the suite of activities late in the sequence with the construction of Mounds B, C, and D during the (Ballina and) Balmoral phase, the inclusion of human remains in Feature 1 during the Sundown phase certainly foreshadows the later importance of this activity. “Of the various classes of material preserved in an archaeological context, perhaps no single category of data has greater utility for the archaeologist attempting to draw social inferences than the physical remains of mortuary

procedures” (Tainter 1975:1). Here, I examine the nature of the Coles Creek mortuary program and argue that it also supports the conclusion that the underlying purpose of the Feltus rituals was to build community and increase solidarity within the group.

Early investigations of mortuary remains from Coles Creek sites report mass interments containing no grave goods (Ford 1951; Giardino 1977; Neuman 1984) and everything we know about the burials at Feltus suggests that they fit this pattern. Though recent excavations have not targeted the burials at the site, Moorehead excavated more than 40 burials from Mounds C and D in 1924. He states, "[these burials] had been placed in the tumulus without any regularity; sometimes only a portion of the body was interred . . . Not a single mortuary offering accompanied the interments" (Moorehead 1932:163). Until recently, this pattern has been described as disorderly, haphazard, random, and made with little care and consideration for the people involved (e.g.,Williams and Brain 1983:45; Ford 1951:106-107).

In a previous study, I have investigated whether meaningful patterns exist in the burials from Greenhouse, Lake George, and Mount Nebo—the three largest Coles Creek cemeteries (Kassabaum 2011). Briefly, I conclude that the burial data from Coles Creek sites represent a mortuary program that: (1) differs from site to site, (2) is characterized by mass burials such as would result from charnel house cleanings, and (3) consistently expresses age as the strongest variable in determining burial position. I argue that the Coles Creek burial record is not disorderly and random, but rather indicates a distinct focus on the group rather than the individual.

While the differences that exist between individuals of different ages confirm that these mass interments were being made with some degree of care and consideration for those

involved, the distinct lack of individual interments and emphasis on communal burial minimizes the importance of the individual in the mortuary program as a whole. Moreover, patterning solely based on age provides an argument *against* inherited status; if status were acquired based on inherited social position rather than individual achievement, one would expect similarities in burial type to crosscut age groups. Finally, the inconsistencies between the mortuary programs at each location imply that individual status was not a function of one's position within a complex political, social, and religious network that crosscuts sites, but rather was determined by the customs and beliefs of the population gathering at a that particular site. At Feltus, therefore, it is likely that mortuary practices closely aligned with the integrative focus of the site overall.

Monument Construction

This brings us to the final and most visible aspect of the Feltus ritual sequence—mound building. Like feasting, the presence of large earthen monuments, particularly flat-topped mounds arranged around open plazas, is often taken as a sign of hierarchy, elite control, and active status negotiation. Because of the large size of Coles Creek mounds and the fact that we have ethnohistoric records of powerful leaders ruling from atop platform mounds later in LMV history, it is commonly assumed that the shift from conical to platform mound construction during the Coles Creek period marks a parallel shift from a more egalitarian to a more hierarchical social structure. Here, I challenge this assumption and instead argue that, like the rest of the ritual cycle, the act of constructing mounds at Feltus may have built group identity and enhanced social cohesion.

Monumental constructions have two principal defining features; their scale and elaboration exceed the requirements of mere utilitarian function, and their construction necessitates some organization of labor and resources beyond that of the household unit (Bradley 1985:2; DeMarrais et al. 1996:18-19; Trigger 1990:119). These characteristics have factored heavily in interpretations of societies associated with large-scale public architecture. For example, Trigger (1990) argues that because of these labor and surplus requirements, monumental constructions correlate with increasing stratification and differentiation within a society and were built for the purposes of unambiguously marking social and political relationships and taking part in conspicuous consumption. This belief has held sway over discussions of late prehistoric platform mounds in the South, particularly because ethnohistoric data on mound-building groups such as the Natchez and archaeological data on the societies that preceded them suggest the presence of powerful chiefs (e.g., Hudson 1976; Kidder 1998; 2004; Steponaitis 1986).

Many archaeologists have now moved away from reading hierarchy into monumental constructions and it is now generally accepted that elite control of labor is not a prerequisite for the construction of large-scale public architecture (Adler and Wilshusen 1990; Brown 2006; Griffin 1992; Lindauer and Blitz 1997). In response, scholars are beginning to recognize and explore the range of activities that took place on platform mound sites in non-stratified societies. For example, Roe (2010:2) states, “ceremonial performances, council meetings, and other social and economic interactions that took place within or around large structures would have served to integrate dispersed communities into larger social networks” (see also Boudreaux 2010; Downs and Blitz 2011; Lindauer and Blitz 1997; Thompson and Pluckhahn 2010). These explanations, however, have not been as readily accepted in

discussions of Coles Creek mounds, likely because they immediately pre-date a more decidedly hierarchical Mississippian culture. Elsewhere, I have argued that, in order to avoid the detrimental effects of relying too heavily on analogy, it is critical to examine the likely purpose and meaning of Woodland period mound building independently of our understanding of mound building in the Mississippi period (Kassabaum et al. 2011).

Because excavations at Feltus have revealed that mound building was just one part of a ritual cycle that also included feasting, post setting, and burial, and particularly because it was a relatively late addition to this suite of activities, it is important to view it within this ritual context. Monuments are not constructed on blank slates; rather, they are built onto landscapes that are already redolent with meaning. In other words, monuments not only form new meanings, but also contain old memories, history, and traditions (Phear 2007:129-131). The cyclical nature of the activity at Feltus certainly implies that such was the case for the earthen monuments constructed there. As argued previously, evidence regarding the nature of the other activities at Feltus strongly suggests they were noncompetitive and aimed at bringing together and emphasizing the shared identity of the participants. Thus, despite similarity in final form with later, Mississippian platform mounds, the social milieu in which the Feltus mounds were being constructed was one that did not promote, and may have actively subverted, centralized authority. Moreover, the fact that feasting, post setting, and communal burial continued at the site until its abandonment suggests that the addition of platform mound construction did not dramatically change site function.

Coles Creek mounds often served as foundations for wooden structures (Ford 1951; Fuller and Fuller 1987; Williams and Brain 1983), and these have generally been interpreted as residences of social, religious, or political leaders (Steponaitis 1986:386). However, we

actually know very little about the function of these structures. Some mound stages at Greenhouse supported circular structures that were similar to, though larger than, off-mound structures at the site (Belmont 1967), while other summits showed only patches of burned clay or posts that formed no discernible pattern (Ford 1951). Mound-top structures at Lake George contained burials, suggesting that some Coles Creek mounds supported charnel houses or mortuary temples (Williams and Brain 1983:334-335; see also Steponaitis 1986:385). Roe (2010) suggests that other mounds may have supported council houses, stages for ritual activity, or locations for social gatherings.

Some researchers, particularly those enmeshed in the phenomenological approach, have emphasized that different aspects of monuments were emphasized at different moments in their history, that a single monument could be interpreted in a variety of ways by the individuals experiencing it, and that all of these differences would have led to distinctions in cultural meaning (e.g., Bender 1998; Bradley 1998; Brück 2001; Phear 2007). With little knowledge of how mound summits at Feltus were used and little evidence of permanent habitation elsewhere at the site, there is no reason to assume that a population of resident elites controlled the use and meaning of the Feltus mounds. Mound A at Feltus shows no evidence of buildings on its successive summits and there is no definitive evidence of buildings on Mound B until the final episode of use during the late Balmoral or Gordon phase. Previous summits may have supported wooden structures of unknown function or non-structural activity areas. Regardless, this variability in use would have left the mounds open to multiple interpretations by the Coles Creek people who built, used, and visited the site. Much like with the feasting that occurred there, many meanings were likely ascribed to the Feltus mounds and their social effects would have been manifold. While this in no way

precludes status-seeking behavior from occurring at the mounds, it does imply that this was not the only, let alone the primary, function of the Feltus monumental landscape.

Many authors have argued that, given the necessary association between monumental constructions and communal building practices, a large number of people would have played a part in the creation and interpretation of monuments during their construction (Ashmore 2004; Barrett 1994; Bradley 1991; Brück 2001; Pauketat 2007; Pauketat and Alt 2003; Phear 2007). In other words, the construction process at monumental sites may produce very different social outcomes than the monument's post-construction use. "The question of mound function may be misplaced if by function we mean the end product and its use as a finished, unitary form after construction was complete … [instead] it seems reasonable to infer the mound was a ritual feature whose significance lies, at least in part, in the act of its construction" (Ortmann and Kidder 2013:79; see also Phear 2007:134-139).

I believe that the process of mound building was as important, if not more so, than how the mounds were used after their construction. They, especially Mound A, were constructed in large episodes (Table 6.3), suggesting the involvement of great numbers of people. Moreover, at least some stages of construction are directly associated with episodes of large-scale food consumption, evoking descriptions of the work-party feasts so commonly discussed in the literature (see Dietler and Herbich 2001). One of the outcomes (and likely even one of the initial goals) of building platform mounds at Feltus was the construction process, in essence bringing together a community of people to share a common goal and thus emphasize shared identity.

Table 6.3. Volume estimates for earth moving episodes at Feltus (adapted from Steponaitis et al. 2013).

Site Feature	Volume (m^3)
Mound A[a]:	
Fill 1 (A.F1)	4,700
Fill 2 (A.F2)	2,672
Fill 3 (A.F3)	1,061
Fill 4 (A.F4)	1,066
Total	9,617
Mound B[b]	3,644
Mound C[b]	1,258
Mound D[c]	1,100
Borrow Pit[d]	800
TOTAL	**16,419**

[a]Using Surfer 9.0, I employed a gridding method to calculate the volume of each of Mound A's construction episodes from a series of modified contour maps. It was modified based on our excavation data to separate the mound stages (flattening the contours at each identified floor).

[b]Using Surfer 9.0, I employed a gridding method to calculate the volumes of Mounds B and C from detailed contour maps constructed from LiDAR data. Episodes of mound construction were not separated.

[c]Based on Wailes's (1852) observations I roughly estimated the volume of Mound D using geometric formulas.

[d]Our coring and excavation data were used to map of the base of the borrow pit feature and geometric formulas were then used to estimate its volume.

Summary

The goal of this dissertation was to clarify the role that platform mound sites played in Coles Creek society. To do so, I aimed to answer four questions: (1) How does Feltus fit into the chronology of the LMV? (2) What was the nature of the activities taking place there? (3) How did that change through time? (4) What can this tell us about the broader social dynamics of Coles Creek people? Here, I summarize my conclusions.

The Feltus landscape was utilized during the Hamilton Ridge through Gordon phases (i.e., AD 400–1200). The Hamilton Ridge occupation was minimal and restricted to the Mound D area. During the Sundown phase, occupation of this area became much more

intensive. It included at least two episodes of post-setting and large-scale feasting. Mound building began in the Ballina phase and focused on Mounds A and B. Feasting and post-setting continued during this time and a large borrow pit was excavated in the Mound D area. During the Balmoral phase, mound building continued on Mound B and Mound C was constructed. Additional post-setting took place in the Mound D area and the borrow pit was refilled. In the Gordon phase, people continued to use the Mound B summit, but the rest of the site was abandoned. Scattered ceramic material from surface contexts suggests that minor activity may have continued at the site into the Anna phase, but that is tentative.

Activity at the site thus focused around post-setting, feasting, mound building, and burial. The site shows little evidence of permanent habitation and was likely used episodically rather than continuously. Whether a small resident population lived at the site year round is impossible to know, but it is clear that the wider community gathered there only occasionally to take part in ritual events. The rapidity with which the deposits were laid down and the size of the ceramic vessels at Feltus suggests that these events brought together large groups of people for massive feasting episodes. The vessel form assemblage suggests an emphasis on food consumption, with less evidence for food preparation and virtually none for food storage. Overall, evidence from the food remains associated with these pots suggests that the Feltus people were relying on an expected assemblage of plants and animals (namely, nuts, starchy and oily seeds, deer, and fish). However, emphasis on easily amassable and storable plant resources and exceptionally large animal specimens further suggests large-scale, communal eating. The high proportion of ritually important plants and animals suggests that these meals were special events and detailed analysis of the deposits

and their ritual inclusions imply that they emphasized community building and highlighted the shared identity of the participants.

In sum, the chronological position of Coles Creek immediately before Mississippian has often led has often led to the assumption that it must contain the early stages of hierarchical political organization. However, recent research has shown that, despite the fact that Coles Creek people constructed large platform mound-and-plaza centers, Coles Creek society differed from these later cultures in important ways (e.g., Fritz and Kidder 1993; Kassabaum 2011; Roe 2010). Moreover, research on earlier Woodland platform mound-building traditions such as Marksville, Troyville, Swift Creek, Plum Bayou, and Weeden Island favor interpretations focusing on the integrative functions of platform mound sites (e.g., Boudreaux 2010; Downs and Blitz 2011; Lindauer and Blitz 1997; Thompson and Pluckhahn 2010). By examining the activities that took place at Feltus throughout its history, this dissertation has highlighted both the similarities and the differences between Coles Creek and the cultures that both pre- and postdated it. Differences between Coles Creek and Plaquemine sites, particularly those relating to the mortuary program, suggest that we must not automatically assume Coles Creek groups were politically centralized. On the other hand, striking similarities between the activities taking place at Feltus and those that took place at earlier Woodland centers imply that we might be better served by focusing on these cultures as analogies for understanding Coles Creek society. Much more research is necessary to truly address long-standing questions about the sociopolitical organization of Coles Creek society, but I believe that this work will be aided by exploring the continuities between Coles Creek and the cultures that came before it.

APPENDIX 1

CERAMIC DATA

This appendix includes the raw ceramic data on which Chapters 3 and 4 were based. Tables A1.1–A1.3 include the identifiable ceramic counts for all analysis units at Feltus by type and variety. These data provided the basis for developing the site's ceramic chronology as presented in Chapter 3. (Analysis units are defined in Chapter 2.) Table A1.8 includes the identifiable vessel form counts for all analysis units at Feltus. These data formed the basis for the functional analysis described in Chapter 4.

Table A1.1. Identified types and varieties for all analysis units, including plain types and decorated types (Alligator Incised, *var. Alligator* through Coles Creek Incised, *var. Ely*).

Analysis Unit	**Baytown Plain, *var. unspecified***	**Baytown Plain, *var. Addis***	**Sand tempered plain**	**Alligator Incised, *var. Alligator***	**Alligator Incised, *var. Oxbow***	**Alligator Incised, *var. unspecified***	**Beldeau Incised, *var. unspecified***	**Chevalier Stamped, *var. Chevalier***	**Chevalier Stamped, *var. unspecified***	**Coleman Incised, *var. unspecified***	**Coles Creek Incised, *var. Anathasio***	**Coles Creek Incised, *var. Blakely***	**Coles Creek Incised, *var. Campbellsville***	**Coles Creek Incised, *var. Chase***	**Coles Creek Incised, *var. Coles Creek***	**Coles Creek Incised, *var. Ely***
A1.A	541	-	-	-	-	-	-	-	-	-	-	-	-	2	5	1
A1.Mixed	147	-	-	-	-	-	-	-	-	-	-	-	-	1	10	-
A1.F1	146	-	-	-	-	-	-	1	-	-	-	-	-	2	3	-
A1.F3	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1.F4	64	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
A1.S0	2132	-	-	-	-	1	-	-	7	-	-	-	-	9	35	-
A1.Wash	132	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-
A1.Buried-A	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1.Features	106	-	-	-	-	-	-	-	-	-	-	-	-	1	6	-
A2.A	530	-	-	-	-	2	-	-	-	1	-	-	-	-	10	-
A2.F1	126	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
A2.S0	2698	-	-	-	-	-	-	3	8	-	-	-	1	19	19	-
A2.Features	33	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
A2.Buried-A	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.A	1302	-	-	1	-	-	-	12	2	-	-	-	-	2	8	-
B1.F1	174	-	-	-	2	-	-	1	-	-	-	-	-	-	3	-
B1.F163	706	-	-	-	-	-	-	-	-	-	-	-	-	5	24	1
B1.F2	91	-	-	-	-	-	-	5	1	-	-	-	-	1	-	-
B1.F3	305	-	-	-	-	-	-	-	1	-	-	-	-	2	1	-
B1.F4	176	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
B1.F5	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.S0	537	-	-	31	1	-	-	-	3	-	-	-	-	-	2	-
B1.S1	136	-	-	-	-	-	-	3	1	-	-	-	-	-	-	-

Table A1.1.Continued.

Analysis Unit	Baytown Plain, *var. unspecified*	Baytown Plain, *var. Addis*	Sand tempered plain	Alligator Incised, *var. Alligator*	Alligator Incised, *var. Oxbow*	Alligator Incised, *var. unspecified*	Beldeau Incised, *var. unspecified*	Chevalier Stamped, *var. Chevalier*	Chevalier Stamped, *var. unspecified*	Coleman Incised, *var. unspecified*	Coles Creek Incised, *var. Anathasio*	Coles Creek Incised, *var. Blakely*	Coles Creek Incised, *var. Campbellsville*	Coles Creek Incised, *var. Chase*	Coles Creek Incised, *var. Coles Creek*	Coles Creek Incised, *var. Ely*
B1.S2 Wash	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.S2	12	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
B1.S3	51	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
B1.S4	103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C.A	258	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-
C1.Mixed	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C1.F1	34	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-
C2.Flank Midden	157	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-
C2.Platform	136	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-
C2.Buried-A	8	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
D.Plow Zone	8083	-	-	7	2	4	-	-	14	1	1	-	-	27	34	-
D2.Plow Zone	5162	-	-	5	3	1	-	-	11	-	-	-	-	15	30	-
D3.Plow Zone	607	1	-	-	-	-	-	1	2	-	-	-	-	-	-	-
D.Features	113	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
D2.F4	1876	-	-	22	33	3	-	4	8	-	-	-	4	3	3	-
D2.F59	124	-	-	-	4	2	-	-	-	-	-	-	-	-	-	-
D2.Midden	2380	-	-	1	2	-	-	2	4	-	-	-	-	20	31	-
D2.Mixed	1620	-	-	1	1	1	1	1	2	-	2	-	1	9	9	-
D4.BP	541	-	1	-	-	-	-	1	1	-	-	-	-	4	9	-
D4.Mixed	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D4.Midden	4	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
D4.Below Midden	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General Collect.	5242	-	-	4	1	1	-	2	8	-	-	1	-	10	39	-
TOTAL	**36818**	**1**	**1**	**72**	**49**	**16**	**1**	**39**	**75**	**2**	**3**	**1**	**8**	**138**	**300**	**2**

Table A1.2. Identified types and varieties for all analysis units, including decorated types (Coles Creek Incised, *var. Hunt* through Larto Red, *var. Silver Creek*).

Analysis Unit	**Coles Creek Incised, *var. Hunt***	**Coles Creek Incised, *var. Judd Bayou***	**Coles Creek Incised, *var. Mott***	**Coles Creek Incised, *var. Phillips***	**Coles Creek Incised, *var. Stoner***	**Coles Creek Incised, *var. unspecified***	**French Fork Incised, *var. French Fork***	**French Fork Incised, *var. Laborde***	**French Fork Incised, *var. Larkin***	**French Fork Incised, *var. Wilzone***	**French Fork Incised, *var. unspecified***	**Harrison Bayou Incised, *var. Harrison Bayou***	**Hollyknowe Pinched, *var. Hollyknowe***	**Landon Red on Buff, *var. Landon***	**Larto Red, *var. Larto***	**Larto Red, *var. Silver Creek***
A1.A	1	-	-	7	3	14	-	-	2	-	3	-	-	-	-	-
A1.Mixed	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-
A1.F1	1	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-
A1.F3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1.F4	1	-	-	1	2	-	2	-	-	-	-	-	-	-	-	-
A1.S0	5	-	-	15	6	25	5	1	18	-	1	-	-	-	1	-
A1.Wash	1	-	-	2	1	4	-	-	-	-	-	-	-	-	-	-
A1.Buried-A	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
A1.Features	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
A2.A	-	-	-	4	-	7	3	-	1	-	-	-	-	-	1	-
A2.F1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
A2.S0	7	1	-	55	4	37	4	1	4	-	1	-	-	-	-	-
A2.Features	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-
A2.Buried-A	-	-	-	1	-	1	-	-	-	-	1	-	-	-	-	-
B1.A	5	1	4	28	4	17	1	2	4	-	2	1	-	-	8	-
B1.F1	3	-	-	6	2	1	1	1	-	-	-	-	-	-	4	-
B1.F163	-	-	-	10	15	13	2	-	18	-	3	-	-	-	-	-
B1.F2	-	-	-	1	-	1	-	-	1	-	-	-	-	-	5	-
B1.F3	-	-	2	-	4	4	-	-	-	-	1	-	-	-	-	-
B1.F4	-	-	-	6	2	10	1	2	1	-	-	-	-	-	-	-
B1.F5	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
B1.S0	-	4	-	3	1	2	-	1	-	-	2	-	-	1	9	-
B1.S1	-		-	1	-	1	-	-	-	-	-	-	-	-	-	-

Table A1.2. Continued.

Analysis Unit	Coles Creek Incised, *var. Hunt*	Coles Creek Incised, *var. Judd Bayou*	Coles Creek Incised, *var. Mott*	Coles Creek Incised, *var. Phillips*	Coles Creek Incised, *var. Stoner*	Coles Creek Incised, *var. unspecified*	French Fork Incised, *var. French Fork*	French Fork Incised, *var. Laborde*	French Fork Incised, *var. Larkin*	French Fork Incised, *var. Wilzone*	French Fork Incised, *var. unspecified*	Harrison Bayou Incised, *var. Harrison Bayou*	Hollyknowe Pinched, *var. Hollyknowe*	Landon Red on Buff, *var. Landon*	Larto Red, *var. Larto*	Larto Red, *var. Silver Creek*
B1.S2 Wash	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
B1.S2	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-
B1.S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.S4	1	-	-	1	1	2	-	-	1	-	-	-	-	-	-	-
C.A	-	-	1	2	-	4	-	-	1	-	-	-	-	-	-	-
C1.Mixed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C1.F1	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-
C2.Flank Midden	1	-	-	-	1	1	-	-	1	-	-	-	-	-	-	-
C2.Platform	-	-	-	1	2	2	-	-	1	-	-	-	-	-	-	-
C2.Buried-A	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
D.Plow Zone	7	1	3	38	1	100	6	1	14	4	3	3	-	-	9	-
D2.Plow Zone	8	-	4	42	4	80	8	-	24	1	5	1	1	-	-	1
D3.Plow Zone	2	-	1	3	-	2	1	-	1	-	1	-	-	-	-	-
D.Features	1	-	-	-	-	2	-	-	1	-	-	-	-	-	-	-
D2.F4	-	1	-	26	4	25	-	7	6	24	3	-	1	-	37	3
D2.F59	-	-	-	-	-	3	-	-	2	1	-	-	-	-	2	-
D2.Midden	6	3	1	50	14	30	6	1	13	2	7	1	-	-	10	-
D2.Mixed	8	-	-	24	6	14	6	1	14	-	2	-	3	-	-	-
D4.BP	2	-	-	10	4	11	1	-	2	-	1	-	-	-	-	-
D4.Mixed	-	-	-	2	-	-	1	-	-	-	-	-	-	-	-	-
D4.Midden	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
D4.Below Midder	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General Collect.	10	3	7	34	3	83	2	3	9	2	8	-	-	-	3	-
TOTAL	**71**	**15**	**23**	**382**	**84**	**507**	**51**	**21**	**139**	**34**	**46**	**6**	**5**	**1**	**89**	**4**

Table A1.3. Identified types and varieties for all analysis units, including decorated types (Marksville Incised, *var. unspecified* through Woodville Zoned Red, *var. Woodville*).

Analysis Unit	**Marksville Incised, *var. unspecified***	**Marksville Stamped, *var. Mabin***	**Marksville Stamped, *var. Manny***	**Marksville Stamped, *var. Troyville***	**Mazique Incised, *var. Kings Point***	**Mazique Incised, *var. Manchac***	**Mazique Incised, *var. Mazique***	**Mulberry Creek Cord Marked, *var. Edwards***	**Mulberry Creek Cord Marked, *var. Smith Creek***	**Mulberry Creek Cord Marked, *var. unspecified***	**Plaquemine Brushed, *var. Plaquemine***	**Pontchartrain Check Stamped, *var. Pontchartrain***	**Salomon Brushed, *var. Salomon***	**Woodville Zoned Red, *var. Woodville***
A1.A	-	-	-	-	-	-	3	4	-	1	-	1	-	-
A1.Mixed	-	-	-	-	-	-	-	2	-	-	-	-	-	-
A1.F1	-	-	-	-	2	-	-	-	-	-	-	-	-	-
A1.F3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1.F4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1.S0	-	-	-	-	-	-	-	47	2	4	-	-	-	-
A1.Wash	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1.Buried-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A1.Features	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A2.A	-	-	-	-	-	-	-	1	-	1	-	-	-	-
A2.F1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A2.S0	-	-	-	-	-	-	-	2	-	2	-	-	-	-
A2.Features	-	-	-	-	-	-	-	-	-	-	-	-	-	1
A2.Buried-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.A	-	-	-	-	1	-	1	12	22	10	-	-	-	7
B1.F1	1	-	-	-	-	-	-	-	6	-	-	-	-	-
B1.F163	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.F2	-	-	-	-	-	-	-	-	4	-	-	-	-	-
B1.F3	1	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.F4	-	-	-	-	-	-	-	-	-	1	-	-	-	-
B1.F5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.S0	-	-	-	-	-	-	-	-	1	3	-	-	1	4
B1.S1	-	-	-	-	-	-	-	-	17	-	-	-	-	-

Table A1.3. Continued.

Analysis Unit	Marksville Incised, *var. unspecified*	Marksville Stamped, *var. Mabin*	Marksville Stamped, *var. Manny*	Marksville Stamped, *var. Troyville*	Mazique Incised, *var. Kings Point*	Mazique Incised, *var. Manchac*	Mazique Incised, *var. Mazique*	Mulberry Creek Cord Marked, *var. Edwards*	Mulberry Creek Cord Marked, *var. Smith Creek*	Mulberry Creek Cord Marked, *var. unspecified*	Plaquemine Brushed, *var. Plaquemine*	Pontchartrain Check Stamped, *var. Pontchartrain*	Salomon Brushed, *var. Salomon*	Woodville Zoned Red, *var. Woodville*
B1.S2 Wash	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.S2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.S3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1.S4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C.A	-	-	-	-	-	-	-	-	-	1	-	-	-	-
C1.Mixed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C1.F1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C2.Flank Midden	-	-	-	-	-	-	-	-	1	-	-	-	-	-
C2.Platform	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C2.Buried-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D.Plow Zone	13	-	4	4	-	-	-	18	45	62	1	-	-	3
D2.Plow Zone	1	-	-	-	-	1	-	3	23	47	-	-	-	-
D3.Plow Zone	-	-	-	-	-	-	-	-	1	2	-	-	-	-
D.Features	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D2.F4	-	-	-	1	-	-	-	34	9	28	-	-	-	8
D2.F59	-	-	-	-	-	-	-	1	-	1	-	-	-	4
D2.Midden	-	-	-	-	-	-	-	5	16	18	-	1	-	-
D2.Mixed	1	-	-	-	-	-	-	2	5	12	-	3	-	1
D4.BP	1	-	-	-	-	-	-	-	6	1	-	-	-	-
D4.Mixed	-	-	-	-	-	-	-	-	-	1	-	-	-	-
D4.Midden	-	-	-	-	-	-	-	-	1	-	-	-	-	-
D4.Below Midden	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General Collect.	3	1	1	-	-	-	3	1	18	16	-	-	-	2
TOTAL	**21**	**1**	**5**	**5**	**3**	**1**	**7**	**132**	**177**	**211**	**1**	**5**	**1**	**30**

Table A1.4. Vessel form identifications for the Feltus assemblage.

		BOWLS						JARS					TENTATIVE				
Analysis Unit	**BEAKERS**	*deep bowl*	*simple bowl*	*shallow bowl*	*plate*	*carinated bowl*	**BOWLS**	*necked jar*	*restricted jar*	**JARS**	**PIPES**	**RESTRICTED BOWLS**	*beaker/bowl*	*beaker/necked jar*	*restricted jar/bowl*	**TENTATIVE**	**GRAND TOTAL**
A1.A-horizon	**3**	*3*	*5*	-	-	-	**8**	-	*2*	**2**	-	**1**	-	*2*	*1*	**3**	**17**
A1.F1	-	*3*	*6*	-	-	-	**9**	*2*	*1*	**3**	-	-	*1*	*1*	-	**2**	**14**
A1.F3	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
A1.F4	**2**	-	*4*	-	-	-	**4**	-	*2*	**2**	-	**1**	*1*	-	*1*	**2**	**11**
A1.Features	**1**	-	*1*	-	-	-	**1**	-	*2*	**2**	-	**1**	-	*1*	-	**1**	**6**
A1.Mixed	**3**	-	*1*	-	-	-	**1**	*1*	*3*	**4**	-	-	-	-	*2*	**2**	**10**
A1.S0	**10**	*7*	*21*	*2*	-	*1*	**31**	*6*	*15*	**21**	**1**	**10**	*3*	-	*10*	**13**	**86**
A1.Wash	**1**	-	*4*	-	-	-	**4**	*1*	*1*	**2**	-	**1**	-	-	*1*	**1**	**9**
A2.A	**2**	-	*1*	-	*1*	-	**2**	-	*1*	**1**	-	**1**	-	*1*	*1*	**2**	**8**
A2.Buried-A	**1**	-	*1*	-	-	-	**1**	*1*	-	**1**	-	-	-	-	-	-	**3**
A2.F1	-	*1*	*2*	-	-	-	**3**	*1*	-	**1**	-	-	-	-	-	-	**4**
A2.Features	-	-	-	-	-	-	-	-	*1*	**1**	-	-	-	-	-	-	**1**
A2.S0	**6**	*18*	*40*	*3*	-	*3*	**64**	*1*	*10*	**11**	**4**	**11**	*8*	*2*	*18*	**28**	**124**
B1.A	**4**	*2*	*15*	*2*	-	-	**19**	*7*	*11*	**18**	-	**3**	*6*	*3*	*10*	**19**	**63**
B1.F1	**3**	-	*6*	*2*	-	-	**8**	-	*5*	**5**	-	-	*1*	*1*	*2*	**4**	**20**
B1.F163	**9**	*3*	*24*	*3*	-	*1*	**31**	-	*5*	**5**	-	**10**	*2*	-	*9*	**11**	**66**
B1.F2	-	-	-	-	-	-	-	*5*	*1*	**6**	-	-	-	-	*2*	**2**	**8**
B1.F3	**1**	-	*5*	-	-	-	**5**	*1*	*1*	**2**	-	**4**	-	-	*1*	**1**	**13**
B1.F4	**4**	*2*	*3*	-	-	-	**5**	-	-	-	-	**3**	-	-	*2*	**2**	**14**
B1.F5	-	-	*2*	-	-	-	**2**	-	-	-	-	-	-	-	-	-	**2**

Table A1.4. Continued.

		BOWLS						JARS					TENTATIVE				
Analysis Unit	**BEAKERS**	*deep bowl*	*simple bowl*	*shallow bowl*	*plate*	*carinated bowl*	**BOWLS**	*necked jar*	*restricted jar*	**JARS**	**PIPES**	**RESTRICTED BOWLS**	*beaker/bowl*	*beaker/necked jar*	*restricted jar/bowl*	**TENTATIVE**	**GRAND TOTAL**
B1.S0	**3**	*1*	*9*	*4*	-	-	**14**	*3*	*4*	**7**	**1**	-	*1*	*1*	-	**2**	**27**
B1.S1	-	-	*3*	-	-	-	**3**	-	*4*	**4**	-	-	-	-	*2*	**2**	**9**
B1.S2	**1**	-	*1*	-	-	-	**1**	-	*1*	**1**	-	-	-	-	-	-	**3**
B1.S2 Wash	**1**	-	-	*1*	-	-	**1**	-	-	-	-	-	-	-	-	-	**2**
B1.S3	-	-	-	-	-	-	-	-	-	-	-	**1**	-	-	-	-	**1**
B1.S4	-	-	-	-	-	-	-	-	-	-	**1**	**1**	*1*	-	*2*	**3**	**5**
C1.A	-	-	-	-	-	-	-	-	*1*	**1**	-	**1**	*1*	-	*1*	**2**	**4**
C1.F1	-	-	*2*	-	-	-	**2**	-	-	-	-	-	-	-	*1*	**1**	**3**
C1.Mixed	-	-	*1*	-	-	-	**1**	-	-	-	-	-	-	-	-	-	**1**
C2.A	-	-	-	*1*	-	-	**1**	-	-	-	-	-	*1*	-	-	**1**	**2**
C2.Flank Midden	**1**	-	*1*	*1*	-	-	**2**	-	-	-	-	**1**	*1*	-	*1*	**2**	**6**
C2.Platform	-	-	*1*	-	-	-	**1**	-	*2*	**2**	-	-	-	-	*2*	**2**	**5**
D.Features	**2**	-	*2*	*2*	-	-	**4**	-	*2*	**2**	**1**	**3**	-	-	*6*	**6**	**18**
D.Plow Zone	**4**	-	*9*	*1*	*1*	-	**11**	*1*	*6*	**7**	**3**	**13**	*1*	-	*16*	**17**	**55**
D2.F4	**11**	*2*	*38*	*14*	*2*	-	**56**	*3*	*17*	**20**	**2**	**3**	*3*	*5*	*8*	**16**	**108**
D2.F59	-	*2*	*1*	*2*	*1*	-	**6**	*2*	*1*	**3**	**1**	-	*1*	-	-	**1**	**11**
D2.Midden	**16**	*10*	*39*	*8*	-	*2*	**59**	*3*	*16*	**19**	**1**	**23**	*5*	*2*	*16*	**23**	**141**
D2.Mixed	**6**	*2*	*25*	*4*	-	*1*	**32**	*4*	*17*	**21**	**2**	**6**	*4*	*2*	*11*	**17**	**84**
D2.Plow Zone	**3**	*5*	*5*	*3*	-	-	**13**	*4*	*10*	**14**	**1**	**9**	*5*	-	*18*	**23**	**63**
D3.Plow Zone	**1**	-	*1*	-	-	-	**1**	-	-	-	-	-	-	-	*4*	**4**	**6**

Table A1.4. Continued.

		BOWLS						JARS					TENTATIVE				
Analysis Unit	**BEAKERS**	*deep bowl*	*simple bowl*	*shallow bowl*	*plate*	*carinated bowl*	**BOWLS**	*necked jar*	*restricted jar*	**JARS**	**PIPES**	**RESTRICTED BOWLS**	*beaker/bowl*	*beaker/necked jar*	*restricted jar/bowl*	**TENTATIVE**	**GRAND TOTAL**
D4.BP	**4**	-	*4*	*1*	-	-	**5**	*1*	*2*	**3**	-	**1**	-	*1*	*5*	**6**	**19**
D4.Mixed	**-**	-	-	*2*	-	-	**2**	-	-	**-**	-	**-**	-	-	*1*	**1**	**3**
Surface	**10**	*1*	*12*	-	*1*	-	**14**	*2*	*12*	**14**	-	**4**	*3*	*1*	*15*	**19**	**61**
General Collect.	**1**	-	*1*	*1*	-	-	**2**	-	*1*	**1**	-	**1**	-	-	*5*	**5**	**10**
Grand Total	**115**	*62*	*296*	*57*	*6*	*8*	**429**	*49*	*157*	**206**	**18**	**113**	*49*	*23*	*174*	**246**	**1127**

APPENDIX 2

FOOD REMAINS DATA

This appendix includes the raw floral (Tables A2.1–A2.7) and faunal (Tables A2.8–A2.9) data on which Chapter 5 was based. Tables A2.1–A2.3 include the raw counts, percentages, and ubiquity data from the thirty analyzed flotation samples, divided by context. Tables A2.4–A2.6 report the same data, standardized using a ratio of count per gram of plant weight. Table A2.7 compares the raw data from Feltus, Hedgeland, Lisa's Ridge, and Shackleford Lake. When combined with the data recorded by Dr. H. Edwin Jackson (reported in Tables 5.11 and 5.12), Tables A2.8 and A2.9 report the faunal assemblage from Feltus. These tables include the detailed analysis of the animal remains from Feature 1 and the D2 midden, respectively. The data are adapted from Funkhouser (2013) and include additional observations (e.g., symmetry, age) not explicitly discussed in Chapter 5.

Table A2.1. Raw counts, percentages, and ubiquity data from the thirty Feltus samples (nuts and starchy and oily seeds).

			Nuts					Starchy and Oily Seeds										
Site Area																		
Catalog Nos.																		
Heavy	**Light**	**Analysis Unit**	Acorn Shell	Acorn Meat	Hickory	Pecan	Walnut	Amaranth	Chenopod	Cheno-am	Knotweed	Little Barley	Maygrass	Smartweed	Squash Rind	Squash Seed	Sumpweed	Sunflower
Mound A, East Midden (Early Ballina Phase)																		
169	190	A1.S0	23	0	2	0	0	1	3	0	4	0	0	0	0	0	2	0
178	196	A1.S0	22	0	39	6	4	0	18	0	18	0	11	1	1	0	2	0
1078	1080	A1.S0	25	1	22	8	4	32	5	36	0	0	12	35	7	0	1	0
1100	1101	A1.S0	4	2	0	0	0	1	0	2	0	0	5	0	0	0	0	0
1109	1110	A1.S0	13	0	14	6	2	3	7	8	10	0	9	23	1	1	0	0
1205	1206	A1.S0	55	0	3	5	0	0	1	3	1	0	11	0	0	0	0	0
1211	1212	A1.S0	5	1	6	3	0	6	3	0	0	0	2	3	0	0	0	0
1219	1220	A1.S0	94	0	48	7	0	0	0	0	1	0	0	0	14	0	0	0
1223	1224	A1.S0	9	0	0	0	0	0	6	3	1	0	8	0	4	0	0	0
1231	1232	A1.S0	40	0	34	14	3	0	7	0	0	0	10	8	17	0	0	0
1270	1271	A1.S0	39	0	2	0	0	0	6	0	1	0	6	1	8	0	0	0
170	171	A1.Features	12	0	1	1	0	0	4	0	4	0	1	0	0	0	0	0
	Raw Count		**341**	**4**	**171**	**50**	**13**	**43**	**60**	**52**	**40**	**0**	**75**	**71**	**52**	**1**	**5**	**0**
	Percentage		**22%**	**0%**	**11%**	**3%**	**1%**	**3%**	**4%**	**3%**	**3%**	**0%**	**5%**	**5%**	**3%**	**0%**	**0%**	**0%**
	Ubiquity		**100%**	**25%**	**83%**	**67%**	**33%**	**42%**	**83%**	**42%**	**67%**	**0%**	**83%**	**50%**	**58%**	**8%**	**25%**	**0%**
Mound A, Southwest Midden (Late Ballina Phase)																		
648	649	A2.S0	17	0	66	5	3	0	13	6	1	2	20	0	4	1	0	0
650	651	A2.S0	61	0	74	9	1	0	26	4	3	1	24	0	1	1	0	0
702	703	A2.S0	41	0	104	10	1	0	11	0	0	2	11	1	4	0	0	2
	Raw Count		**119**	**0**	**244**	**24**	**5**	**0**	**50**	**10**	**4**	**5**	**55**	**1**	**9**	**2**	**0**	**2**
	Percentage		**13%**	**0%**	**27%**	**3%**	**1%**	**0%**	**6%**	**1%**	**0%**	**1%**	**6%**	**0%**	**1%**	**0%**	**0%**	**0%**
	Ubiquity		**100%**	**0%**	**100%**	**100%**	**100%**	**0%**	**100%**	**67%**	**67%**	**100%**	**100%**	**33%**	**100%**	**67%**	**0%**	**33%**
Mound B Summits (Late Ballina / Early Balmoral Phase)																		
482	474	B1.S3	0	0	0	0	0	0	78	0	4	0	0	0	0	0	1	0
179	186	B1.F4	1	0	0	0	0	0	32	0	0	0	0	0	0	0	0	0
-	447	B1.F4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A2.1. Continued.

Site Area Catalog Nos. Heavy	Light	Analysis Unit	Nuts: Acorn Shell	Acorn Meat	Hickory	Pecan	Walnut	Starchy and Oily Seeds: Amaranth	Chenopod	Cheno-am	Knotweed	Little Barley	Maygrass	Smartweed	Squash Rind	Squash Seed	Sumpweed	Sunflower
317	318	B1.F5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Raw Count		**1**	**0**	**1**	**0**	**0**	**0**	**110**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
	Percentage		**1%**	**0%**	**1%**	**0%**	**0%**	**0%**	**85%**	**0%**	**3%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**
	Ubiquity		**25%**	**0%**	**25%**	**0%**	**0%**	**0%**	**50%**	**0%**	**25%**	**0%**	**0%**	**0%**	**0%**	**0%**	**25%**	**0%**
South Plaza, Feature 4 (Sundown Phase)																		
480	475	V2.F4	25	0	58	3	1	0	7	0	0	0	22	0	0	0	0	0
507	516	V2.F4	169	0	164	4	0	0	3	5	0	0	10	0	0	0	9	0
1378	1379	V2.F4	17	0	23	0	0	1	1	0	2	0	9	0	0	0	0	0
1381	1382	V2.F4	5	0	43	0	4	0	0	0	1	0	0	0	0	0	0	0
-	1384	V2.F4	3	2	0	0	0	5	2	0	5	0	8	0	0	0	0	0
1415	1414	V2.F4	26	0	83	2	6	0	0	0	2	0	0	0	0	0	0	0
1416	1417	V2.F4	3	0	20	0	0	0	0	0	0	0	1	0	0	0	0	0
1471	1451	V2.F4	33	2	40	6	5	3	61	7	4	0	36	0	0	0	2	0
	Raw Count		**281**	**4**	**431**	**15**	**16**	**9**	**74**	**12**	**14**	**0**	**86**	**0**	**0**	**0**	**11**	**0**
	Percentage		**24%**	**0%**	**36%**	**1%**	**1%**	**1%**	**6%**	**1%**	**1%**	**0%**	**7%**	**0%**	**0%**	**0%**	**1%**	**0%**
	Ubiquity		**100%**	**25%**	**88%**	**50%**	**50%**	**38%**	**63%**	**25%**	**63%**	**0%**	**75%**	**0%**	**0%**	**0%**	**25%**	**0%**
South Plaza, Midden (Sundown Phase)																		
1293	1294	V2.Midden	240	0	10	1	0	40	3	0	0	0	5	1	0	0	0	0
1409	1410	V2.Midden	10	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0
-	1377	V2.Mixed	4	0	0	0	0	0	5	0	3	0	11	0	0	0	0	0
	Raw Count		**254**	**0**	**21**	**1**	**0**	**40**	**8**	**0**	**3**	**0**	**16**	**1**	**0**	**0**	**0**	**0**
	Percentage		**71%**	**0%**	**6%**	**0%**	**0%**	**11%**	**2%**	**0%**	**1%**	**0%**	**4%**	**0%**	**0%**	**0%**	**0%**	**0%**
	Ubiquity		**100%**	**0%**	**67%**	**33%**	**0%**	**33%**	**67%**	**0%**	**33%**	**0%**	**67%**	**33%**	**0%**	**0%**	**0%**	**0%**
TOTAL RAW COUNT			**996**	**8**	**868**	**90**	**34**	**92**	**302**	**74**	**65**	**5**	**232**	**73**	**61**	**3**	**17**	**2**
TOTAL PERCENTAGE			**24%**	**0%**	**21%**	**2%**	**1%**	**2%**	**7%**	**2%**	**2%**	**0%**	**6%**	**2%**	**1%**	**0%**	**0%**	**0%**
PERCENTAGE IDABLE			**30%**	**0%**	**26%**	**3%**	**1%**	**3%**	**9%**	**2%**	**2%**	**0%**	**7%**	**2%**	**2%**	**0%**	**1%**	**0%**
OVERALL UBIQUITY			90%	17%	77%	53%	37%	30%	73%	30%	57%	10%	70%	27%	33%	10%	20%	3%

Table A2.2. Raw counts, percentages, and ubiquity data from the thirty Feltus samples (fruits and other plants).

Site Area Catalog Nos.			Fruits									Other Plants							
Heavy	**Light**	**Analysis Unit**	Bramble	Cabbage Palm	Elderberry	Grape	Hackberry	Maypop	Persimmon	Plum/Cherry	Sumac	Bedstraw	Cane	Carpetweed	Catchfly	Morning-glory	Nightshade	Pokeweed	Purslane
Mound A, East Midden (Early Ballina Phase)																			
169	190	A1.S0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
178	196	A1.S0	1	12	0	1	0	1	3	0	0	0	0	0	0	0	1	0	0
1078	1080	A1.S0	0	1	0	3	0	0	0	0	1	3	0	0	1	0	0	0	3
1100	1101	A1.S0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1
1109	1110	A1.S0	0	9	0	0	0	0	1	0	0	0	0	0	0	1	0	0	4
1205	1206	A1.S0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
1211	1212	A1.S0	0	0	0	0	0	0	0	1	2	1	0	0	0	1	0	0	0
1219	1220	A1.S0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1223	1224	A1.S0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1231	1232	A1.S0	2	9	0	0	0	0	0	0	0	1	1	0	0	0	0	0	11
1270	1271	A1.S0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	171	A1.Features	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Raw Count		**3**	**37**	**0**	**5**	**0**	**1**	**4**	**1**	**4**	**8**	**1**	**0**	**1**	**2**	**2**	**0**	**38**
	Percentage		**0%**	**2%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**2%**
	Ubiquity		**17%**	**42%**	**0%**	**25%**	**0%**	**8%**	**17%**	**8%**	**25%**	**33%**	**8%**	**0%**	**8%**	**17%**	**17%**	**0%**	**50%**
Mound A, Southwest Midden (Late Ballina Phase)																			
648	649	A2.S0	0	1	0	0	0	0	19	0	1	0	0	0	0	0	0	0	6
650	651	A2.S0	1	14	0	0	0	0	7	0	0	5	0	0	0	0	0	0	45
702	703	A2.S0	0	7	0	0	0	0	3	0	0	1	0	1	0	0	0	1	5
	Raw Count		**1**	**22**	**0**	**0**	**0**	**0**	**29**	**0**	**1**	**6**	**0**	**1**	**0**	**0**	**0**	**1**	**56**
	Percentage		**0%**	**2%**	**0%**	**0%**	**0%**	**0%**	**3%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**6%**
	Ubiquity		**33%**	**100%**	**0%**	**0%**	**0%**	**0%**	**100%**	**0%**	**33%**	**67%**	**0%**	**33%**	**0%**	**0%**	**0%**	**33%**	**100%**
Mound B Summits (Late Ballina / Early Balmoral Phase)																			
482	474	B1.S3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	186	B1.F4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-	447	B1.F4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A2.2. Continued.

Site Area Catalog Nos. Heavy	Light	Analysis Unit	Fruits: Bramble	Cabbage Palm	Elderberry	Grape	Hackberry	Maypop	Persimmon	Plum/Cherry	Sumac	Other Plants: Bedstraw	Cane	Carpetweed	Catchfly	Morning-glory	Nightshade	Pokeweed	Purslane
317	318	B1.F5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Raw Count		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Percentage		**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
	Ubiquity		**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
South Plaza, Feature 4 (Sundown Phase)																			
480	475	V2.F4	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	2
507	516	V2.F4	0	1	0	14	0	0	0	0	0	0	0	0	0	0	0	0	6
1378	1379	V2.F4	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1	8	5
1381	1382	V2.F4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
-	1384	V2.F4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
1415	1414	V2.F4	0	0	0	3	0	0	4	0	0	0	0	0	0	0	0	1	0
1416	1417	V2.F4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1471	1451	V2.F4	0	0	1	4	0	0	1	0	0	0	0	0	0	0	0	0	98
	Raw Count		**2**	**1**	**1**	**33**	**1**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**14**	**5**
	Percentage		**0%**	**0%**	**0%**	**3%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**
	Ubiquity		**13%**	**13%**	**13%**	**63%**	**13%**	**0%**	**25%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**13%**	**38%**	**63%**
South Plaza, Midden (Sundown Phase)																			
1293	1294	V2.Midden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1409	1410	V2.Midden	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
-	1377	V2.Mixed	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
	Raw Count		**1**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Percentage		**0%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
	Ubiquity		**33%**	**0%**	**0%**	**67%**	**0%**	**33%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
TOTAL RAW COUNT			**7**	**60**	**1**	**41**	**1**	**2**	**38**	**1**	**5**	**14**	**1**	**1**	**1**	**2**	**3**	**15**	**99**
TOTAL PERCENTAGE			**0%**	**1%**	**0%**	**1%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**2%**
PERCENTAGE IDABLE			**0%**	**2%**	**0%**	**1%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**3%**
OVERALL UBIQUITY			17%	30%	3%	33%	3%	7%	23%	3%	13%	20%	3%	3%	3%	7%	10%	13%	47%

Table A2.3. Raw counts, percentages, and ubiquity data from the thirty Feltus samples (other plants, continued).

Site Area Catalog Nos. Heavy	Light	Analysis Unit	Other Plants Cont. Spurge	Vetch/Wild Pea	Composite Family	Grass Family	Unidentified Seed	Unidentifiable Stem	Unidentifiable Seed	TOTAL
Mound A, East Midden (Early Ballina Phase)										
169	190	A1.S0	0	0	0	0	0	0	2	758
178	196	A1.S0	0	0	0	0	20	0	0	909
1078	1080	A1.S0	0	0	0	5	0	0	51	4572
1100	1101	A1.S0	0	0	0	1	1	1	18	4440
1109	1110	A1.S0	0	1	0	7	1	0	119	4678
1205	1206	A1.S0	0	0	2	3	0	0	57	4987
1211	1212	A1.S0	0	0	0	5	1	0	16	4902
1219	1220	A1.S0	0	0	0	1	0	0	44	5087
1223	1224	A1.S0	0	0	0	1	2	0	24	4953
1231	1232	A1.S0	0	0	0	1	2	0	43	5129
1270	1271	A1.S0	0	0	0	9	0	0	10	5164
170	171	A1.Features	0	0	0	0	3	0	0	709
	Raw Count		**0**	**1**	**2**	**33**	**30**	**1**	**384**	1536
	Percentage		**0%**	**0%**	**0%**	**2%**	**2%**	**0%**	**25%**	
	Ubiquity		**0%**	**8%**	**8%**	**75%**	**58%**	**8%**	**83%**	
Mound A, Southwest Midden (Late Ballina Phase)										
648	649	A2.S0	0	0	0	4	9	0	72	2844
650	651	A2.S0	0	10	0	3	3	0	55	2950
702	703	A2.S0	1	0	0	9	2	0	87	1708
	Raw Count		**1**	**10**	**0**	**16**	**14**	**0**	**214**	902
	Percentage		**0%**	**1%**	**0%**	**2%**	**2%**	**0%**	**24%**	
	Ubiquity		**33%**	**33%**	**0%**	**100%**	**100%**	**0%**	**100%**	
Mound B Summits (Late Ballina / Early Balmoral Phase)										
482	474	B1.S3	0	0	0	6	4	0	0	2005
179	186	B1.F4	0	0	0	0	1	0	0	764
-	447	B1.F4	0	0	0	0	0	0	0	895

Table A2.3. Continued.

Site Area Catalog Nos. Heavy	Light	Analysis Unit	Spurge	Vetch/Wild Pea	Composite Family	Grass Family	Unidentified Seed	Unidentifiable Stem	Unidentifiable Seed	TOTAL
			Other Plants Cont.							
317	318	B1.F5	0	0	0	2	0	0	0	1272
	Raw Count		**0**	**0**	**0**	**8**	**5**	**0**	**0**	130
	Percentage		**0%**	**0%**	**0%**	**6%**	**4%**	**0%**	**0%**	
	Ubiquity		**0%**	**0%**	**0%**	**50%**	**50%**	**0%**	**0%**	
South Plaza, Feature 4 (Sundown Phase)										
480	475	V2.F4	0	0	0	0	5	0	0	2043
507	516	V2.F4	0	0	0	1	3	0	5	2440
1378	1379	V2.F4	0	0	0	0	0	0	14	5598
1381	1382	V2.F4	0	0	0	0	3	0	0	5584
-	1384	V2.F4	0	0	0	0	0	0	11	2814
1415	1414	V2.F4	0	0	0	0	0	0	3	5788
1416	1417	V2.F4	0	0	0	0	0	0	0	5690
1471	1451	V2.F4	0	0	0	0	6	0	15	6168
	Raw Count		**0**	**0**	**0**	**1**	**17**	**0**	**48**	1082
	Percentage		**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**4%**	
	Ubiquity		**0%**	**0%**	**0%**	**13%**	**50%**	**0%**	**63%**	
South Plaza, Midden (Sundown Phase)										
1293	1294	V2.Midden	0	0	0	0	4	0	2	5480
1409	1410	V2.Midden	0	0	0	0	0	0	0	5661
-	1377	V2.Mixed	0	0	0	0	0	0	2	2782
	Raw Count		**0**	**0**	**0**	**0**	**4**	**0**	**4**	357
	Percentage		**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**1%**	
	Ubiquity		**0%**	**0%**	**0%**	**0%**	**33%**	**0%**	**67%**	
TOTAL RAW COUNT			**1**	**11**	**2**	**58**	**70**	**1**	**650**	4007
TOTAL PERCENTAGE			**0%**	**0%**	**0%**	**1%**	**2%**	**0%**	**16%**	
PERCENTAGE IDABLE			**0%**	**0%**	**-**	**-**	**-**	**-**	**-**	
OVERALL UBIQUITY			3%	7%	3%	50%	57%	33%	67%	

Table A2.4. Standardized counts (with percentages and ubiquity data) from the thirty Feltus samples (nuts and starchy and oily seeds

			Nuts					Starchy and Oily Seeds										
Site Area																		
Catalog Nos.																		
Heavy	**Light**	**Analysis Unit**	Acorn Shell	Acorn Meat	Hickory	Pecan	Walnut	Amaranth	Chenopod	Cheno-am	Knotweed	Little Barley	Maygrass	Smartweed	Squash Rind	Squash Seed	Sumpweed	Sunflower
Mound A, East Midden (Early Ballina Phase)																		
169	190	A1.S0	5.94	0.00	0.52	0.00	0.00	0.26	0.78	0.00	1.03	0.00	0.00	0.00	0.00	0.00	0.52	0.00
178	196	A1.S0	2.97	0.00	5.26	0.81	0.54	0.00	2.43	0.00	2.43	0.00	1.48	0.13	0.13	0.00	0.27	0.00
1078	1080	A1.S0	3.48	0.14	3.06	1.11	0.56	4.46	0.70	5.01	0.00	0.00	1.67	4.87	0.97	0.00	0.14	0.00
1100	1101	A1.S0	5.97	2.99	0.00	0.00	0.00	1.49	0.00	2.99	0.00	0.00	7.46	0.00	0.00	0.00	0.00	0.00
1109	1110	A1.S0	1.12	0.00	1.20	0.52	0.17	0.26	0.60	0.69	0.86	0.00	0.77	1.98	0.09	0.09	0.00	0.00
1205	1206	A1.S0	7.57	0.00	0.41	0.69	0.00	0.00	0.14	0.41	0.14	0.00	1.51	0.00	0.00	0.00	0.00	0.00
1211	1212	A1.S0	4.55	0.91	5.45	2.73	0.00	5.45	2.73	0.00	0.00	0.00	1.82	2.73	0.00	0.00	0.00	0.00
1219	1220	A1.S0	10.77	0.00	5.50	0.80	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	1.60	0.00	0.00	0.00
1223	1224	A1.S0	0.48	0.00	0.00	0.00	0.00	0.00	0.32	0.16	0.05	0.00	0.42	0.00	0.21	0.00	0.00	0.00
1231	1232	A1.S0	1.75	0.00	1.49	0.61	0.13	0.00	0.31	0.00	0.00	0.00	0.44	0.35	0.74	0.00	0.00	0.00
1270	1271	A1.S0	16.46	0.00	0.84	0.00	0.00	0.00	2.53	0.00	0.42	0.00	2.53	0.42	3.38	0.00	0.00	0.00
170	171	A1.Features	1.31	0.00	0.11	0.11	0.00	0.00	0.44	0.00	0.44	0.00	0.11	0.00	0.00	0.00	0.00	0.00
	Standardized Count		**3.37**	**0.04**	**1.69**	**0.49**	**0.13**	**0.43**	**0.59**	**0.51**	**0.40**	**0.00**	**0.74**	**0.70**	**0.51**	**0.01**	**0.05**	**0.00**
	Percentage		**21%**	**0%**	**10%**	**3%**	**1%**	**3%**	**4%**	**3%**	**2%**	**0%**	**5%**	**4%**	**3%**	**0%**	**0%**	**0%**
	Ubiquity		**100%**	**25%**	**83%**	**67%**	**33%**	**42%**	**83%**	**42%**	**67%**	**0%**	**83%**	**50%**	**58%**	**8%**	**25%**	**0%**
Mound A, Southwest Midden (Late Ballina Phase)																		
648	649	A2.S0	1.84	0.00	7.14	0.54	0.32	0.00	1.41	0.65	0.11	0.22	2.16	0.00	0.43	0.11	0.00	0.00
650	651	A2.S0	2.59	0.00	3.14	0.38	0.04	0.00	1.10	0.17	0.13	0.04	1.02	0.00	0.04	0.04	0.00	0.00
702	703	A2.S0	2.39	0.00	6.06	0.58	0.06	0.00	0.64	0.00	0.00	0.12	0.64	0.06	0.23	0.00	0.00	0.12
	Standardized Count		**2.38**	**0.00**	**4.88**	**0.48**	**0.10**	**0.00**	**1.00**	**0.20**	**0.08**	**0.10**	**1.10**	**0.02**	**0.18**	**0.04**	**0.00**	**0.04**
	Percentage		**13%**	**0%**	**27%**	**3%**	**1%**	**0%**	**6%**	**1%**	**0%**	**1%**	**6%**	**0%**	**1%**	**0%**	**0%**	**0%**
	Ubiquity		**100%**	**0%**	**100%**	**100%**	**100%**	**0%**	**100%**	**67%**	**67%**	**100%**	**100%**	**33%**	**100%**	**67%**	**0%**	**33%**

Table A2.4. Continued.

Site Area / Catalog Nos. Heavy	Light	Analysis Unit	Nuts: Acorn Shell	Acorn Meat	Hickory	Pecan	Walnut	Starchy and Oily Seeds: Amaranth	Chenopod	Cheno-am	Knotweed	Little Barley	Maygrass	Smartweed	Squash Rind	Squash Seed	Sumpweed	Sunflower
Mound B Summits (Late Ballina / Early Balmoral Phase)																		
482	474	B1.S3	0.00	0.00	0.00	0.00	0.00	0.00	236.36	0.00	12.12	0.00	0.00	0.00	0.00	0.00	3.03	0.00
179	186	B1.F4	6.25	0.00	0.00	0.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	447	B1.F4	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
317	318	B1.F5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Standardized Count	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**6.90**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**
		Percentage	**1%**	**0%**	**1%**	**0%**	**0%**	**0%**	**85%**	**0%**	**3%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**
		Ubiquity	**25%**	**0%**	**25%**	**0%**	**0%**	**0%**	**50%**	**0%**	**25%**	**0%**	**0%**	**0%**	**0%**	**0%**	**25%**	**0%**
South Plaza, Feature 4 (Sundown Phase)																		
480	475	V2.F4	2.49	0.00	5.78	0.30	0.10	0.00	0.70	0.00	0.00	0.00	2.19	0.00	0.00	0.00	0.00	0.00
507	516	V2.F4	12.61	0.00	12.24	0.30	0.00	0.00	0.22	0.37	0.00	0.00	0.75	0.00	0.00	0.00	0.67	0.00
1378	1379	V2.F4	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
1381	1382	V2.F4	0.21	0.00	1.79	0.00	0.17	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	1384	V2.F4	0.35	0.23	0.00	0.00	0.00	0.58	0.23	0.00	0.58	0.00	0.92	0.00	0.00	0.00	0.00	0.00
1415	1414	V2.F4	1.55	0.00	4.96	0.12	0.36	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1416	1417	V2.F4	2.21	0.00	14.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00	0.00
1471	1451	V2.F4	4.86	0.29	5.89	0.88	0.74	0.44	8.98	1.03	0.59	0.00	5.30	0.00	0.00	0.00	0.29	0.00
		Standardized Count	**2.91**	**0.04**	**4.46**	**0.16**	**0.17**	**0.09**	**0.77**	**0.12**	**0.14**	**0.00**	**0.89**	**0.00**	**0.00**	**0.00**	**0.11**	**0.00**
		Percentage	**24%**	**0%**	**36%**	**1%**	**1%**	**1%**	**6%**	**1%**	**1%**	**0%**	**7%**	**0%**	**0%**	**0%**	**1%**	**0%**
		Ubiquity	**100%**	**25%**	**88%**	**50%**	**50%**	**38%**	**63%**	**25%**	**63%**	**0%**	**75%**	**0%**	**0%**	**0%**	**25%**	**0%**
South Plaza, Midden (Sundown Phase)																		
1293	1294	V2.Midden	47.81	0.00	1.99	0.20	0.00	7.97	0.60	0.00	0.00	0.00	1.00	0.20	0.00	0.00	0.00	0.00
1409	1410	V2.Midden	4.57	0.00	5.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	1377	V2.Mixed	1.17	0.00	0.00	0.00	0.00	0.00	1.47	0.00	0.88	0.00	3.23	0.00	0.00	0.00	0.00	0.00
		Standardized Count	**23.92**	**0.00**	**1.98**	**0.09**	**0.00**	**3.77**	**0.75**	**0.00**	**0.28**	**0.00**	**1.51**	**0.09**	**0.00**	**0.00**	**0.00**	**0.00**
		Percentage	**71%**	**0%**	**6%**	**0%**	**0%**	**11%**	**2%**	**0%**	**1%**	**0%**	**4%**	**0%**	**0%**	**0%**	**0%**	**0%**
		Ubiquity	**100%**	**0%**	**67%**	**33%**	**0%**	**33%**	**67%**	**0%**	**33%**	**0%**	**67%**	**33%**	**0%**	**0%**	**0%**	**0%**
Total Standardized Count			**3.63**	**0.03**	**3.16**	**0.33**	**0.12**	**0.34**	**1.10**	**0.27**	**0.24**	**0.02**	**0.85**	**0.27**	**0.22**	**0.01**	**0.06**	**0.01**

Table A2.5. Standardized counts (with percentages and ubiquity data) from the thirty Feltus samples (fruits and other plants).

Site Area Catalog Nos. Heavy	Light	Analysis Unit	Fruits: Bramble	Cabbage Palm	Elderberry	Grape	Hackberry	Maypop	Persimmon	Plum/Cherry	Sumac	Other Plants: Bedstraw	Cane	Carpetweed	Catchfly	Morning-glory	Nightshade	Pokeweed	Purslane
Mound A, East Midden (Early Ballina Phase)																			
169	190	A1.S0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00
178	196	A1.S0	0.13	1.62	0.00	0.13	0.00	0.13	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00
1078	1080	A1.S0	0.00	0.14	0.00	0.42	0.00	0.00	0.00	0.00	0.14	0.42	0.00	0.00	0.14	0.00	0.00	0.00	0.42
1100	1101	A1.S0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	0.00	0.00	0.00	0.00	0.00	1.49	0.00	1.49
1109	1110	A1.S0	0.00	0.77	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.34
1205	1206	A1.S0	0.00	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.48
1211	1212	A1.S0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	1.82	0.91	0.00	0.00	0.00	0.91	0.00	0.00	0.00
1219	1220	A1.S0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1223	1224	A1.S0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
1231	1232	A1.S0	0.09	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.48
1270	1271	A1.S0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	171	A1.Features	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Standardized Count	**0.03**	**0.37**	**0.00**	**0.05**	**0.00**	**0.01**	**0.04**	**0.01**	**0.04**	**0.08**	**0.01**	**0.00**	**0.01**	**0.02**	**0.02**	**0.00**	**0.38**
		Percentage	**0%**	**2%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**2%**
		Ubiquity	**17%**	**42%**	**0%**	**25%**	**0%**	**8%**	**17%**	**8%**	**25%**	**33%**	**8%**	**0%**	**8%**	**17%**	**17%**	**0%**	**50%**
Mound A, Southwest Midden (Late Ballina Phase)																			
648	649	A2.S0	0.00	0.11	0.00	0.00	0.00	0.00	2.05	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65
650	651	A2.S0	0.04	0.59	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	1.91
702	703	A2.S0	0.00	0.41	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.06	0.29
		Standardized Count	**0.02**	**0.44**	**0.00**	**0.00**	**0.00**	**0.00**	**0.58**	**0.00**	**0.02**	**0.12**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.02**	**1.12**
		Percentage	**0%**	**2%**	**0%**	**0%**	**0%**	**0%**	**3%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**6%**
		Ubiquity	**33%**	**100%**	**0%**	**0%**	**0%**	**0%**	**100%**	**0%**	**33%**	**67%**	**0%**	**33%**	**0%**	**0%**	**0%**	**33%**	**100%**

Table A2.5. Continued.

Site Area Catalog Nos. Heavy	Light	Analysis Unit	Fruits: Bramble	Cabbage Palm	Elderberry	Grape	Hackberry	Maypop	Persimmon	Plum/Cherry	Sumac	Other Plants: Bedstraw	Cane	Carpetweed	Catchfly	Morning-glory	Nightshade	Pokeweed	Purslane
Mound B Summits (Late Ballina / Early Balmoral Phase																			
482	474	B1.S3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
179	186	B1.F4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	447	B1.F4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
317	318	B1.F5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Standardized Count	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
		Percentage	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
		Ubiquity	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
South Plaza, Feature 4 (Sundown Phase)																			
480	475	V2.F4	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
507	516	V2.F4	0.00	0.07	0.00	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45
1378	1379	V2.F4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
1381	1382	V2.F4	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	1384	V2.F4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.58
1415	1414	V2.F4	0.00	0.00	0.00	0.18	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
1416	1417	V2.F4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1471	1451	V2.F4	0.00	0.00	0.15	0.59	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.43
		Standardized Count	**0.02**	**0.01**	**0.01**	**0.34**	**0.01**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.14**	**0.05**
		Percentage	**0%**	**0%**	**0%**	**3%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**10%**
		Ubiquity	**13%**	**13%**	**13%**	**63%**	**13%**	**0%**	**25%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**13%**	**38%**	**63%**
South Plaza, Midden (Sundown Phase)																			
1293	1294	V2.Midden	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1409	1410	V2.Midden	0.00	0.00	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	1377	V2.Mixed	0.29	0.00	0.00	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Standardized Count	**0.09**	**0.00**	**0.00**	**0.28**	**0.00**	**0.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
		Percentage	**0%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
		Ubiquity	**33%**	**0%**	**0%**	**67%**	**0%**	**33%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Total Standardized Count			**0.03**	**0.22**	**0.00**	**0.15**	**0.00**	**0.01**	**0.14**	**0.00**	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**0.01**	**0.01**	**0.05**	**0.36**

Table A2.6. Standardized counts (with percentages and ubiquity data) from the thirty Feltus samples (other plants, continued).

Site Area Catalog Nos. Heavy	Light	Analysis Unit	Other Plants Cont. Spurge	Vetch/Wild Pea	Unidentified Composite	Unidentified Grass	Unidentified Seed	Unidentifiable Stem Fragment	Unidentifiable Seed	TOTAL
Mound A, East Midden (Early Ballina Phase)										
169	190	A1.S0	0.00	0.00	0.00	0.00	0.00	0.00	0.52	195.87
178	196	A1.S0	0.00	0.00	0.00	0.00	2.70	0.00	0.00	122.67
1078	1080	A1.S0	0.00	0.00	0.00	0.70	0.00	0.00	7.10	636.77
1100	1101	A1.S0	0.00	0.00	0.00	1.49	1.49	1.49	26.87	6626.87
1109	1110	A1.S0	0.00	0.09	0.00	0.60	0.09	0.00	10.22	401.89
1205	1206	A1.S0	0.00	0.00	0.28	0.41	0.00	0.00	7.84	685.97
1211	1212	A1.S0	0.00	0.00	0.00	4.55	0.91	0.00	14.55	4456.36
1219	1220	A1.S0	0.00	0.00	0.00	0.11	0.00	0.00	5.04	582.70
1223	1224	A1.S0	0.00	0.00	0.00	0.05	0.11	0.00	1.27	262.34
1231	1232	A1.S0	0.00	0.00	0.00	0.04	0.09	0.00	1.88	224.66
1270	1271	A1.S0	0.00	0.00	0.00	3.80	0.00	0.00	4.22	2178.90
170	171	A1.Features	0.00	0.00	0.00	0.00	0.33	0.00	0.00	77.49
	Standardized Count		**0.00**	**0.01**	**0.02**	**0.33**	**0.30**	**0.01**	**3.80**	**15.19**
	Percentage		**0%**	**0%**	**0%**	**2%**	**2%**	**0%**	**23%**	**94%**
	Ubiquity		**0%**	**8%**	**8%**	**75%**	**58%**	**8%**	**83%**	
Mound A, Southwest Midden (Late Ballina Phase)										
648	649	A2.S0	0.00	0.00	0.00	0.43	0.97	0.00	7.78	307.46
650	651	A2.S0	0.00	0.42	0.00	0.13	0.13	0.00	2.33	125.21
702	703	A2.S0	0.06	0.00	0.00	0.52	0.12	0.00	5.07	99.48
	Standardized Count		**0.02**	**0.20**	**0.00**	**0.32**	**0.28**	**0.00**	**4.28**	**18.05**
	Percentage		**0%**	**1%**	**0%**	**2%**	**2%**	**0%**	**24%**	
	Ubiquity		**33%**	**33%**	**0%**	**100%**	**100%**	**0%**	**100%**	

Table A2.6. Continued.

Site Area Catalog Nos. Heavy	Light	Analysis Unit	Spurge	Vetch/Wild Pea	Unidentified Composite	Unidentified Grass	Unidentified Seed	Unidentifiable Stem Fragment	Unidentifiable Seed		TOTAL
			Other Plants Cont.								
Mound B Summits (Late Ballina / Early Balmoral Phase)											
482	474	B1.S3	0.00	0.00	0.00	18.18	12.12	0.00	0.00		6075.76
179	186	B1.F4	0.00	0.00	0.00	0.00	6.25	0.00	0.00		4775.00
-	447	B1.F4	0.00	0.00	0.00	0.00	0.00	0.00	0.00		58.12
317	318	B1.F5	0.00	0.00	0.00	40.00	0.00	0.00	0.00		25440.00
	Standardized Count		**0.00**	**0.00**	**0.00**	**0.50**	**0.31**	**0.00**	**0.00**		**8.16**
	Percentage		**0%**	**0%**	**0%**	**6%**	**4%**	**0%**	**0%**		
	Ubiquity		**0%**	**0%**	**0%**	**50%**	**50%**	**0%**	**0%**		
South Plaza, Feature 4 (Sundown Phase)											
480	475	V2.F4	0.00	0.00	0.00	0.00	0.50	0.00	0.00		203.69
507	516	V2.F4	0.00	0.00	0.00	0.07	0.22	0.00	0.37		182.09
1378	1379	V2.F4	0.00	0.00	0.00	0.00	0.00	0.00	0.01		5.92
1381	1382	V2.F4	0.00	0.00	0.00	0.00	0.12	0.00	0.00		232.57
-	1384	V2.F4	0.00	0.00	0.00	0.00	0.00	0.00	1.27		324.57
1415	1414	V2.F4	0.00	0.00	0.00	0.00	0.00	0.00	0.18		345.76
1416	1417	V2.F4	0.00	0.00	0.00	0.00	0.00	0.00	0.00		4183.82
1471	1451	V2.F4	0.00	0.00	0.00	0.00	0.88	0.00	2.21		908.39
	Standardized Count		**0.00**	**0.00**	**0.00**	**0.01**	**0.18**	**0.00**	**0.50**		**11.20**
	Percentage		**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**4%**		
	Ubiquity		**0%**	**0%**	**0%**	**13%**	**50%**	**0%**	**63%**		
South Plaza, Midden (Sundown Phase)											
1293	1294	V2.Midden	0.00	0.00	0.00	0.00	0.80	0.00	0.40		1091.63
1409	1410	V2.Midden	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2584.93
-	1377	V2.Mixed	0.00	0.00	0.00	0.00	0.00	0.00	0.59		815.84
	Standardized Count		**0.00**	**0.00**	**0.00**	**0.00**	**0.38**	**0.00**	**0.38**		**33.62**
	Percentage		**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**1%**		
	Ubiquity		**0%**	**0%**	**0%**	**0%**	**33%**	**0%**	**67%**		
Total Standardized Count			**0.00**	**0.04**	**0.01**	**0.21**	**0.26**	**0.00**	**2.37**	**0**	**14.61**

Table A2.7. Raw data for Feltus, Hedgeland, Lisa's Ridge, and Shackleford Lake.*

Plant Category **Taxon**	**Feltus**	**Hedgeland**	**Lisa's Ridge**	**Shackleford Lake**	**TOTAL**
Nuts					
Acorn Shell	996	631	1298	817	3742
Acorn Meat	8	9	11	0	28
Hickory	868	0	0	0	868
Pecan	90	188	155	254	687
Walnut	34	0	0	0	34
TOTAL	**1996**	**828**	**1464**	**1071**	**5359**
Starchy and Oily Seeds					
Amaranth	92	1	0	16	109
Barnyard Grass	0	291	0	0	291
Chenopod	302	511	3	3	819
Cheno-am	74	0	26	107	207
Knotweed	65	5	2	2	74
Little Barley	5	0	0	0	5
Maygrass	232	62	0	84	378
Smartweed	73	0	0	0	73
Squash Rind	61	4	3	6	74
Squash Seed	3	0	0	0	3
Sumpweed	17	0	21	4	42
Sunflower	2	8	0	0	10
TOTAL	**926**	**882**	**55**	**222**	**2085**
Fruits					
Bramble	7	1	0	11	19
Cabbage Palm	60	33	40	84	217
Elderberry	1	0	0	0	1
Grape	41	28	0	2	71
Hackberry	1	0	0	0	1
Honey Locust	0	0	1	0	1
Maypop	2	0	1	0	3
Persimmon	38	289	634	118	1079
Plum/Cherry	1	0	0	0	1
Sumac	5	0	0	0	5
TOTAL	**156**	**351**	**676**	**215**	**1398**
Other Plants					
Bean	0	0	1	12	13
Bedstraw	14	0	7	10	31
Cane	1	0	0	0	1
Carpetweed	1	0	0	0	1

Table A2.7. Continued.

Plant Category **Taxon**	**Feltus**	**Hedgeland**	**Lisa's Ridge**	**Shackleford Lake**	**TOTAL**
Catchfly	1	0	0	0	1
Morning-glory	2	0	0	0	2
Nightshade	3	0	0	2	5
Pokeweed	15	5	0	0	20
Purslane	210	4	0	32	246
Spurge	1	0	0	0	1
Vetch/Wild Pea	11	0	0	0	11
Verbena	0	0	0	2	2
Composite Family	2	0	1	0	3
Grass Family	58	2	5	3	68
Unidentified Mallow	0	3	0	0	3
Unidentified Nut Shell	0	0	13	7	20
Unidentified Seed	70	0	0	84	154
Unidentifiable Spore cluster	1	0	0	0	1
Unidentifiable Stem Frag.	1	0	0	0	1
Unidentifiable Seed	650	290	621	172	1733
TOTAL	**1041**	**304**	**648**	**324**	**2317**
GRAND TOTAL	**4119**	**2365**	**2843**	**1832**	**11159**

*Raw data for the comparative sites were drawn from Roberts (2006).

Table A2.8. Faunal assemblage from Feature 1 (NISP = 94).

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
Mammal											
390	Bear (*Ursus americanus*)	metacarpal 4	1	0	12.51	left	fused	complete	-	-	-
402	Bear (*Ursus americanus*)	femur	1	1	145.9	right	fused	complete	-	-	-
350	Gray squirrel (*Sciurus carolinensis*)	femur	1	1	0.39	left	fused	1/4-1/2	distal end	-	-
350	Gray squirrel (*Sciurus carolinensis*)	ulna	1	1	0.08	left	fused	1/4-1/2	proximal end	-	-
350	Swamp rabbit (*Sylvilagus aquaticus*)	maxilla	1	0	0.20	left	fused	1/4-1/2	-	-	-
734	Opossum (*Didelphis virginianus*)	thoracic vertebra	1	0	1.46	-	unfused	complete	-	young adult	-
363	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	14.44	left	-	<1/4	anterior proximal shaft	-	-
363	Whitetail deer (*Odocoileus virginiana*)	thoracic vertebra	1	0	1.02	-	-	1/4-1/2	anterior	-	-
350	Unidentified small/medium mammal	long bone (indeterminate)	3	2	0.46	-	-	<1/4	-	-	-
363	Unidentified medium mammal	petrous temporal	1	0	0.32	-	-	complete	-	-	-
350	Unidentified medium mammal	sacrum	1	1	0.10	-	unfused	1/4-1/2	-	-	-
350	Unidentified medium mammal	indeterminate	1	1	0.33	-	-	<1/4	-	-	-
363	Unidentified large mammal	long bone (indeterminate)	1	0	0.59	-	-	<1/4	-	-	-
348	Unidentified mammal	indeterminate	1	0	3.00	-	-	<1/4	-	-	-
422	Unidentified mammal	indeterminate	1	1	0.05	-	-	<1/4	-	-	-
390	Unidentified mammal	indeterminate	1	1	0.28	-	-	<1/4	-	-	-
376	Unidentified mammal	indeterminate	2	0	1.38	-	-	<1/4	-	-	-
363	Unidentified mammal	indeterminate	1	0	0.12	-	-	<1/4	-	-	-
350	Unidentified mammal	long bone (indeterminate)	11	5	2.27	-	-	<1/4	-	-	-
Bird											
425	Turkey (Meleagris gallopava)	phalanx (indeterminate)	1	0	0.44	-	-	complete	-	-	-
350	Rails, Gallinules, and Coots (Rallidae)	humerus	1	1	0.05	left	fused	<1/4	distal end	-	-
350	Unidentified bird	indeterminate	1	0	0.06	-	-	<1/4	-	-	-

Table A2.8. Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
Fish											
363	Alligator Gar (*Atractosteus spatula*)	post-temporal	1	0	0.24	right	-	3/4-complete	-	-	90-100
350	Blue cat (*Ictalurus furcatus*)	supraethmoid	1	0	0.40	-	-	1/4-1/2	-	-	50-60
422	Bowfin (*Amia calva*)	unidentified skull	1	1	0.02	-	-	<1/4	-	-	-
350	Bowfin (*Amia calva*)	vertebrae	1	1	0.06	-	-	1/2-3/4	-	-	30-40
350	Bowfin (*Amia calva*)	unidentified skull	1	0	0.08	-	-	-	-	-	-
350	Largemouth buffalo (*Ictiobus cyprinellus*)	articular	1	1	0.15	left	-	<1/4	-	-	-
659	Catfish family (Ictaluridae)	hyomandibular	1	1	0.47	left	-	1/4-1/2	-	-	35-40
350	Catfish family (Ictaluridae)	vertebrae	1	1	0.09	-	-	1/4-1/2	-	-	-
350	Catfish family (Ictaluridae)	cleithrum	1	1	0.06	right	-	<1/4	-	-	10-20
422	Gar family (Lepisosteidae)	maxilla/dentary	2	2	0.03	-	-	<1/4	-	-	-
350	Gar family (Lepisosteidae)	vertebrae	2	0	0.59	-	-	1/4-1/2	-	-	-
350	Gar family (Lepisosteidae)	scale	2	2	0.40	-	-	complete	-	-	-
363	Sucker family (Catastomidae)	vertebrae	1	0	0.20	-	-	3/4-complete	-	-	-
350	Sucker family (Catastomidae)	webberian apparatus	1	0	0.20	-	-	<1/4	-	-	-
350	Sunfish family (Centrarchidae)	vertebrae	1	1	0.09	-	-	1/2-3/4	-	-	-
348	Unidentified Fish (Osteichthyes)	indeterminate	1	0	0.73	-	-	-	-	-	-
422	Unidentified Fish (Osteichthyes)	indeterminate	3	3	0.06	-	-	-	-	-	-
422	Unidentified Fish (Osteichthyes)	vertebrae	4	4	0.06	-	-	-	-	-	-
422	Unidentified Fish (Osteichthyes)	unidentified rib/spine	3	3	0.39	-	-	<1/4	-	-	-
390	Unidentified Fish (Osteichthyes)	indeterminate	2	2	1.01	-	-	<1/4	-	-	-
376	Unidentified Fish (Osteichthyes)	unidentified rib/spine	1	1	0.61	-	-	3/4-complete	-	-	-
363	Unidentified Fish (Osteichthyes)	vertebrae	1	0	0.57	-	-	<1/4	-	-	-
390	Unidentified Fish (Osteichthyes)	indeterminate	1	0	0.52	-	-	<1/4	-	-	-
350	Unidentified Fish (Osteichthyes)	indeterminate	21	10	2.49	-	-	<1/4	-	-	-
350	Unidentified Fish (Osteichthyes)	dorsal spine	1	1	0.05	-	-	complete	-	-	-

Table A2.8. Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
350	Unidentified Fish (Osteichthyes)	cccipital	1	1	0.05	-	-	<1/4	-	-	-
350	Unidentified Fish (Osteichthyes)	spine support	1	1	0.17	-	-	1/4-1/2	-	-	-
350	Unidentified Fish (Osteichthyes)	indeterminate	1	0	0.15	-	-	-	-	-	-
Indeterminate											
350	Indeterminate	indeterminate	10	7	0.17	-	-	-	-	-	-
348	Indeterminate	indeterminate	1	0	0.60	-	-	-	-	-	-

Table A2.9. Faunal assemblage from the D2 midden (NISP = 2,962).

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
Mammal												
943	Bear (*Ursus americanus*)	metacarpal 2	1	0	9.30	-	left	fused	complete	-	-	-
1006	Bear (*Ursus americanus*)	phalanx (indeterminate)	1	0	1.01	butchering marks	-	fused	1/2-3/4	-	-	-
941	Bear (*Ursus americanus*)	metatarsal 3	1	0	5.40	-	right	unfused	complete	-	-	-
941	Bear (*Ursus americanus*)	phalanx 3	1	0	2.20	-	-	fused	complete	-	old	-
941	Bear (*Ursus americanus*)	tibia	1	0	4.62	-	right	-	<1/4	posterior proximal shaft	1-2 years	-
941	Bear (*Ursus americanus*)	lumbar vertebrae	1	0	33.20	-	-	fused	3/4-complete	-	old	-
941	Bear (*Ursus americanus*)	phalanx (indeterminate)	1	0	4.60	-	-	fused	complete	-	-	-
941	Bear (*Ursus americanus*)	femur	1	0	80.60	-	left	unfused	1/4-1/2	-	-	-
942	Bear (*Ursus americanus*)	phalanx (indeterminate)	1	0	0.48	-	-	-	1/4-1/2	-	-	-
1051	Bear (*Ursus americanus*)	carpal/tarsal	1	0	0.93	-	-	unfused	<1/4	epiphysis	-	-
912	Cottontail rabbit (*Sylvilagus floridanus*)	carpal/tarsal	1	0	0.12	-	-	-	-	-	-	-
942	Cottontail rabbit (*Sylvilagus floridanus*)	calcaneum	1	0	0.30	-	-	-	3/4-complete	-	-	-
912	Fox squirrel (*Sciurus nige*r)	humerus	1	0	0.70	-	left	-	3/4-complete	-	-	-
912	Fox squirrel (*Sciurus nige*r)	humerus	1	0	0.24	-	right	-	1/4-1/2	distal end	-	-
942	Fox squirrel (*Sciurus nige*r)	femur	1	0	0.20	-	left	fused	<1/4	distal end	-	-
912	Gray squirrel (*Sciurus carolinensis*)	humerus	1	0	0.17	-	right	-	1/4-1/2	distal shaft	-	-
944	Gray squirrel (*Sciurus carolinensis*)	femur	1	1	0.13	-	right	fused	<1/4	proximal end	-	-
944	Gray squirrel (*Sciurus carolinensis*)	humerus	1	0	0.32	-	right	-	1/4-1/2	shaft	-	-
944	Gray squirrel (*Sciurus carolinensis*)	ulna	1	0	0.10	-	right	-	1/4-1/2	proximal end	-	-
1006	Gray squirrel (*Sciurus carolinensis*)	humerus	1	0	0.11	-	right	fused	<1/4	distal end	-	-
942	Gray squirrel (*Sciurus carolinensis*)	tibia	1	1	0.10	-	right	fused	<1/4	proximal end	-	-
942	Gray squirrel (*Sciurus carolinensis*)	femur	1	1	0.30	-	right	-	1/4-1/2	prox shaft	-	-
942	Gray squirrel (*Sciurus carolinensis*)	tooth	1	0	0.22	-	-	-	3/4-complete	anterior	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
912	Mole (*Scalopus aquaticus*)	humerus	1	0	0.25	-	right	fused	3/4-complete	-	-	-
944	Opossum (*Didelphis virginianus*)	lumbar vertebrae	1	0	0.82	-	-	-	complete	-	-	-
942	Raccoon (*Procyon lotor*)	mandible /dentary	1	0	0.70	-	left	-	<1/4	posterior	-	-
912	Swamp rabbit (*Sylvilagus aquaticus*)	innominate	1	0	0.76	-	right	-	1/4-1/2	-	-	-
912	Swamp rabbit (*Sylvilagus aquaticus*)	scapula	1	0	0.54	-	left	-	1/4-1/2	medial	-	-
1025	Swamp rabbit (*Sylvilagus aquaticus*)	humerus	1	0	0.45	-	right	fused	1/4-1/2	distal end	-	-
943	Swamp rabbit (*Sylvilagus aquaticus*)	tibia	1	0	1.90	-	left	fused	1/2-3/4	proximal end	-	-
944	Swamp rabbit (*Sylvilagus aquaticus*)	tibia	1	0	0.24	-	-	-	<1/4	distal end	-	-
1006	Swamp rabbit (*Sylvilagus aquaticus*)	femur	1	0	0.18	-	left	fused	<1/4	proximal end	-	-
1006	Swamp rabbit (*Sylvilagus aquaticus*)	humerus	1	0	0.36	-	right	fused	1/4-1/2	distal end	-	-
941	Swamp rabbit (*Sylvilagus aquaticus*)	innominate	1	0	0.09	-	right	fused	1/4-1/2	-	-	-
941	Swamp rabbit (*Sylvilagus aquaticus*)	vertebrae	1	0	0.08	-	-	fused	3/4-complete	-	-	-
912	Whitetail deer (*Odocoileus virginiana*)	sesamoid	3	0	0.92	-	-	-	complete	-	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	28.50	-	right	-	<1/4	distal shaft	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	40.80	-	right	fused	1/4-1/2	distal end	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	radius	1	0	10.60	-	right	fused	1/4-1/2	proximal end	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	radius	1	0	11.80	-	left	fused	<1/4	distal end	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	20.50	-	right	fused	<1/4	proximal end	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	9.50	-	left	-	<1/4	prox shaft	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	petrous temporal	1	0	8.30	-	left	-	complete	-	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	thoracic vertebrae	1	0	3.10	-	-	-	<1/4	posterior	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	cervical vertebrae	1	0	2.70	-	-	-	1/4-1/2	-	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	tibia	1	1	9.50	-	left	fused	<1/4	distal end	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	3.20	-	-	fused	<1/4	proximal end	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
1005	Whitetail deer (*Odocoileus virginiana*)	vertebrae	1	0	1.50	-	-	-	<1/4	-	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	tibia	1	0	4.30	-	-	-	<1/4	shaft	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	innominate	1	0	3.10	-	left	fused	<1/4	medial	-	-
1005	Whitetail deer (*Odocoileus virginiana*)	patella	1	0	4.70	-	left	fused	3/4-complete	-	-	-
1025	Whitetail deer (*Odocoileus virginiana*)	phalanx (indeterminate)	1	0	0.82	-	-	fused	<1/4	articulation	-	-
1025	Whitetail deer (*Odocoileus virginiana*)	phalanx (indeterminate)	1	0	0.55	-	-	unfused	<1/4	articulation	-	-
1284	Whitetail deer (*Odocoileus virginiana*)	lumbar vertebrae	1	0	0.35	-	-	-	<1/4	posterior	-	-
1284	Whitetail deer (*Odocoileus virginiana*)	antler	1	0	0.50	-	-	-	<1/4	-	-	-
1032	Whitetail deer (*Odocoileus virginiana*)	sesamoid	1	1	0.40	-	-	-	complete	-	-	-
943	Whitetail deer (*Odocoileus virginiana*)	ilium	1	0	21.60	-	left	-	1/4-1/2	-	-	-
943	Whitetail deer (*Odocoileus virginiana*)	humerus	1	0	21.50	-	left	-	1/4-1/2	distal end	-	-
943	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	2.30	-	right	unfused	<1/4	epiphysis	-	-
943	Whitetail deer (*Odocoileus virginiana*)	lumbar vertebrae	1	0	30.20	-	-	fused	complete	-	-	-
943	Whitetail deer (*Odocoileus virginiana*)	lumbar vertebrae	1	0	25.90	-	-	fusing	3/4-complete	-	-	-
943	Whitetail deer (*Odocoileus virginiana*)	lumbar vertebrae	1	0	7.20	-	-	-	<1/4	-	-	-
943	Whitetail deer (*Odocoileus virginiana*)	innominate	1	0	18.00	-	right	fused	1/4-1/2	medial	-	-
943	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	12.10	-	-	-	<1/4	distal shaft	-	-
943	Whitetail deer (*Odocoileus virginiana*)	tibia	1	0	9.10	-	right	-	<1/4	anterior proximal shaft	-	-
943	Whitetail deer (*Odocoileus virginiana*)	phalanx (indeterminate)	1	1	5.80	-	-	fused	complete	-	-	-
943	Whitetail deer (*Odocoileus virginiana*)	phalanx (indeterminate)	1	0	1.10	-	-	fused	1/4-1/2	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
943	Whitetail deer (*Odocoileus virginiana*)	phalanx 3	1	0	2.50	-	-	fused	complete	-	-	-
943	Whitetail deer (*Odocoileus virginiana*)	rib	2	0	3.40	-	-	-	<1/4	shaft	-	-
943	Whitetail deer (*Odocoileus virginiana*)	metapodial (indeterminate)	1	0	21.30	-	-	fused	1/4-1/2	distal shaft	-	-
1024	Whitetail deer (*Odocoileus virginiana*)	metapodial (indeterminate)	1	0	3.20	-	-	-	<1/4	shaft	-	-
1024	Whitetail deer (*Odocoileus virginiana*)	tibia	1	0	20.00	-	left	unfused	<1/4	proximal shaft	-	-
1024	Whitetail deer (*Odocoileus virginiana*)	calcaneum	1	0	35.50	butchering marks	left	fused	complete	-	-	-
1024	Whitetail deer (*Odocoileus virginiana*)	humerus	1	0	79.10	butchering marks	left	fused	<1/4	distal end	-	-
1024	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	76.50	-	right	fused	<1/4	distal end	-	-
944	Whitetail deer (*Odocoileus virginiana*)	sesamoid	1	0	0.51	-	-	-	complete	-	-	-
944	Whitetail deer (*Odocoileus virginiana*)	vertebrae	2	1	0.91	-	-	-	<1/4	-	-	-
944	Whitetail deer (*Odocoileus virginiana*)	phalanx (indeterminate)	1	0	0.41	-	-	fused	<1/4	-	-	-
944	Whitetail deer (*Odocoileus virginiana*)	phalanx (indeterminate)	2	0	0.36	-	-	unfused	<1/4	-	1-5 months	-
944	Whitetail deer (*Odocoileus virginiana*)	ulna	1	0	1.00	-	-	unfused	<1/4	epiphysis	-	-
1006	Whitetail deer (*Odocoileus virginiana*)	ulna	1	1	0.52	-	-	fused	<1/4	medial proximal end	-	-
1006	Whitetail deer (*Odocoileus virginiana*)	ulna	1	0	0.63	-	-	-	<1/4	proximal end	-	-
1006	Whitetail deer (*Odocoileus virginiana*)	dew claw	1	0	0.10	-	-	-	complete	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	4.00	-	-	unfused	<1/4	anterior proximal shaft	-	-
941	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	29.90	-	right	unfused	1/4-1/2	proximal end	-	-
941	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	6.00	-	-	fused	<1/4	proximal end	-	-
941	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	4.50	-	right	unfused	<1/4	epiphysis	1-2 years	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
941	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	1.40	-	right	-	1/4-1/2	anterior distal shaft	1-2 months	-
941	Whitetail deer (*Odocoileus virginiana*)	radial carpal	1	0	2.80	-	left	fused	1/4-1/2	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	cervical vertebrae	1	0	10.55	-	-	-	<1/4	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	ulna	1	0	14.90	-	right	fused	<1/4	proximal end	-	-
941	Whitetail deer (*Odocoileus virginiana*)	scapula	1	0	39.20	-	left	fused	1/4-1/2	medial	-	-
941	Whitetail deer (*Odocoileus virginiana*)	axis	1	0	77.10	-	-	fused	complete	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	atlas	1	0	26.90	-	-	fused	complete	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	radius	1	1	14.80	-	left	fused	1/4-1/2	proximal end	-	-
941	Whitetail deer (*Odocoileus virginiana*)	radius	1	0	1.40	-	right	-	<1/4	distal end	1-3 months	-
941	Whitetail deer (*Odocoileus virginiana*)	astragalus	1	0	7.60	-	right	fused	complete	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	thoracic vertebrae	2	0	15.70	-	-	unfused	1/2-3/4	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	thoracic vertebrae	3	0	4.90	-	-	-	<1/4	posterior	-	-
941	Whitetail deer (*Odocoileus virginiana*)	vertebrae	3	0	14.90	-	-	-	<1/4	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	lumbar vertebrae	2	0	34.50	-	-	unfused	3/4-complete	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	lumbar vertebrae	3	0	52.50	-	-	partial	3/4-complete	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	lumbar vertebrae	3	0	#####	-	-	fused	3/4-complete	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	innominate	1	0	7.00	-	left	fused	<1/4	medial	-	-
941	Whitetail deer (*Odocoileus virginiana*)	ilium	1	0	5.10	-	left	fused	<1/4	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	humerus	2	0	37.80	-	left	fused	<1/4	distal end	-	-
941	Whitetail deer (*Odocoileus virginiana*)	scapula	1	0	1.60	-	-	fused	<1/4	medial	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
941	Whitetail deer (*Odocoileus virginiana*)	lumbar vertebrae	1	0	2.80	-	-	fused	1/4-1/2	posterior	-	-
941	Whitetail deer (*Odocoileus virginiana*)	vertebrae	2	0	6.90	-	-	fused	1/4-1/2	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	vertebrae	2	0	2.40	-	-	fused	<1/4	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	thoracic vertebrae	1	0	3.80	-	-	fused	3/4-complete	posterior	-	-
941	Whitetail deer (*Odocoileus virginiana*)	lumbar vertebrae	1	0	1.50	-	-	fused	<1/4	proximal end	-	-
941	Whitetail deer (*Odocoileus virginiana*)	cervical vertebrae	1	0	0.50	-	-	unfused	1/4-1/2	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	rib	2	1	4.90	-	-	fused	-	articulation	-	-
941	Whitetail deer (*Odocoileus virginiana*)	rib	1	0	1.60	-	-	fused	1/4-1/2	shaft	-	-
941	Whitetail deer (*Odocoileus virginiana*)	metapodial (indeterminate)	1	1	1.20	-	-	fused	<1/4	distal end	-	-
941	Whitetail deer (*Odocoileus virginiana*)	tooth	1	0	1.00	-	-	-	<1/4	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	petrous temporal	1	0	8.60	-	-	fused	3/4-complete	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	maxilla	1	0	0.90	-	-	fused	<1/4	-	-	-
941	Whitetail deer (*Odocoileus virginiana*)	scapula	1	0	9.80	-	left	fused	1/4-1/2	medial	-	-
941	Whitetail deer (*Odocoileus virginiana*)	cervical vertebrae	1	0	6.70	-	-	-	<1/4	anterior	-	-
942	Whitetail deer (*Odocoileus virginiana*)	radius	1	1	0.60	-	left	fused	<1/4	proximal shaft	-	-
942	Whitetail deer (*Odocoileus virginiana*)	phalanx 3	1	0	0.43	-	-	-	<1/4	-	faun	-
942	Whitetail deer (*Odocoileus virginiana*)	mandible/ dentary	2	0	0.54	-	-	-	<1/4	-	-	-
942	Whitetail deer (*Odocoileus virginiana*)	vertebrae	2	0	1.29	-	-	-	<1/4	-	-	-
942	Whitetail deer (*Odocoileus virginiana*)	sesamoid	1	0	0.28	-	-	-	complete	-	-	-
942	Whitetail deer (*Odocoileus virginiana*)	dew claw	1	0	0.37	-	-	-	complete	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
942	Whitetail deer (*Odocoileus virginiana*)	femur	1	0	0.64	-	-	-	<1/4	shaft	< 1 week	-
942	Whitetail deer (*Odocoileus virginiana*)	vertebrae	1	0	0.20	-	-	-	1/4-1/2	-	< 1 week	-
942	Whitetail deer (*Odocoileus virginiana*)	thoracic vertebrae	1	1	0.11	-	-	-	1/4-1/2	-	< 1 week	-
942	Whitetail deer (*Odocoileus virginiana*)	metapodial (indeterminate)	1	0	0.42	-	-	-	<1/4	proximal shaft	< 1 week	-
942	Whitetail deer (*Odocoileus virginiana*)	rib	1	0	0.38	-	-	-	<1/4	shaft	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	radius	1	0	33.25	-	right	fused	1/4-1/2	proximal end	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	tibia	1	0	8.04	-	right	-	<1/4	anterior proximal shaft	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	phalanx (indeterminate)	1	0	8.64	-	-	fused	complete	-	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	thoracic vertebrae	3	0	26.41	-	-	unfused	1/4-1/2	-	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	rib	2	0	5.02	-	-	fused	<1/4	articulation	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	vertebrae	2	0	8.33	-	-	unfused	1/4-1/2	-	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	cervical vertebrae	4	0	42.12	-	-	fusing	1/4-1/2	-	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	scapula	1	0	16.74	-	left	fused	1/4-1/2	medial	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	vertebrae	4	1	3.29	-	-	fusing	<1/4	-	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	astragalus	1	0	16.16	-	left	fused	complete	-	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	femur	3	0	3.36	-	left	fused	<1/4	posterior distal shaft	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	radial carpal	1	1	4.25	-	right	fused	complete	-	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	central-tarsal 4	1	0	1.58	-	right	fused	complete	-	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	carpal 2-3	1	0	2.01	-	right	fused	complete	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
1051	Whitetail deer (*Odocoileus virginiana*)	intermediate carpal	1	0	1.87	-	left	fused	complete	-	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	lateral malleolus	1	0	1.03	-	right	fused	complete	-	-	-
1051	Whitetail deer (*Odocoileus virginiana*)	lumbar vertebrae	1	0	1.69	-	-	-	<1/4	-	-	-
944	Woodland Vole (*Microtus pinetorum*)	mandible/ dentary	1	1	0.04	-	left	fused	3/4-complete	-	-	-
944	Squirrel family (Sciuridae)	maxilla	1	0	0.08	-	left	-	<1/4	-	-	-
912	Unidentified small mammal	vertebrae	3	0	0.29	-	-	-	1/2-3/4	-	-	-
1025	Unidentified small mammal	vertebrae	1	0	0.08	-	-	unfused	3/4-complete	-	-	-
944	Unidentified small mammal	metapodial (indeterminate)	1	0	0.07	-	-	-	1/2-3/4	shaft	-	-
912	Unidentified small/medium mammal	long bone (indeterminate)	15	8	1.35	-	-	-	<1/4	shaft	-	-
912	Unidentified small/medium mammal	rib	2	1	0.18	-	-	-	<1/4	-	-	-
1025	Unidentified small/medium mammal	indeterminate	4	4	0.75	-	-	-	-	-	-	-
1006	Unidentified small/medium mammal	vertebrae	4	0	0.32	-	-	-	1/4-1/2	-	-	-
1006	Unidentified small/medium mammal	long bone (indeterminate)	1	0	0.16	-	-	-	<1/4	epiphysis	-	-
941	Unidentified small/medium mammal	tibia	1	1	0.85	-	-	fused	<1/4	proximal end	-	-
941	Unidentified small/medium mammal	long bone (indeterminate)	1	0	0.24	-	-	-	<1/4	shaft	-	-
942	Unidentified small/medium mammal	long bone (indeterminate)	21	6	6.15	-	-	-	-	-	-	-
942	Unidentified small/medium mammal	vertebrae	1	0	0.05	-	-	unfused	complete	epiphysis	-	-
1051	Unidentified small/medium mammal	vertebrae	2	0	0.59	-	-	-	<1/4	epiphysis	-	-
912	Unidentified medium mammal	tibia	1	0	0.78	-	-	-	1/4-1/2	shaft	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
912	Unidentified medium mammal	vertebrae	5	0	1.61	-	-	-	-	-	-	-
912	Unidentified medium mammal	sesamoid	1	0	0.06	-	-	-	complete	-	-	-
912	Unidentified medium mammal	indeterminate	1	0	0.17	-	-	-	-	-	-	-
912	Unidentified medium mammal	carpal/tarsal	1	0	0.42	-	-	unfused	complete	-	-	-
912	Unidentified medium mammal	long bone (indeterminate)	1	0	0.82	-	-	-	-	shaft	-	-
944	Unidentified medium mammal	long bone (indeterminate)	13	10	1.83	-	-	-	-	-	-	-
941	Unidentified medium mammal	long bone (indeterminate)	8	0	6.60	-	-	-	<1/4	-	-	-
941	Unidentified medium mammal	vertebrae	1	0	0.90	-	-	-	<1/4	-	-	-
1051	Unidentified medium mammal	scapula	1	0	1.64	-	-	-	<1/4	medial	-	-
1051	Unidentified medium mammal	thoracic vertebrae	1	1	1.76	-	-	-	<1/4	-	-	-
1005	Unidentified large/medium mammal	long bone (indeterminate)	13	5	16.30	-	-	-	-	-	-	-
1025	Unidentified large/medium mammal	rib	2	2	0.58	-	-	-	-	-	-	-
1284	Unidentified large/medium mammal	long bone (indeterminate)	7	5	1.38	-	-	-	<1/4	-	-	-
943	Unidentified large/medium mammal	long bone (indeterminate)	4	0	7.70	-	-	-	-	-	-	-
943	Unidentified large/medium mammal	vertebrae	2	0	2.40	-	-	-	-	-	-	-
1024	Unidentified large/medium mammal	indeterminate	2	0	2.90	-	-	-	-	-	-	-
1024	Unidentified large/medium mammal	long bone (indeterminate)	1	1	2.00	-	-	-	-	-	-	-
1006	Unidentified large/medium mammal	vertebrae	2	1	0.41	-	-	-	<1/4	-	-	-
912	Unidentified large mammal	vertebrae	1	0	0.47	-	-	unfused	complete	epiphysis	-	-
912	Unidentified large mammal	vertebrae	8	5	2.68	-	-	-	<1/4	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
912	Unidentified large mammal	indeterminate	67	24	21.67	-	-	-	-	-	-	-
912	Unidentified large mammal	long bone (indeterminate)	34	8	15.72	-	-	-	-	shaft	-	-
912	Unidentified large mammal	rib	38	7	11.99	-	-	-	-	-	-	-
912	Unidentified large mammal	long bone (indeterminate)	1	0	2.09	-	-	-	-	shaft	-	-
1005	Unidentified large mammal	skull fragment (indeterminate)	5	0	54.60	-	-	-	-	-	-	-
1005	Unidentified large mammal	rib	3	0	1.50	-	-	-	-	shaft	-	-
1005	Unidentified large mammal	long bone (indeterminate)	3	0	7.30	-	-	-	-	-	-	-
1025	Unidentified large mammal	long bone (indeterminate)	3	2	2.21	-	-	-	<1/4	-	-	-
1025	Unidentified large mammal	indeterminate	1	1	0.65	-	-	-	-	-	-	-
1286	Unidentified large mammal	long bone (indeterminate)	2	2	0.70	-	-	-	<1/4	-	-	-
1286	Unidentified large mammal	rib	2	0	0.80	-	-	-	<1/4	-	-	-
1283	Unidentified large mammal	long bone (indeterminate)	1	1	1.24	-	-	-	<1/4	-	-	-
1032	Unidentified large mammal	indeterminate	1	0	0.91	-	-	-	<1/4	-	-	-
1408	Unidentified large mammal	long bone (indeterminate)	6	6	1.56	-	-	-	<1/4	-	-	-
943	Unidentified large mammal	long bone (indeterminate)	1	0	17.70	-	-	-	-	-	-	-
943	Unidentified large mammal	indeterminate	1	0	3.20	-	-	-	-	-	-	-
944	Unidentified large mammal	rib	12	3	3.20	-	-	-	-	-	-	-
944	Unidentified large mammal	indeterminate	18	5	6.72	-	-	-	-	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
944	Unidentified large mammal	long bone (indeterminate)	20	6	13.49	-	-	-	-	-	-	-
944	Unidentified large mammal	costal cartilage	2	0	1.11	-	-	-	-	-	-	-
944	Unidentified large mammal	vertebrae	4	0	1.97	-	-	-	-	-	-	-
1006	Unidentified large mammal	rib	26	0	6.00	-	-	-	1/4-1/2	-	-	-
1006	Unidentified large mammal	long bone (indeterminate)	49	10	22.62	-	-	-	-	-	-	-
1006	Unidentified large mammal	indeterminate	69	1	17.24	-	-	-	-	-	-	-
1006	Unidentified large mammal	vertebrae	6	1	3.23	-	-	-	-	-	-	-
1006	Unidentified large mammal	carpal/tarsal	1	0	0.76	-	-	-	<1/4	-	-	-
1006	Unidentified large mammal	skull fragment (indeterminate)	1	0	0.56	-	-	-	<1/4	-	-	-
941	Unidentified large mammal	long bone (indeterminate)	8	0	14.40	-	-	-	<1/4	-	-	-
941	Unidentified large mammal	rib	3	1	4.10	-	-	-	<1/4	shaft	-	-
941	Unidentified large mammal	indeterminate	12	0	19.40	-	-	-	<1/4	-	-	-
941	Unidentified large mammal	skull fragment (indeterminate)	2	0	12.00	-	-	-	-	-	-	-
941	Unidentified large mammal	long bone (indeterminate)	2	0	3.60	-	-	-	-	-	-	-
941	Unidentified large mammal	rib	1	1	2.00	-	-	-	<1/4	shaft	-	-
942	Unidentified large mammal	vertebrae	4	2	1.66	-	-	-	<1/4	-	-	-
942	Unidentified large mammal	skull fragment (indeterminate)	5	0	3.08	-	-	-	-	-	-	-
942	Unidentified large mammal	indeterminate	56	10	24.36	-	-	-	-	-	-	-
942	Unidentified large mammal	rib	30	16	15.39	-	-	-	-	-	-	-
942	Unidentified large mammal	long bone (indeterminate)	21	7	14.38	-	-	-	-	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
942	Unidentified large mammal	vertebrae	2	0	1.04	-	-	-	-	-	-	-
1051	Unidentified large mammal	rib	7	0	13.22	-	-	-	<1/4	-	-	-
1051	Unidentified large mammal	long bone (indeterminate)	9	1	18.65	-	-	-	<1/4	-	-	-
1051	Unidentified large mammal	vertebrae	1	1	2.36	-	-	-	<1/4	-	-	-
1051	Unidentified large mammal	skull fragment (indeterminate)	1	0	2.91	-	-	-	<1/4	-	-	-
912	Unidentified mammal	indeterminate	205	48	15.56	-	-	-	-	-	-	-
912	Unidentified mammal	long bone (indeterminate)	1	0	0.27	-	-	unfused	complete	epiphysis	-	-
1005	Unidentified mammal	long bone (indeterminate)	1	1	1.10	-	-	-	-	-	-	-
1005	Unidentified mammal	indeterminate	47	2	45.20	-	-	-	-	-	-	-
1025	Unidentified mammal	indeterminate	11	0	2.43	-	-	-	-	-	-	-
1309	Unidentified mammal	indeterminate	5	5	2.09	-	-	-	<1/4	-	-	-
943	Unidentified mammal	vertebrae	3	0	2.70	-	-	-	<1/4	-	-	-
944	Unidentified mammal	indeterminate	110	12	11.69	-	-	-	-	-	-	-
1006	Unidentified mammal	indeterminate	139	11	10.55	-	-	-	-	-	-	-
1284	Unidentified mammal	indeterminate	16	8	2.34	-	-	-	<1/4	-	-	-
941	Unidentified mammal	indeterminate	39	13	38.50	-	-	-	<1/4	-	-	-
941	Unidentified mammal	indeterminate	31	0	0.71	-	-	-	-	-	-	-
942	Unidentified mammal	indeterminate	375	36	55.93	-	-	-	-	-	-	-
1051	Unidentified mammal	indeterminate	6	1	4.25	-	-	-	<1/4	-	-	-
1051	Unidentified mammal	indeterminate	41	0	0.22	-	-	-	-	-	-	-
Bird												
912	Turkey (*Meleagris gallopava*)	tarsometatarsus	1	0	0.60	-	left	-	1/4-1/2	distal end	-	-
1025	Turkey (*Meleagris gallopava*)	phalanx (indeterminate)	1	1	0.20	-	-	fused	3/4-complete	shaft	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
943	Turkey (*Meleagris gallopava*)	lumbar vertebrae	1	0	0.90	-	-	fused	1/2-3/4	-	-	-
944	Turkey (*Meleagris gallopava*)	carpometacarpus	1	0	0.24	-	right	fused	<1/4	-	-	-
941	Turkey (*Meleagris gallopava*)	tibiotarsus	1	0	10.80	-	left	fused	1/4-1/2	distal end	-	-
941	Turkey (*Meleagris gallopava*)	lumbar vertebrae	1	0	1.60	-	-	fused	3/4-complete	-	-	-
941	Turkey (*Meleagris gallopava*)	humerus	1	0	0.90	-	right	fused	<1/4	distal end	-	-
941	Turkey (*Meleagris gallopava*)	sternebrae	1	0	1.20	-	-	fused	<1/4	posterior	-	-
941	Turkey (*Meleagris gallopava*)	humerus	1	0	0.81	-	right	fused	<1/4	posterior proximal shaft	-	-
941	Turkey (*Meleagris gallopava*)	humerus	1	0	1.02	-	right	fused	<1/4	proximal end	-	-
942	Turkey (*Meleagris gallopava*)	long bone (indeterminate)	6	1	1.17	-	-	-	<1/4	-	-	-
1051	Turkey (*Meleagris gallopava*)	femur	1	0	3.20	-	left	fused	1/4-1/2	proximal shaft	-	-
912	Unidentified large bird	indeterminate	1	0	0.18	-	-	-	-	-	-	-
912	Unidentified large bird	long bone	3	0	1.02	-	-	-	-	shaft	-	-
912	Unidentified bird	long bone	1	0	0.65	-	-	-	-	shaft	-	-
912	Unidentified bird	indeterminate	22	13	2.78	-	-	-	-	-	-	-
944	Unidentified bird	long bone	3	0	0.71	-	-	-	-	-	-	-
944	Unidentified bird	indeterminate	9	0	1.08	-	-	-	-	-	-	-
941	Unidentified bird	indeterminate	2	0	1.10	-	-	-	<1/4	-	-	-
942	Unidentified bird	indeterminate	13	0	2.32	-	-	-	<1/4	-	-	-
942	Unidentified bird	long bone	1	1	0.07	-	-	-	-	-	-	-
1051	Unidentified bird	indeterminate	1	1	0.63	-	-	-	<1/4	-	-	-
Reptile												
1025	Box turtle (*Terrapene* sp.)	carapace	1	1	0.37	-	-	-	<1/4	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
941	Box turtle (*Terrapene* sp.)	carapace	2	0	0.90	-	-	-	<1/4	-	-	-
941	Box turtle (*Terrapene* sp.)	plastron	1	0	0.40	-	-	-	complete	-	-	-
942	Box turtle (*Terrapene* sp.)	plastron	1	0	0.39	-	-	-	1/2-3/4	-	-	-
942	Box turtle (*Terrapene* sp.)	carapace	1	0	0.30	-	-	-	<1/4	-	-	-
1051	Cooter/slider/map turtle (Aquatic Emydid	peripheral	1	1	2.04	-	-	-	1/4-1/2	-	-	-
942	Mud/musk turtle (Kinosternidae)	peripheral	2	1	0.43	-	-	-	3/4-complete	-	-	-
941	Box/water turtle (Emydidae)	carapace	3	0	2.00	-	-	-	<1/4	-	-	-
912	Unidentified turtle	femur	1	1	0.11	-	left	-	<1/4	proximal end	-	-
912	Unidentified turtle	carapace	9	4	1.30	-	-	-	<1/4	-	-	-
912	Unidentified turtle	long bone	1	0	0.05	-	-	-	-	shaft	-	-
1036	Unidentified turtle	carapace	1	1	0.10	-	-	-	<1/4	-	-	-
944	Unidentified turtle	femur	1	1	0.11	-	left	-	1/4-1/2	proximal end	-	-
944	Unidentified turtle	carapace	10	3	2.25	-	-	-	<1/4	-	-	-
1006	Unidentified turtle	carapace	14	0	2.37	-	-	-	<1/4	-	-	-
942	Unidentified turtle	carapace	7	2	1.25	-	-	-	<1/4	-	-	-
942	Unidentified turtle	carapace	1	1	0.32	-	-	-	<1/4	-	-	-
942	King/rat/corn snake (*Elaphe/Lampropeltis* sp.)	vertebrae	2	0	0.13	-	-	-	complete	-	-	-
912	Viper (Viperidae)	vertebrae	1	0	0.04	-	-	-	3/4-complete	-	-	-
1025	Non-poisonous snake (Colubridae)	vertebrae	4	0	0.43	-	-	-	complete	-	-	-
912	Non-poisonous snake (Colubridae)	vertebrae	1	0	0.08	-	-	-	3/4-complete	-	-	-
944	Non-poisonous snake (Colubridae)	vertebrae	2	0	0.15	-	-	-	3/4-complete	-	-	-
1006	Non-poisonous snake (Colubridae)	vertebrae	11	0	0.97	-	-	-	1/4-1/2	-	-	-
912	Unidentified snake	vertebrae	1	0	0.06	-	-	-	1/4-1/2	-	-	-
Fish												

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
1024	Alligator gar (*Atractosteus spatula*)	vertebrae	1	0	5.10	-	-	-	3/4-complete	-	-	>120
1006	Alligator gar (*Atractosteus spatula*)	vertebrae	2	0	1.48	-	-	-	1/4-1/2	-	-	-
943	Alligator gar (*Atractosteus spatula*)	vertebrae	2	0	11.30	-	-	-	3/4-complete	-	-	100-
941	Blue cat (*Ictalurus furcatus*)	basioccipital	1	0	0.70	-	-	-	1/4-1/2	-	-	80-100
912	Blue cat (*Ictalurus furcatus*)	articular	1	0	0.13	-	-	-	<1/4	-	-	40-50
1293	Bowfin (*Amia calva*)	parasphenoid	1	0	0.41	-	-	-	<1/4	-	-	-
944	Bowfin (*Amia calva*)	hyomandibular	1	0	0.19	-	-	-	1/4-1/2	-	-	-
1006	Bowfin (*Amia calva*)	vertebrae	1	0	0.04	-	-	-	3/4-complete	-	-	30-40
1006	Bowfin (*Amia calva*)	maxilla/dentary	1	0	0.14	-	-	-	<1/4	-	-	-
942	Bowfin (*Amia calva*)	vertebrae	2	0	0.20	-	-	-	complete	-	-	-
942	Bowfin (*Amia calva*)	atlas	1	0	0.10	-	-	-	complete	-	-	-
1006	Freshwater drum (*Aplodinotis grunniens*)	vertebrae	1	0	0.06	-	-	-	3/4-complete	-	-	15-20.
1025	Freshwater drum (*Aplodinotis grunniens*)	pharyngeal arch	1	0	0.15	-	-	-	1/4-1/2	-	-	-
1031	Freshwater drum (*Aplodinotis grunniens*)	pharyngeal plate (indeterminate)	1	0	0.04	-	-	-	<1/4	-	-	-
944	Freshwater drum (*Aplodinotis grunniens*)	vertebrae	2	0	0.31	-	-	-	3/4-complete	-	-	-
944	Freshwater drum (*Aplodinotis grunniens*)	pharyngeal arch	1	1	0.13	-	-	-	<1/4	-	-	-
943	Freshwater drum (*Aplodinotis grunniens*)	vertebrae	1	0	0.60	-	-	-	complete	-	-	30-40
912	Freshwater drum (*Aplodinotis grunniens*)	mandible /dentary	1	0	0.20	-	-	-	1/4-1/2	-	-	-
912	Freshwater drum (*Aplodinotis grunniens*)	articular	1	1	0.14	-	-	-	1/4-1/2	-	-	-
912	Freshwater drum (*Aplodinotis grunniens*)	quadrate	1	0	0.26	-	right	-	1/4-1/2	-	-	30-40
912	Freshwater drum (*Aplodinotis grunniens*)	vertebrae	5	0	1.13	-	-	-	1/2-3/4	-	-	-
941	Freshwater drum (*Aplodinotis grunniens*)	pharyngeal arch	1	0	1.50	-	left	-	complete	-	-	25-30
942	Freshwater drum (*Aplodinotis grunniens*)	pharyngeal arch	1	0	0.10	-	-	-	3/4-complete	-	-	20-30
942	Freshwater drum (*Aplodinotis grunniens*)	dorsal spine	2	0	2.50	-	-	-	1/2-3/4	-	-	60-70
942	Freshwater drum (*Aplodinotis grunniens*)	cleithrum	1	0	0.53	-	left	-	1/2-3/4	-	-	-
1051	Freshwater drum (*Aplodinotis grunniens*)	vertebrae	1	0	0.68	-	-	-	complete	-	-	-
942	Freshwater drum (*Aplodinotis grunniens*)	basioccipital	1	0	0.15	-	-	-	3/4-complete	-	-	25-35

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
944	Largemouth buffalo (*Ictiobus cyprinellus*)	hyomandibular	1	0	0.73	-	left	-	1/4-1/2	-	-	35-40
944	Largemouth buffalo (*Ictiobus cyprinellus*)	articular	1	0	0.13	-	-	-	1/4-1/2	-	-	35-40
944	Largemouth buffalo (*Ictiobus cyprinellus*)	articular	1	0	0.09	-	-	-	1/4-1/2	-	-	30-35
944	Largemouth buffalo (*Ictiobus cyprinellus*)	basioccipital	1	0	0.43	-	-	-	3/4-complete	-	-	30-40
941	Largemouth buffalo (*Ictiobus cyprinellus*)	cleithrum	1	0	1.16	-	left	-	1/4-1/2	-	-	-
941	Largemouth buffalo (*Ictiobus cyprinellus*)	iccipital	1	0	1.02	-	-	-	1/4-1/2	-	-	-
941	Largemouth buffalo (*Ictiobus cyprinellus*)	skull fragment (indeterminate)	1	0	0.74	-	-	-	<1/4	-	-	-
942	Largemouth buffalo (*Ictiobus cyprinellus*)	mandible /dentary	1	1	0.41	-	right	-	3/4-complete	-	-	45-50
942	Largemouth buffalo (*Ictiobus cyprinellus*)	frontal	1	0	0.81	-	-	-	1/4-1/2	-	-	-
942	Largemouth buffalo (*Ictiobus cyprinellus*)	skull fragment (indeterminate)	2	0	0.87	-	-	-	<1/4	-	-	-
1051	Largemouth buffalo (*Ictiobus cyprinellus*)	vertebrae	1	0	0.88	-	-	-	3/4-complete	-	-	-
1051	Largemouth buffalo (*Ictiobus cyprinellus*)	quadrate	1	0	0.78	-	right	-	3/4-complete	-	-	-
1051	Largemouth buffalo (*Ictiobus cyprinellus*)	maxilla	1	0	0.95	-	left	-	3/4-complete	-	-	-
941	Longnosed Gar (*Lepisosteus osseus*)	vertebrae	1	0	3.90	-	-	-	3/4-complete	-	-	80-100
941	Longnosed Gar (*Lepisosteus osseus*)	mandible /dentary	2	0	11.00	-	left	-	1/4-1/2	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
941	Longnosed Gar (*Lepisosteus osseus*)	mandible /dentary	1	0	1.30	-	-	-	1/4-1/2	-	-	-
941	Longnosed Gar (*Lepisosteus osseus*)	mandible /dentary	1	0	17.30	-	left	-	complete	-	-	-
941	Longnosed Gar (*Lepisosteus osseus*)	maxilla	1	0	1.10	-	-	-	1/4-1/2	-	-	-
1025	Smallmouth buffalo (*Ictiobus bubalus*)	articular	1	0	0.11	-	-	-	<1/4	-	-	-
944	Smallmouth buffalo (*Ictiobus bubalus*)	hyomandibular	1	0	0.45	-	left	-	1/4-1/2	-	-	35-40
941	Channel/Blue Catfish (*Ictalurus p/f*)	vertebrae	1	0	2.00	-	-	-	1/4-1/2	-	-	-
912	Buffalo (*Ictiobus* sp)	palatine	1	0	0.17	-	-	-	-	-	-	-
1025	Buffalo (*Ictiobus* sp)	hypohyoid	1	0	0.13	-	-	-	-	-	-	-
942	Crappie (*Pomoxix* sp.)	atlas	1	0	0.17	-	-	-	complete	-	-	20-30
942	Sunfish (*Lepomis* sp.)	vertebrae	4	0	0.29	-	-	-	1/2-3/4	-	-	-
912	Catfish family (Ictaluridae)	skull fragment (indeterminate)	6	1	0.92	-	-	-	<1/4	-	-	-
912	Catfish family (Ictaluridae)	vertebrae	3	0	0.49	-	-	-	3/4-complete	-	-	-
912	Catfish family (Ictaluridae)	sphenotic	1	0	0.13	-	-	-	-	-	-	-
912	Catfish family (Ictaluridae)	frontal	1	0	0.05	-	-	-	-	-	-	-
912	Catfish family (Ictaluridae)	webberian apparatus	1	1	0.23	-	-	-	-	lateral	-	-
912	Catfish family (Ictaluridae)	pectoral spine	2	0	0.26	-	-	-	-	articulation	-	-
912	Catfish family (Ictaluridae)	ceratohyoid /hyal	1	0	0.18	-	-	-	-	-	-	-
912	Catfish family (Ictaluridae)	articular	1	1	0.20	-	-	-	<1/4	-	-	-
1036	Catfish family (Ictaluridae)	operculum	1	0	0.10	-	-	-	1/4-1/2	-	-	30-40
944	Catfish family (Ictaluridae)	vertebrae	4	1	0.43	-	-	-	1/2-3/4	-	-	-
944	Catfish family (Ictaluridae)	cleithrum	1	0	0.11	-	-	-	<1/4	-	-	-
944	Catfish family (Ictaluridae)	coracoid	1	0	0.09	-	-	-	<1/4	-	-	-
944	Catfish family (Ictaluridae)	ethmoid	1	0	0.28	-	-	-	<1/4	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
941	Catfish family (Ictaluridae)	vertebrae	1	0	0.62	-	-	-	3/4-complete	-	-	-
941	Catfish family (Ictaluridae)	pectoral spine	1	0	1.57	-	-	-	-	-	-	-
941	Catfish family (Ictaluridae)	articular	1	0	3.60	-	-	-	1/4-1/2	-	-	60-80
942	Catfish family (Ictaluridae)	vertebrae	4	0	1.00	-	-	-	-	-	-	-
942	Catfish family (Ictaluridae)	basioccipital	1	0	0.40	-	-	-	1/4-1/2	-	-	-
942	Catfish family (Ictaluridae)	atlas	1	0	0.30	-	-	-	complete	-	-	-
942	Catfish family (Ictaluridae)	articular	1	1	0.40	-	-	-	1/4-1/2	-	-	-
942	Catfish family (Ictaluridae)	indeterminate	6	0	2.89	-	-	-	-	-	-	-
942	Catfish family (Ictaluridae)	pectoral spine	1	0	0.12	-	-	-	<1/4	-	-	-
942	Catfish family (Ictaluridae)	skull fragment (indeterminate)	2	0	0.25	-	-	-	<1/4	-	-	-
942	Catfish family (Ictaluridae)	cleithrum	1	0	0.17	-	-	-	<1/4	-	-	-
1051	Catfish family (Ictaluridae)	vertebrae	2	0	3.43	-	-	-	1/4-1/2	-	-	-
1051	Catfish family (Ictaluridae)	skull fragment (indeterminate)	1	0	1.54	-	-	-	<1/4	-	-	-
941	Catfish family (Ictaluridae)	indeterminate	1	0	3.43	-	-	-	-	-	-	-
912	Gar family (Lepisosteidae)	basioccipital	1	0	0.12	-	-	-	<1/4	-	-	-
912	Gar family (Lepisosteidae)	skull fragment (indeterminate)	6	0	1.22	-	-	-	<1/4	-	-	-
912	Gar family (Lepisosteidae)	maxilla/dentary	13	2	3.31	-	-	-	-	-	-	-
912	Gar family (Lepisosteidae)	scale	55	12	8.82	-	-	-	-	-	-	-
912	Gar family (Lepisosteidae)	vertebrae	17	2	4.25	-	-	-	-	-	-	-
1025	Gar family (Lepisosteidae)	vertebrae	3	0	0.47	-	-	-	1/4-1/2	-	-	-
1025	Gar family (Lepisosteidae)	scale	7	0	2.10	-	-	-	3/4-complete	-	-	-
1031	Gar family (Lepisosteidae)	scale	3	0	0.38	-	-	-	1/4-1/2	-	-	-
943	Gar family (Lepisosteidae)	frontal	1	0	0.40	-	-	-	<1/4	-	-	-
943	Gar family (Lepisosteidae)	articular	1	0	5.50	-	-	-	1/2-3/4	-	-	-
944	Gar family (Lepisosteidae)	scale	74	0	5.97	-	-	-	-	-	-	-
944	Gar family (Lepisosteidae)	vertebrae	17	2	5.24	-	-	-	1/2-3/4	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
944	Gar family (Lepisosteidae)	maxilla/dentary	13	0	4.18	-	-	-	<1/4	-	-	-
944	Gar family (Lepisosteidae)	branchiostegal	8	3	2.22	-	-	-	<1/4	-	-	-
944	Gar family (Lepisosteidae)	parasphenoid	1	0	0.24	-	-	-	<1/4	-	-	-
944	Gar family (Lepisosteidae)	skull fragment (indeterminate)	2	0	0.46	-	-	-	<1/4	-	-	-
944	Gar family (Lepisosteidae)	palatine	1	0	0.17	-	-	-	<1/4	-	-	-
944	Gar family (Lepisosteidae)	pterygiophores	3	0	2.35	-	-	-	<1/4	-	-	-
944	Gar family (Lepisosteidae)	post-temporal	1	0	0.10	-	-	-	<1/4	-	-	-
944	Gar family (Lepisosteidae)	basioccipital	1	1	0.13	-	-	-	1/4-1/2	-	-	-
1006	Gar family (Lepisosteidae)	scale	62	19	5.44	-	-	-	1/2-3/4	-	-	-
1006	Gar family (Lepisosteidae)	maxilla/dentary	2	0	0.40	-	-	-	<1/4	-	-	-
1006	Gar family (Lepisosteidae)	vertebrae	12	0	1.84	-	-	-	1/2-3/4	-	-	-
941	Gar family (Lepisosteidae)	vertebrae	2	0	2.20	-	-	-	3/4-complete	-	-	-
941	Gar family (Lepisosteidae)	scale	5	0	5.10	-	-	-	-	-	-	-
941	Gar family (Lepisosteidae)	scale	3	0	4.90	-	-	-	-	-	-	-
941	Gar family (Lepisosteidae)	vertebrae	2	0	6.38	-	-	-	3/4-complete	-	-	-
941	Gar family (Lepisosteidae)	basioccipital	1	0	5.90	-	-	-	3/4-complete	-	-	80-100
942	Gar family (Lepisosteidae)	vertebrae	6	2	2.20	-	-	-	-	-	-	-
942	Gar family (Lepisosteidae)	scale	56	0	20.61	-	-	-	-	-	-	-
942	Gar family (Lepisosteidae)	skull fragment (indeterminate)	1	0	0.03	-	-	-	-	-	-	-
942	Gar family (Lepisosteidae)	maxilla	2	0	3.19	-	-	-	<1/4	-	-	-
942	Gar family (Lepisosteidae)	mandible /dentary	6	0	5.17	-	-	-	<1/4	-	-	-
942	Gar family (Lepisosteidae)	pterygiophores	1	0	0.51	-	-	-	<1/4	-	-	-
1051	Gar family (Lepisosteidae)	vertebrae	2	0	4.54	-	-	-	1/2-3/4	-	-	-
912	Sucker family (Catastomidae)	hyomandibular	1	1	0.34	-	-	-	1/4-1/2	-	-	-
912	Sucker family (Catastomidae)	vertebrae	1	0	0.73	-	-	-	1/2-3/4	-	-	-
912	Sucker family (Catastomidae)	palatine	1	0	0.14	-	-	-	<1/4	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
912	Sucker family (Catastomidae)	webberian apparatus	1	0	0.11	-	-	-	<1/4	-	-	-
1025	Sucker family (Catastomidae)	webberian apparatus	1	0	0.23	-	-	-	<1/4	-	-	-
1036	Sucker family (Catastomidae)	cleithrum	1	0	0.21	-	-	-	1/4-1/2	-	-	-
1031	Sucker family (Catastomidae)	rib	3	0	0.58	-	-	-	<1/4	-	-	-
1024	Sucker family (Catastomidae)	vertebrae	1	0	1.50	-	-	-	3/4-complete	-	-	50-70
944	Sucker family (Catastomidae)	vertebrae	6	0	2.40	-	-	-	1/4-1/2	-	-	-
944	Sucker family (Catastomidae)	pharyngeal arch	1	0	0.05	-	-	-	<1/4	-	-	-
944	Sucker family (Catastomidae)	basioccipital	1	0	0.48	-	-	-	1/4-1/2	-	-	30-40
944	Sucker family (Catastomidae)	epihyoid/hyal	2	1	0.29	-	-	-	3/4-complete	-	-	-
944	Sucker family (Catastomidae)	webberian apparatus	1	0	0.09	-	-	-	<1/4	-	-	-
944	Sucker family (Catastomidae)	hyomandibular	1	0	0.21	-	-	-	1/4-1/2	-	-	-
944	Sucker family (Catastomidae)	supracleithrum	1	0	0.18	-	-	-	1/4-1/2	-	-	30-35
944	Sucker family (Catastomidae)	hyomandibular	1	0	0.23	-	-	-	<1/4	-	-	-
1006	Sucker family (Catastomidae)	hyomandibular	1	0	0.76	-	-	-	<1/4	-	-	-
1006	Sucker family (Catastomidae)	webberian apparatus	1	0	0.47	-	-	-	<1/4	-	-	-
1006	Sucker family (Catastomidae)	hyomandibular	1	0	0.18	-	-	-	1/4-1/2	-	-	-
941	Sucker family (Catastomidae)	basioccipital	1	0	0.80	-	-	-	3/4-complete	-	-	-
941	Sucker family (Catastomidae)	vertebrae	2	0	1.90	-	-	-	3/4-complete	-	-	40-60
941	Sucker family (Catastomidae)	vertebrae	1	0	0.60	-	-	-	3/4-complete	-	-	40-60
942	Sucker family (Catastomidae)	vertebrae	2	0	0.80	-	-	-	-	-	-	-
942	Sucker family (Catastomidae)	atlas	1	0	0.40	-	-	-	-	-	-	-
942	Sucker family (Catastomidae)	pelvic girdle	1	0	0.24	-	-	-	1/4-1/2	-	-	-
942	Sucker family (Catastomidae)	skull fragment (indeterminate)	2	0	0.44	-	-	-	<1/4	-	-	-
942	Sucker family (Catastomidae)	supracleithrum	1	0	0.56	-	left	-	1/2-3/4	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
942	Sucker family (Catastomidae)	ceratohyoid /hyal	1	1	0.12	-	-	-	complete	-	-	-
942	Sucker family (Catastomidae)	rib	1	0	0.59	-	-	-	3/4-complete	shaft	-	-
912	Perciform	quadrate	1	1	0.11	-	left	-	1/4-1/2	-	-	-
912	Perciform	vertebrae	12	1	1.43	-	-	-	-	-	-	-
943	Perciform	vertebrae	1	0	0.40	-	-	-	3/4-complete	-	-	30-40
944	Perciform	vertebrae	12	1	1.66	-	-	-	1/4-1/2	-	-	-
944	Perciform	articular	1	0	0.10	-	-	-	1/4-1/2	-	-	-
1006	Perciform	vertebrae	1	0	0.06	-	-	-	1/4-1/2	-	-	-
1006	Perciform	maxilla	1	0	0.09	-	-	-	<1/4	-	-	-
912	Unidentified Fishes (Osteichthyes)	vertebrae	28	3	3.37	-	-	-	-	-	-	-
912	Unidentified Fishes (Osteichthyes)	dorsal spine	3	0	0.14	-	-	-	-	-	-	-
912	Unidentified Fishes (Osteichthyes)	rib/spine (indeterminate)	25	1	4.15	-	-	-	-	-	-	-
912	Unidentified Fishes (Osteichthyes)	rib	2	2	0.59	-	-	-	-	-	-	-
912	Unidentified Fishes (Osteichthyes)	spine support	1	0	0.02	-	-	-	complete	-	-	-
912	Unidentified Fishes (Osteichthyes)	spine (indeterminate)	1	1	0.05	-	-	-	3/4-complete	-	-	-
912	Unidentified Fishes (Osteichthyes)	indeterminate	111	9	12.35	-	-	-	-	-	-	-
1005	Unidentified Fishes (Osteichthyes)	indeterminate	1	0	1.10	-	-	-	-	-	-	-
1025	Unidentified Fishes (Osteichthyes)	vertebrae	4	0	0.37	-	-	-	1/4-1/2	-	-	-
1025	Unidentified Fishes (Osteichthyes)	indeterminate	40	11	4.97	-	-	-	-	-	-	-
1031	Unidentified Fishes (Osteichthyes)	indeterminate	2	0	0.36	-	-	-	<1/4	-	-	-
943	Unidentified Fishes (Osteichthyes)	indeterminate	3	0	1.90	-	-	-	-	-	-	-
944	Unidentified Fishes (Osteichthyes)	rib/spine (indeterminate)	9	0	0.56	-	-	-	1/4-1/2	-	-	-
944	Unidentified Fishes (Osteichthyes)	vertebrae	18	3	1.95	-	-	-	-	-	-	-
944	Unidentified Fishes (Osteichthyes)	dorsal spine	1	0	0.11	-	-	-	1/4-1/2	-	-	-
944	Unidentified Fishes (Osteichthyes)	indeterminate	100	3	11.08	-	-	-	-	-	-	-

Table A2.9.Continued.

Cat. No.	Taxonomic Identification	Element	NISP	Burned	Weight (g)	Cultural Modific-ation	Symmetry	Fusion	Fragment-ation	Element Portion	Age	Length (cm)
944	Unidentified Fishes (Osteichthyes)	indeterminate	3	1	0.72	-	-	-	-	-	-	-
1006	Unidentified Fishes (Osteichthyes)	rib/spine (indeterminate)	1	0	0.07	-	-	-	1/4-1/2	-	-	-
1006	Unidentified Fishes (Osteichthyes)	indeterminate	148	3	23.90	-	-	-	-	-	-	-
1006	Unidentified Fishes (Osteichthyes)	indeterminate	1	0	0.13	-	-	-	-	-	-	-
941	Unidentified Fishes (Osteichthyes)	vertebrae	2	0	1.00	-	-	-	-	-	-	-
941	Unidentified Fishes (Osteichthyes)	basioccipital	1	0	0.70	-	-	-	-	-	-	-
941	Unidentified Fishes (Osteichthyes)	indeterminate	3	0	2.20	-	-	-	<1/4	-	-	-
941	Unidentified Fishes (Osteichthyes)	indeterminate	4	0	2.05	-	-	-	<1/4	-	-	-
941	Unidentified Fishes (Osteichthyes)	skull fragment (indeterminate)	1	0	0.64	-	-	-	<1/4	-	-	-
942	Unidentified Fishes (Osteichthyes)	vertebrae	8	1	1.10	-	-	-	-	-	-	-
942	Unidentified Fishes (Osteichthyes)	indeterminate	29	0	6.02	-	-	-	-	-	-	-
942	Unidentified Fishes (Osteichthyes)	vertebrae	1	0	0.14	-	-	-	-	-	-	-
942	Unidentified Fishes (Osteichthyes)	vertebrae	1	0	0.17	-	-	-	-	-	-	-
942	Unidentified Fishes (Osteichthyes)	indeterminate	32	1	4.26	-	-	-	-	-	-	-
1051	Unidentified Fishes (Osteichthyes)	pectoral spine	1	1	0.01	-	-	-	3/4-complete	-	-	-
Indeterminate												
1006	Indeterminate	indeterminate	3	0	0.24	-	-	-	-	-	-	-
912	Indeterminate	indeterminate	99	2	1.75	-	-	-	-	-	-	-
942	Indeterminate	indeterminate	20	5	3.57	-	-	-	-	-	-	-

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