HOUSEHOLD RESEARCH AT THE LATE MISSISSIPPIAN

LITTLE EGYPT SITE (9MU102)

by

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(Under the direction of Dr. David Hally)

ABSTRACT

This dissertation explores activities related to everyday production at the household level at the Late Mississippian Little Egypt site (9MU102) in northwest Georgia. Exploratory statistics are combined with the mapping features of a geographic information system and intuitive pattern recognition techniques to identify areas within three domestic structures where production activities occurred. Ethnographic and ethnohistoric studies are used to determine the gender of the individual(s) who used each activity area. In general, each household had separate activity areas for males and females, in addition to an area shared in common. Female activities appear to utilize the most space within a structure, suggesting female activities are the most important for understanding production at the household level within domestic structures. Lastly, these findings are used to develop a model of Barnett phase household activity structuring. This model is very similar to the model of the Dallas phase household unit developed by Richard Polhemus (1998), and suggests broader patterns of household activity structuring may be present across the Late Mississippian Southeast.

INDEX WORDS: Households, Activity Areas, Gender, Domestic production, Little Egypt, Late Mississippian, Barnett phase

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CHAPTER 1 – INTRODUCTION

Household-level research in cultural anthropology is nearly as old as the discipline itself. However, archaeological investigation of households has a relatively brief history. Only since the 1970s have archaeologists begun to examine households in contexts ranging from small farmsteads to large villages. The nature and function of households in the Mississippian period of the North American Southeast (A.D. 900 – 1540) are only beginning to be understood. The research of Bruce Smith (1978), David Hally (1980), and Richard Polhemus (1987, 1998) stand out as significant work in household archaeology of the Mississippian period. Each work represents a refinement of techniques used to analyze spatial data recovered from domestic contexts. Models have also been developed to describe the function and utilization of space in household clusters and within domestic structures. While it is possible to apply this body of techniques and models to new sites, it is also desirable to reanalyze one of the original sites subjected to household research, incorporating new techniques and analyses not available in the earlier studies. To this end a re-examination of three structures from the Late Mississippian Little Egypt site (9MU102) in northwest Georgia was undertaken.

In this dissertation I utilize an activity-based definition of the household. In this sense a household can be thought of as five overlapping spheres of activities: production, distribution, transmission, reproduction, and co-residence (Wilk and Rathje 1982; Carter 1984; Netting et al 1984; Ashmore and Wilk 1988). Using an activity-based definition reminds us that the object of anthropological archaeology is to gain a better understanding of human *behavior* in all times and places. Households are more than the structures and spaces they inhabit and the materials they utilize. However, archaeologists are dependent upon the

preservation of some of these spaces and artifacts if they are to learn something about the activities conducted by household members.

The purpose of this dissertation is to examine two specific aspects of household activity areas in Mississippian domestic structures. One, is there evidence for discrete, discernable activity areas within Mississippian domestic structures? Two, if so, is there evidence that can be used to discern gender-specific activity areas? I use a combination of statistical analysis, geographic information system (GIS) mapping, and intuitive pattern recognition techniques to address both of these issues. These analyses have important implications for the study of household production activities, the nature of gender-division of labor, and the structuring of activity areas in households. I compare my to the present understanding of Late Mississippian households in east Tennessee and I suggest a model for Late Mississippian households in northwest Georgia.

The Little Egypt collections have proved to be a very rich and rewarding data set. The original goal of excavations was to recover evidence of activities within domestic structures. Three domestic structures were identified and completely excavated. Close attention was given to piece-plotting large artifacts and collecting flotation samples at close intervals across the house floors. Every class of artifact (ceramic, lithic, botanical, and faunal) was thoroughly analyzed. Most of the original documentation, including field notes, maps, photos, slides, and analysis sheets are curated with the materials at the University of Georgia Department of Anthropology Laboratory of Archaeology.

This dissertation describes the results of my study. Chapter 2 examines a suitable definition of the household for archaeological research, and outlines a history of relevant household archaeological research in the southeast United States. The challenges of analyzing households at Little Egypt due to limitations of the data set are described. The usefulness of using a household perspective is discussed.

Chapter 3 describes past analyses of Late Mississippian domestic winter structures from east Tennessee and northwest Georgia. Specific architectural features relevant to the domestic structures excavated at Little Egypt are described.

Chapter 4 provides a detailed summary of the physiographic and cultural contexts of the Little Egypt site. The Barnett phase of the Mississippian period is defined.

The fifth chapter describes the three structures from Little Egypt. Excavation techniques used for each structure are outlined. The nature and limitations of the collections from each structure are also provided. Finally, past studies of the three Little Egypt structures are summarized. Analysis of activity areas was conducted by David Hally (1980), Kent Schneider (1972), and Marvin Smith (1975). Their activity areas are described and their findings are critiqued.

Chapter 6 will detail theoretical and methodological issues considered for this dissertation. Specifically, particular aspects of spatial analysis, statistical approaches to spatial analysis, the use of GIS in archaeological research, and gender studies are described. Other considerations include possible symbolism or social significance in the built environment.

The seventh chapter provides basic descriptions of the artifact categories used to identify activity areas within the domestic structures at Little Egypt. This is not meant to be an exhaustive list of the types of artifacts found within the three structures, but will highlight the major categories of artifacts commonly recovered. The artifact descriptions are largely functional in nature, and do not delve into stylistic or nomenclature issues.

Chapter 8 contains detailed descriptions of the distributions of artifacts across each Little Egypt house floor. Isopleth maps generated in a GIS are provided for many of the artifact classes from each structure.

Chapter 9 describes the results of my analysis, including the results of statistical tests for correlations between artifact classes within each structure. My proposed activity areas are described. Artifacts found in these areas are listed, and the rationale behind the conclusions for activities conducted in each area and the probable gender of the user of the area are also

given.

The concluding chapter provides a discussion of my findings as they pertain to the research questions described in this introductory chapter. The nature of gender-division of labor and the structuring of activity areas in Little Egypt households, and a comparison of the three households is also discussed. These findings are compared to the present understanding of Late Mississippian households in east Tennessee and a model is proposed for Late Mississippian households in northwest Georgia.

Appendices follow the references and contain the species lists of plants and animal remains recovered from the domestic structures, and spreadsheets of the data used in my analysis.

CHAPTER 2 – HOUSEHOLD ARCHAEOLOGY IN THE SOUTHEAST

This chapter examines a suitable definition of the household for archaeological research, and outlines a history of relevant household archaeological research in the southeastern United States. A more exhaustive history of the development of the concept of the household and of household archaeology across the Southeast can be found in Gougeon (1998b).

Defining The Household in Archaeological Research

Defining the household is challenging due to the complexity of the concept. Households have a *social* dimension, in the form of numbers and relationships among members; a *material* dimension, in the form of built structures, activity areas, and possessions; and a *behavioral* dimension, in the form of the activities performed (Wilk and Rathje 1982:618). Previous definitions used in household analyses have focused on only one or two of these elements, reflecting the types of analyses undertaken, desired information to be collected, and/or assumptions and biases.

Early uses of the concept of a household in anthropological and archaeological research were inexorably linked to the concept of family (Evans-Pritchard 1940:114; Steward 1938:239; Yanagisako 1979). Although household membership based on relationships of marriage and descent are common (Kunstadter 1984:300), it is problematic to base definitions of the household on the concept of family. Household members are not necessarily bound by social or kinship ties, nor are families necessarily households (see also Bohannan 1963:75,78). Households are very flexible and responsive to changes in personal wealth, economies, technologies, and environment, and can easily add members, transfer members and resources, and adjust roles to meet changing needs in ways that families do not (Peterson 1994:90-91).

Previous work on households has also linked the household to co-residency, or cohabitation by household members (Bohannan 1963:78,86; Laslett 1972:27). While residential proximity may imply linkages between individuals (Hirth 1993:24), analyses based solely on proximity ignore situations where household members eat, sleep, and work in different places (Peterson 1994:92). Other researchers have made one-to-one correlations between houses and households where residential structures form recognizable and discrete units (Horne 1982:677). However, single structures may house multiple households, as in the case of Malay longhouses, in which several households reside under one roof (Peterson 1994:92), or a complex of adjacent structures or a compound may house a single household (Wilk and Netting 1984:17). Households may also have holdings dispersed throughout a settlement (Horne 1982). For example, in a study of thirty-three households in an Iranian village, twenty-six owned or used rooms some distance from their main living quarters (Horne 1982:678). Households and co-residency may or may not go hand in hand, but this must be empirically determined for each society and each time period, and not simply assumed (Ashmore and Wilk 1988).

In recent decades the household has often been defined as being an activity or task-oriented group (Wilk and Rathje 1982; Carter 1984; Netting et al 1984; Ashmore and Wilk 1988). People acting in a patterned association with other people constitute *activity groups*. Wilk and Netting (1984; see also Hirth 1993) have recognized five spheres of household activity. These are *production*, *distribution*, *transmission*, *reproduction*, and *co-residence*. The *production* sphere includes human activities that procure or increase the value of resources, and may include collecting, preparing, and cooking food, making clothes, building structures for shelter, storage, or protection, and agricultural or horticultural activities, among many others.

A second sphere includes activities of *distribution*. Distribution involves moving materials from producers to consumers, and includes consumption of these materials. Distribution activities include storing household food sources in a common granary, dividing

game among household members and among households, and determining who eats what and when (if meals are not shared communally). Cultural anthropologists study distribution to examine exchanges and transactions within and between households, as the rules for each usually differ (Wilk and Netting 1984:9). Pooling of resources, or generalized reciprocity, for example, is believed to be the norm for the distribution of materials within households (see Friedman 1984; Guyer and Peters 1987 and Russell 1995 for critiques of this idea).

Activities of *transmission* refer to the transmission of rights of access to restricted resources, goods, property, tools, and other materials. Rules of transmission can influence kinship composition, age structure, and size of household membership, as well as patterns of authority.

Socialization and enculturation of subadults are activities of *reproduction*. Also included in this sphere of activity is recruitment of new members through marriage and adoption. Reproduction activities include childcare, teaching children how to perform domestic functions like the preparation of food or gardening, and imparting ideas of group solidarity through symbols, motifs, and designs used in pottery, dress, housing, and etc. Tasks involved with reproduction, like care, feeding, and education, add to and modify activities of production, distribution, and transmission (Wilk and Netting 1984:14). Timing and rates of reproduction also affect household size and composition.

The final sphere of activity, *co-residency*, is not necessarily congruent with household, nor is co-residency by itself enough to define household composition (Hirth 1993:24). Cultural anthropologists use co-residency to examine behavioral relationships that define social ties within households.

Problems Encountered in Household Archaeological Research

Some of the difficulties archaeologists encounter when addressing household level questions stem from the definitions of household commonly used by other disciplines. Archaeologists require a materialistic approach to households, or at least one that allows us to recognize the household in the material archaeological record. Definitions that focus solely on household membership (be it an argument based on co-habitation or family) center on issues that cannot be investigated in most archaeological situations. If archaeology is the study of relationships between human behavior and material culture in all times and places (Schiffer 1976), and activities are behaviors which create the material culture, then it is only logical to use an activity-based definition of the household in archaeological research.

Aside from the problems archaeologists have with many anthropological household definitions, several other conflicts arise in archaeological household research. One is more practical than theoretical. Research on households, traditionally undertaken by ethnographers, ethnoarchaeologists, sociologists, and the like, is typically temporally synchronic, looking at the household at a single point in time (Hirth 1993). The archaeological record, on the other hand, usually reflects changes brought about by various natural and cultural processes over long periods of time. In addition, households can endure for several generations, modifying, if not completely destroying, the archaeological record of their predecessors (Hirth 1993; Santley and Hirth 1993). It is therefore sometimes necessary to "tease out" the activities of a single household from the changing activities and resulting material remains of many households. The diachronic nature of archaeological deposits, however, can be advantageous to certain research questions, especially those concerned with change through time.

A trend in archaeology has been to differentiate between the material, the house, and the non-material, the household. As mentioned above, it is tempting to make one-to-one correlations between houses and households where residential structures form recognizable and discrete units (Horne 1982:677). For example, Tourtellot defines "archaeological households" as being comprised of "structures…, patio spaces, houselots, and their contents"

(1983:45). Johnston and Gonlin (1999) use the house and surrounding area to study the Classic Maya commoner household. This assumed association between the house and the household may not be as problematic in Mayan archaeology as it may be elsewhere. Ethnoarchaeology, ethnology, and everyday observation demonstrate that the modern Mayan households live in structures very similar to those uncovered archaeologically (see Wauchope 1938). This association cannot be assumed elsewhere, however.

Household Archaeology in Southeastern North America

Household archaeology in the Mississippian Southeast has advanced greatly in recent decades as the usefulness of examining only the largest, most visible mound sites and centers has run its course. The 1970s saw a proliferation of research into the nature of households from Mississippian sites. Previous research on the nature of Mississippian architecture gave way slowly to increasing interest in the people who inhabited these domestic structures. This research arose first as an attempt to recognize the household in the archaeological record, and has expanded into explorations of the role of the household in larger socio-political and economic realms.

Household archaeological research on the Mississippian period began with Bruce Smith's (1978) work at the Gypsy Joint site in southeastern Missouri. This investigation was begun in an attempt to flesh out a settlement pattern model for Power Phase sites proposed by Jim Price in 1973. Excavations at Gypsy Joint uncovered two domestic structures and a dozen features representing presumed activity areas in the surrounding yard. Activity areas were defined by examining where aggregations of single artifact types overlapped with other artifact aggregations (Smith 1978:135). Smith further attempted to discover the composition of the group that occupied Gypsy Joint by first determining what activities were carried out at the site, then by analyzing ethnohistoric descriptions of sexual division of labor by native groups. He found that a full-range of activities typically carried out by males and females were performed, suggesting that a family lived there full-time. Smith concluded that Gypsy Joint

was more than just an extraction site with limited occupation - it was a homestead for a nuclear family.

Extensive household archaeological research relevant to this dissertation has been conducted in eastern Tennessee. Late Mississippian houses across east Tennessee and northwest Georgia share many architectural features (see Chapter 3). Richard Polhemus (1987; 1990; 1998) has excavated and described a large number of domestic structures from the Late Mississippian Dallas phase sites of Toqua (40MR6) and Loy (40JE10). Polhemus devotes considerable space in the Toqua report to describing architectural features and establishing a typology for Dallas phase structures. He also describes a model for a household cluster. The Dallas phase household cluster, or minimal settlement unit, consists of a primary structure, a secondary structure in the form of a *barbacoa* (corn crib), and outdoor activity areas (Polhemus 1987:1242-1244). Some of these outdoor activity areas might include earth-ovens or stone-filled cooking pits, and may be shared with other households. Further analysis of domestic structures at Toqua consisted of intuitive methods for determining clusters of related artifacts that seemed to indicate the places where particular activities were carried out. For his dissertation on the Loy site Polhemus used k-means cluster analysis to first propose possible clusters of related artifacts. More intuitive methods were then employed to interpret the statistically determined clusters.

Through his work at the Toqua site Polhemus has devised a model of Dallas phase household activity structure. In this model the domestic structure was divided into public and private areas. A central hearth marked a public area where a number of activities took place, including preparation of food and activities requiring light from the fire. Private areas consisted of beds and storage areas. Beds were located along the walls. Corners were used for storage, with foodstuffs commonly found in the southeast corner; “non-food” in the northwest corner, and “general” storage in the northeast and southwest corners. Ethnographic accounts report individuals were buried near the bed they used in life. Burial placements and associations between genders and specific activities support claims for engendered areas of

the structures. Polhemus suggests females were most often associated with the north and south walls, and males were associated with the west wall.

Polhemus (1998) revised this model in his doctoral dissertation, based on analysis of the Loy site. In the new model adult males are associated with the wall opposite the entrance. Adult females utilized the bed and area to the left of the entrance, and subadults were associated with the bed opposite the adult females. Storage areas are assigned to each gender in this refined model. Males utilized the storage area in the right rear corner of the structure, and females used the left rear corner. Food was stored in the front left corner. The right front corner was used for lithic reduction, plant food processing, and other "heavy" or initial coarse processing.

Another example of household archaeological research in eastern Tennessee is Sullivan's (1987; 1995) analysis of Dallas, Mouse Creek, and Overhill Cherokee phase settlements. In this study Sullivan attempts to discern whether Mouse Creek represents a transitional phase from the hierarchically organized Dallas phase to the more egalitarian Overhill Cherokee. She proposes that houses from each phase should exhibit evidence of different degrees of distinction between elite and commoner households. Additionally, changes in public architecture should represent a shift from chiefly power to more communal tribal governing organizations. Her research suggests that the three phases do, in fact, fall into a continuum of more hierarchically to more communally arranged communities (Sullivan 1995), but an additional problem of discerning when and where Dallas and Mouse Creek phases existed makes her conclusions moot. Without further refinement of the cultural chronologies in east Tennessee this kind of study would seem to be premature.

Sullivan (1987:16) also describes a "household unit" that she defines as dwellings and features associated with the household that utilized them. Household units as described by Sullivan were common in eighteenth century Cherokee and Creek settlements, but appear to have prehistoric roots in Mouse Creek, Dallas, and prehistoric Cherokee phases in eastern Tennessee (Sullivan 1995). This model of household units includes closely spaced summer

and winter structures, outdoor activity areas, and sometimes smaller structures that likely served as storage buildings. Summer structures varied in size and composition between these archaeologically recognized phases, but are generally marked by a rectangular post pattern with a roof. Winter structures were more substantial and are more easily recognized archaeologically. It should be noted that winter structures from prehistoric and historic Cherokee phases differ greatly from Dallas and Mouse Creek phase domestic structures. In general Dallas and Mouse Creek household units resemble domestic structures from northwest Georgia, particularly in the construction of winter houses.

Considerable archaeological research relevant to this dissertation has been conducted in the Carters Reservoir region in northwest Georgia. Work begun by A. R. Kelly was focused on investigations of Mississippian architecture, and not necessarily households *per se*. Two sites, Sixtoe (9MU100) and Bell Field (9MU101), yielded structures in village contexts and mound summits (respectively) (Kelly 1970, 1972; Kelly et al 1965).

By the early 1970s Hally (1980:14-15) outlined an investigation of Mississippian households through excavations at the Potts' Tract (9MU103) and Little Egypt sites. Limited excavations at Potts' Tract in 1968 yielded evidence of three Barnett phase structures. Investigations at Little Egypt in the early 1970s resulted in the complete excavation of three Barnett phase domestic structures. A description of these structures and their artifactual content was submitted by Hally to the Army Corps of Engineers in 1980. Papers describing the analysis of botanical remains recovered from domestic structures and household pottery use were published in 1981 and 1983.

Household archaeological research is on-going on several Mississippian period sites first excavated in the late 1960s and 1970s (Hally 1980; 1988; Hally and Kelly 1998). The King site (9FL5), excavated in 1971, 1973-74 (Hally 1988), and 1992-1993, yielded many structures in various states of preservation, including several burned structures. Investigation of these structures and their large site context has focused on identification of multi-structure extended family households (Hally and Kelly 1998; Kelly 1988), tracing their development

through time, characterizing the status and roles of deceased household members, and identifying how community ideology is symbolized in the architectural components of the domestic habitation (Hally, in preparation).

The Leake site (9BR2) was excavated in 1988 and 1989 by David Hally and James Langford (Patton 1990). Excavations in village deposits yielded evidence of several Brewster phase domestic structures. One of these, Structure 1, was completely excavated and studied by Robert Patton (1990) in an Honor's thesis written under the direction of David Hally. In this thesis, artifactual remains and architectural evidence were examined in an attempt to discern "task areas" within the domestic structure. He further compares the structure at Leake to those at Toqua, the King site, and Little Egypt. In general Patton finds that Structure 1 conforms to a pattern observed at sites in eastern Tennessee and northwest Georgia. Namely, activities within domestic structures were confined to compartments along the outer walls, and that the central hearth area was kept free of debris most likely through regular cleaning of the hearth surface (Patton 1990:61).

Identifying Households at Little Egypt

Part of the challenge of investigating households at Little Egypt stems from the incomplete picture we have of the "household unit". As is described in Chapter 5, only winter domestic structures were excavated. No evidence of summer structures, *barbacoas*, outdoor activity areas, or any other associated features was excavated in direct association with the structures. Identification and analysis of households at Little Egypt is conducted with the understanding that many daily activities and physical features of household units are not available for study. This does not mean, however, that there is not much to learn about Late Mississippian households at Little Egypt. Presumably during the cold winter months many household activities were conducted indoors, in the more substantial and better insulated winter structures. In a way, winter structures may resemble a microcosm of household activities, with the dispersed activities of warmer months brought indoors under one roof. Furthermore, with the possibility of sharing of some outdoor activity areas by multiple

households (Polhemus 1987:1242), analyzing winter domestic structures almost ensures that the activities within were performed by separate, individual households.

In this dissertation I utilize an activity-based definition of the household, as outlined in the beginning of this chapter. First, this approach overcomes some of the shortcomings of the data set. Although evidence of summer structures and outdoor activity areas are not available for study, the similarity of the three winter structures allows me to compare the activities of three separate households. Second, using an activity-based definition reminds us that the object of anthropological archaeology is to gain a better understanding of human behavior in all times and places. Households are more than the structures and spaces they inhabit and the materials they utilize. However, archaeologists are dependent upon the preservation of some of these spaces and artifacts if they are to learn something about the activities conducted by household members.

Lastly, a household perspective has been beneficial to this study in several respects. Households are arguably the primary unit of social organization in nearly every culture known to anthropologists. While not ignoring the individuals that comprise households, this basic social unit is a nexus of intra- and inter-group interaction. The household is the first to respond to changes in environment, diet, political organization, and countless other nuances of human existence. At the same time, the household may actually be more resistant to sweeping changes than the larger social and political structures of their societies (Gougeon 1999; Pavao-Zuckerman 2000). Considering the magnitude of changes that altered Southeastern Indian societies after European contact, a better understanding of households seems crucial in understanding the full impact of widespread social and cultural change. Little Egypt affords us the invaluable opportunity to examine households on the cusp of these changes.

CHAPTER 3 - ANALYSIS OF DOMESTIC ARCHITECTURE

The form of domestic structures of the Late Mississippian period in northwest Georgia has been a subject of archaeological investigations for decades. Excavations at Sixtoe (9MU100) and Bell Field (9MU101) both had as part of their research designs an attempt to uncover and describe domestic architecture (Kelly n.d.). The King site (9FL5) contains 27-29 structures, all but two of which have been identified as domestic (Hally and Kelly 1998). Domestic structures have also been identified at Potts' Tract (9MU103), and the Leake site (9BR2).

David Hally has been excavating and analyzing domestic structures since the excavations at Carter's Lake in the late 1960s (Hally 1970, 1979; 1980; Hally and Kelly 1998). He identifies two main concerns in the identification of domestic structures in the field and through analysis. The first is recognition of some basic architectural features and elements that indicate the presence of a structure. These include clusters of postholes, a central hearth, and burial pits. Any of these features can be an indication that one is excavating a structure. The presence of all three, however, is perhaps the strongest evidence. The second problem is separating building stages when domestic structures have been rebuilt one or more times in the same location. At the King site Hally uses evidence such as the distance between the central hearth and posthole alignments, representing outer walls, and compass orientation of burials and posthole alignments to determine the shape, orientation, size, and order of construction of superimposed buildings. Some of these same kinds of evidence have been employed in this dissertation to identify construction stages in Little Egypt domestic structures.

Late Mississippian houses across east Tennessee and northwest Georgia share many

architectural features. The first is the *house basin*. This was a shallow (1 – 2 feet deep) excavated depression in which the house was erected. It was only slightly larger than the structure itself, and soil from the basin was piled against the outside of the structure walls. For this reason early European observers wrote of indigenous houses being subterranean (Adair 1775). The stain of the basin of Structure 2 at Little Egypt, for example, allows us to positively identify a series of postholes from a structure that did not burn (Smith 1975:21). We can then identify the other three walls of the structure using the distance of the known wall from the center hearth. House basins are also found at King, Leake (Patton 1990:18), and Dog River (9DO39, 9DO45) (Poplin 1990). The basin surface also served as the *house floor*. While it is possible that woven cane mats were used in portions of the Little Egypt houses as floor coverings, the distribution of artifactual remains across the entire basin surface suggests that the inhabitants lived, worked, and ate on a compacted dirt floor.

Postholes are the most common and easily recognizable architectural elements representing domestic structures at Little Egypt. They mark the location of exterior walls, central roof supports, interior partition walls, and furniture-like benches or beds that were located against exterior walls. Postholes can vary in size and are usually distinguished from the surrounding soil matrix by their darker fill and, in locations where subsoil is clayey, by their coarser grain size and looser compaction.

Exterior walls were constructed using single-set posts spaced 2 – 3 feet apart. The number of exterior wall posts in Barnett phase houses at King and Leake seems to be somewhat standardized, as it is common to find seven or eight posts in each wall regardless of the size of the structure (David Hally, personal communication). Four posts were used to support rafters near the center of the structure. These four posts established a square area around the central hearth. While the interior roof supports were commonly whole posts, exterior walls and partition walls were typically constructed using split posts. Half and quarter posts have been recovered from postholes along structure walls, and also near locations of central support posts. In the latter location split and smaller whole posts may have been used

to support sagging roof timbers as the main support posts rotted. It is also possible that exterior posts were replaced as they decayed. This would account for postholes that seem out of alignment with structure walls, as well as those that break up the almost standardized distances between posts.

The central feature of all Late Mississippian domestic structures of the type found at Little Egypt is the *hearth*. The hearth is a prepared basin or surface in the floor of the structure that contained the fire used for cooking, heat, and light. The repeated firings left the basin and surrounding area rock hard and red in color. This surrounding area is sometimes referred to as a *hearth apron*. It is thought that coals were pulled out of the fire to warm an area of the hearth apron, upon which cornmeal formed into cakes could be baked (Hally 1983b:13). The area would be heated, then the coals swept aside. The cakes would be placed on the heated area, a whole bowl or large vessel fragment would be used to cover them, and then more coals would be heaped over the cover, creating a temporary oven.

The undersides of roofs were plastered with mud within the area enclosed by the central roof supports to suppress sparks that might have caused fires (Price 1973, Hally 1980). The central area of Structure 1 at Little Egypt was overlaid with a large mass of fired daub covering charred roof timbers and floor deposits. This large daub mass represents the remains of the ceiling plaster. A hole was presumably left at the peak of the roof to let out smoke from the hearth. At the Loy site this smoke hole was plastered with clay (Polhemus 1998:57), while at the Etowah site a structure was excavated with the neck of a jar plastered into the smoke hole (David Hally, personal communication).

The walls of the Little Egypt structures were wattle and daub, and possibly covered with cane mats in places. Wattle, a light frame of interwoven smaller diameter sticks or cane, was fixed to the structural frame (Curl 1992). A clay plaster (daub) was then applied to the walls. Evidence of interwoven cane walls has been recovered from the Leake site (Patton 1990:20). Other walls in domestic structures include *partition walls* and *entrance trenches*. Partition walls were non-load-bearing barriers separating one area from another (Curl 1992).

Remnants of daubed partition walls were recovered at the Loy, Toqua, King, and Leake sites (Hally 1988; Patton 1990; Polhemus 1987:207-208, 257, 283; 1998:52). Partition walls at Little Egypt are represented by posthole alignments extending from the exterior walls towards the center, sometimes with adjacent concentrations of fired daub.

Partition walls for which there is no direct evidence can be inferred through analysis of artifact distribution. Partitions interrupted the even distribution of artifacts across the floor of the structure, and were also areas where tools, vessels, and refuse would have likely been deliberately placed or eventually come to rest. Examining contour maps of artifact density is one way of finding archaeologically invisible partition walls. Linear clusters of artifacts in areas that lack direct evidence of structural elements (like postholes) are probable indicators of partition walls. Most of the partition walls proposed for the structures at Little Egypt were inferred in this manner, as described in Chapter 5.

Entrance trenches have been found at Toqua, Loy (Polhemus 1987; 1998), and King sites (Hally and Kelly 1998). These are presumed to have been low tunnel-like passageways located either at the corners of structures (King) or in mid-wall (Loy, Toqua, and King). No entrance trenches were found at Little Egypt, though the place of entry may be inferred from the location of interior partition walls in the corners that might have been used to block drafts of air from entering the structure. It is possible that a type of entrance construction other than an entrance trench was used at Little Egypt. Proposed entrance locations are described for each structure in Chapter 5.

Fragments of tightly woven *cane matting* have been found at Little Egypt, Sixtoe, and Leake. At Sixtoe and Leake cane matting was found fastened to wattle and daub walls (Kelly et al 1965:184, Patton 1990:20). Cane matting recovered from Structure 1 at Little Egypt measured approximately 4-ft (1.2 m) square, but it could not be determined whether it was placed on the walls or floor (Hally 1980:104). Cane mats are described in historic accounts as wall coverings, floor coverings, roof coverings, and as bedding or bench coverings. In

archaeological contexts mats appear in different areas of the structures, which is likely an indication of the flexibility of their function.

Burial pits are commonly found within late Lamar and Dallas phase domestic structures. Historic accounts describe deceased household members being buried beneath the beds that they used in life (Hally 1988:13). When burial pits occur inside single-stage domestic structures they are commonly oriented parallel with the wall to which they are adjacent. This can be used to determine to which building stage the burial belongs in multi-stage domestic structures, and also assist in the identification of structures when the surrounding postholes, hearths, and other indicators have been lost to erosion, plowing, or other destructive processes.

Summary

The study of domestic architecture can reveal much about the structuring of activity areas. However, the analysis of architectural features is far from simple. Researchers in east Tennessee and northwest Georgia have demonstrated the sometimes incredibly complex array of evidence domestic houses can yield if properly excavated. Because nearly the entirety of prehistoric structures was constructed of biodegradable materials, archaeologists rarely recover more than trace evidence of most architectural features. When rebuilding has occurred in a prescribed area the complexity only increases.

Burned domestic structures have provided archaeologists with good evidence of many of these architectural features. Techniques for determining the presence and absence of other features have been developed, and continue to be refined. A generalized picture of winter domestic structures in Late Mississippian northwest Georgia can now be described.

CHAPTER 4 – LITTLE EGYPT

Physiographic Setting

The Little Egypt site is located on the Coosawattee River in Murray County in northwest Georgia (Figure 4.1). Three physiographic provinces come together in this area: Piedmont, Blue Ridge, and Ridge and Valley. The metamorphic Piedmont province is marked by hilly terrain and narrow stream valleys. The Blue Ridge province in northwest Georgia is the southern terminus of the Appalachian Mountains, which have their beginnings in southern Pennsylvania. The Blue Ridge province is igneous in origin and is marked by mountains and intermountain plateaus. The Ridge and Valley province is a relatively narrow (2 – 22.5 km wide [2.5 - 13.7 mi]) strip of broad, flat valleys divided by tall ridges of sandstone and shale. The Ridge and Valley province extends from New England to Alabama on the west side of the Appalachian Mountains, and is sedimentary in origin.

The Blue Ridge and Piedmont provinces are separated from the Ridge and Valley province by the Cartersville Fault. The fault marks a physiographic shift from the high hills of the Piedmont district and the mountains of the Blue Ridge district to a generally broad, flat valley. The Cartersville Fault impacts river regimes in this area. Rivers beginning in the Piedmont or Blue Ridge to the east of the fault flow west into the Ridge and Valley province.

The Cartersville Fault also marks the point where rivers leaving the Piedmont and Blue Ridge districts have a less severe stream gradient. This loss of gradient causes a decrease in stream velocity, an increase in flooding immediately below the faultline, and the deposition of silt and other suspended particles (Meyers 1995:80). It has been proposed that this creates more fertile floodplains that may have influenced why so many chiefdoms were

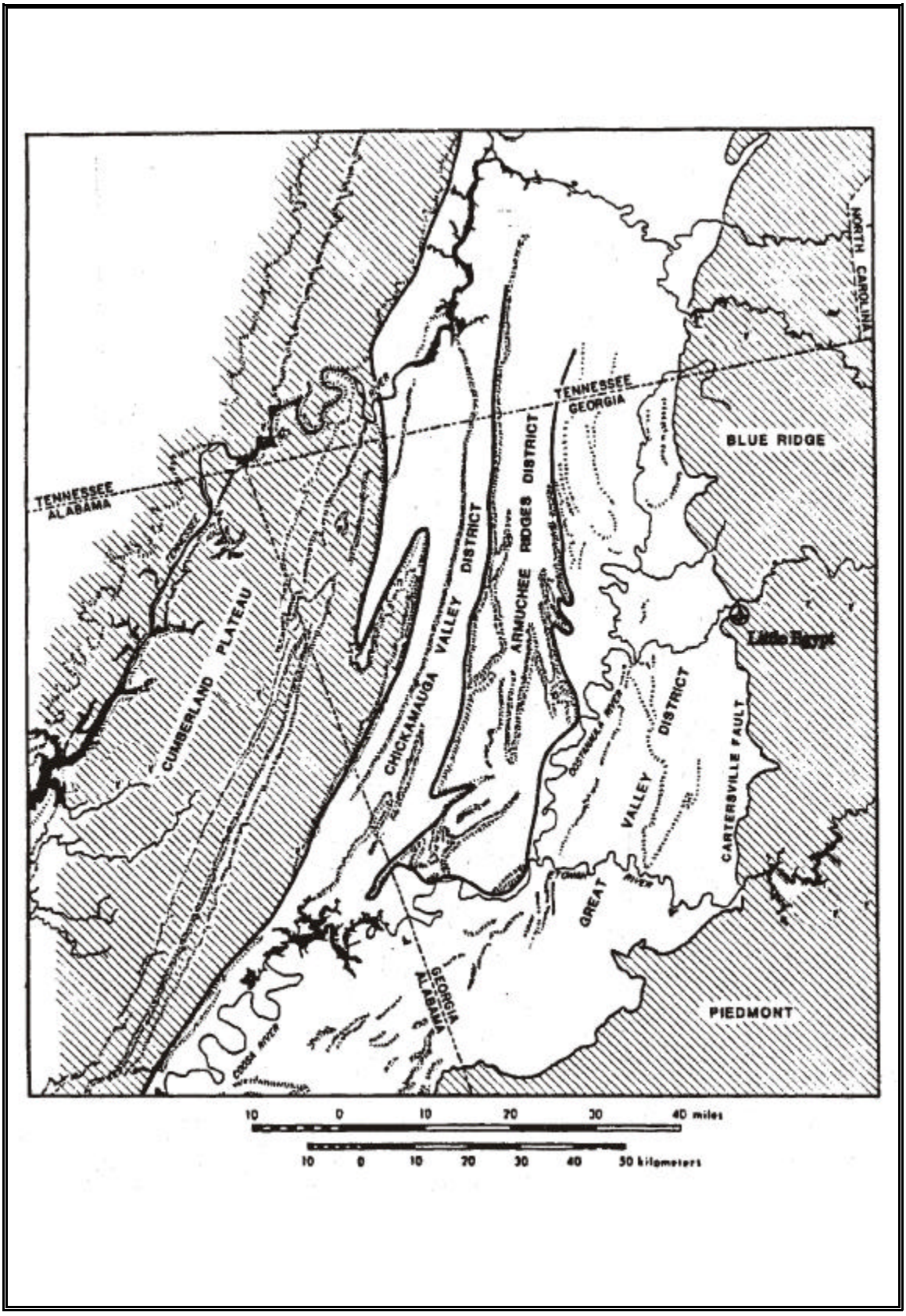


Figure 4.1 - Physiographic regions of northwest Georgia (after Hally and Langford 1988)

located along the fault (Hally and Langford 1988; Larson 1971). However, Meyers (1995:84-85) found only limited support for the increase in flooding and fertility, and only along the Coosawattee River. Results of testing along the Etowah River do not support this hypothesis. Furthermore, differences in soil fertility below the faultline on the Coosawattee River were so slight as to likely be of little significance.

The Little Egypt site is located at the confluence of the Coosawattee River and Talking Rock Creek (Figure 4.2). The Coosawattee River begins where the Ellijay and Cartecay Rivers meet near the present-day town of Ellijay. Today the Coosawattee runs west-southwest to Carters Lake, continuing on to its confluence with the Conasauga River where the two form the Oostanaula River. Talking Rock Creek has its origins approximately 22 km (13.7 mi) south of Ellijay and meanders north-northwest to a reregulation reservoir adjoining Carters Lake.

Little Egypt is located where the Coosawattee River leaves the Piedmont, crosses the Cartersville Fault, and enters the Great Valley District of the Valley and Ridge province. Prior to the construction of Carters Lake the river dropped over 150 m (492 ft) in the course of 35 km (22 mi) before spilling through a gorge into the Great Valley (Brown and Jones 1995:63). Valley floors in this district are at approximately 200 – 250 m (656 - 820 ft) above sea level (asl), while the closest areas of the Piedmont are approximately 300 - 450 m (656 - 820 ft) asl, and upwards of 1200 m (3937 ft) asl in the Blue Ridge. Little Egypt is located in a small cove-like valley that is separated from the Great Valley by a line of small hills to the west. Today the valley is inundated by the reregulation reservoir of Carters Dam.

Soils at Little Egypt are Toccoa-Sequatchie-Whitfield association soils, which are characterized by being generally well drained, and sandy to sandy loam in texture. The geology in the Little Egypt area is considerably complex. Underlying the alluvial soils in the basin are unmetamorphosed sedimentary rocks typical of the Valley and Ridge Province (Pennington 1977; Connor 1985). Phyllite, quartzite, shale, and limestone can be found as bedrock in the basin. Amphibolite, gneiss, slate, quartzite, meta-artillite, phyllite,

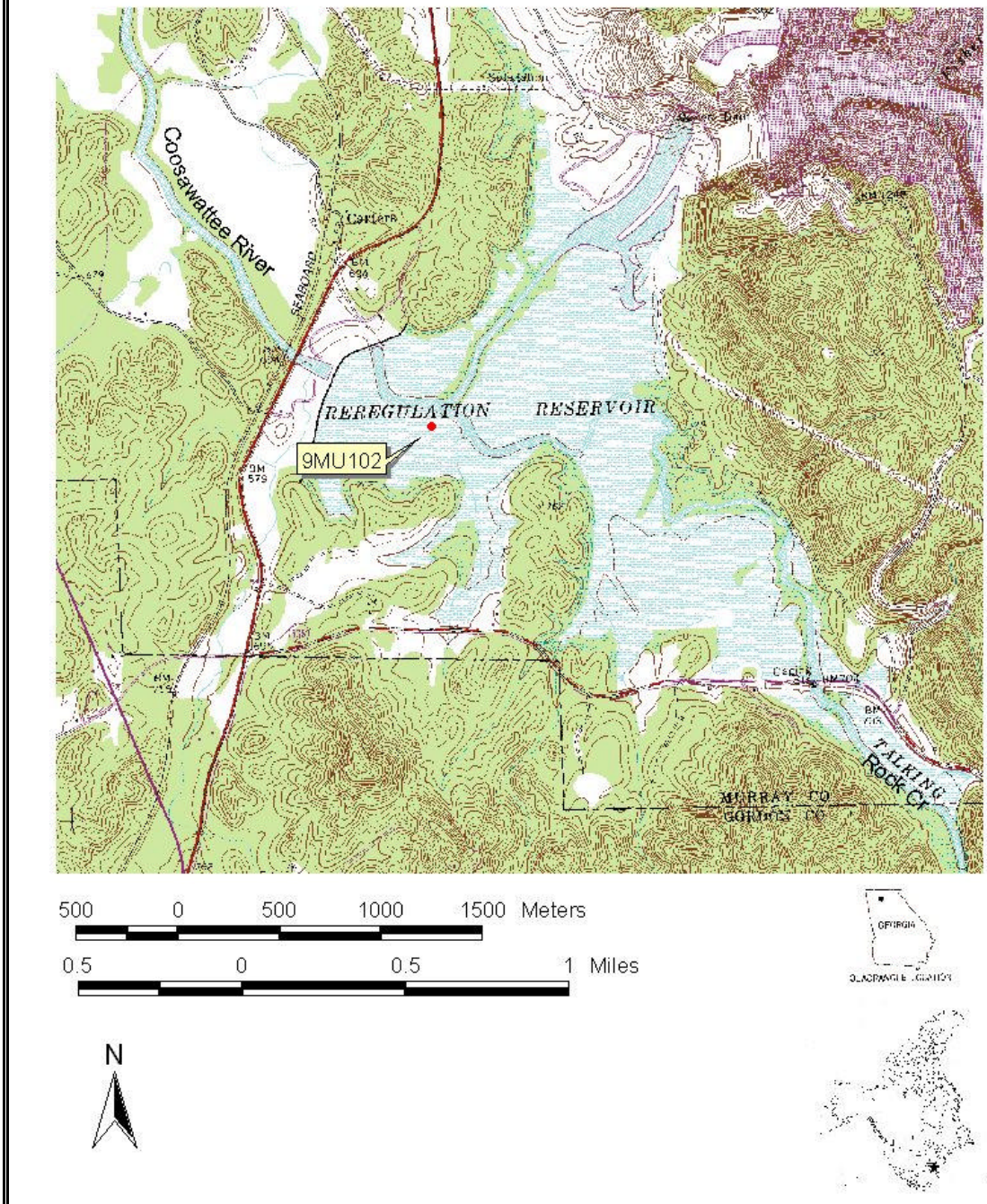


Figure 4.2 - Location of Little Egypt (9MU102)

metagraywacke, and mica schist occur in the geologic strata to the east of the basin in the metamorphic Piedmont Province. Several types of chert occur to the west of the basin, including Fort Payne chert, the Knox group, Newala chert, and Armuchee chert. Pennington (1977:173) reports that all of the materials used to make tools at Little Egypt are available locally (within 8 km [5 mi]) except three, all of which had sources within 48 km (30 mi) of the site. She also notes that two unworked pieces of diabase found at Little Egypt are from a source some 80.5 km (50 mi) to the southeast.

Forests around Little Egypt varied by province. The Piedmont was likely originally covered with oak-hickory-pine forests, while the Valley and Ridge contained oak-pine-hickory forests. The Blue Ridge province to the north was probably covered in oak-chestnut-pine forests. Species likely present include: chestnut oak, red oak, white oak, spanish oak, post oak, black jack oak, dogwood, maples, hickory, shortleaf pine, and loblolly pine, among others.

The climate of this region is relatively mild. No published climatic data for Murray County was located, but data is available for nearby Gordon County. Between 1.3 and 1.6 m (51 - 63 in) of precipitation fall annually in the form of intense rainstorms during the winter months of December through March, and more localized scattered summer showers. The average number of frost-free days for this area is 215. The average maximum temperature is 70.6˚ F, with a minimum of 48.5˚ F. The July maximum temperature is 87.5˚ F, and the January minimum temperature is 32.3˚ F.

Cultural Setting

The reregulation lake covers several sites in addition to Little Egypt. These include Sixtoe Mound (9MU100), Bell Field Mound (9MU101), Potts' Tract (9MU103), and 9MU104. Several of the sites, including Little Egypt, are multi-component sites and range in time from the Archaic through the Mississippian, and into the proto-historic era. Little Egypt itself has evidence of Woodland, Early Mississippian, Late Mississippian, and post-Contact occupations. Artifacts diagnostic of the Archaic period have also been found at Little Egypt.

By far the most intensive and extensive occupations at Little Egypt occurred during the Little Egypt and Barnett phases of the Late Mississippian period. Mound A was constructed during the Little Egypt phase (A.D. 1350 – 1475) and the first four stages were completed. During the Barnett phase (A.D. 1475 - 1575) the Little Egypt site was expanded, and a second mound was constructed. Potts' Tract, located upstream of Little Egypt on Talking Rock Creek, was also occupied at this time, although it is not known just how extensive the site may have been and what its relationship to Little Egypt was.

The Barnett phase is defined by its particular ceramic assemblage that includes Lamar incised, Lamar complicated stamped, Lamar plain and coarse plain, Dallas plain, and small frequencies of Dallas incised, Dallas filleted, McKee Island cordmarked, and grit-tempered cordmarked ceramics (Hally and Langford 1988:71-72). Grit and shell tempering are found in relative frequencies of 75:25. This is an almost complete reversal of the frequencies of these tempering agents in earlier Little Egypt phase ceramics (29:71). Almost identical frequencies for Barnett phase and Little Egypt phase ceramics have recently been reported from the Thompson site (9GO4), a single-mound village site on the Coosawattee River (Worth 2000). Vessel forms include pinched rim jars, Mississippian jars, carinated jars, carinated bowls, rounded bowls, flaring rim bowls, bottles, and "gravy boat" bowls (Hally 1984). Most forms occur in several sizes.

Other Barnett phase sites along the Coosawattee River include (in order from Little Egypt and Potts' Tract downstream to the confluence of the Coosawattee and Conasauga Rivers): Swancy (9GO70), Poarch (9GO1), Thompson, Baxter (9GO8), and the Brown Farm site (9GO67) (Langford and Smith 1990). These sites make up the core of the chiefdom of Coosa, as noted by chroniclers of the De Soto expedition (Hally 1994; Hudson et al 1985; Langford and Smith 1990). The capital town, Coosa, was likely located at Little Egypt. The Thompson site was possibly a secondary center as it is the only other known site with a mound in the chiefdom.

The Spaniards also made note of a province of Coosa, an approximately 400 km (250

mi) long political entity extending from eastern Tennessee to eastern Alabama (Hudson 1997; Hudson et al 1985). Knowledge of Coosa extended beyond the Ridge and Valley province into the Piedmont of Georgia and South Carolina. Indian guides from the chiefdoms of Ocute in central Georgia and from Cofitachequi in central South Carolina reported to De Soto that the large chiefdom of Coosa lay to the northwest (Hudson 1997:165, 183). The exact political arrangements that kept this enormous paramountcy together are unknown. It is suspected that paramount chiefdoms would have been short-lived as the amount of control a distant chief could exert on subordinates many days travel away from the center would have been fleeting at best. Other factors might have also contributed to the difficulties of sustaining the paramount chiefdom. For example, the paramount chiefdom of Coosa encompassed several different language groups and cultures (Hudson 1997).

In the decades following De Soto's visit to Coosa (A.D. 1600 – 1650) the chiefdom collapsed, and people along the upper Coosawattee River began a migration to sites in Alabama and later formed the Upper Creeks (Smith 1998, 2001). Creek groups remained in areas of east Tennessee, northwest Georgia, and northeast Alabama and apparently lived in close proximity to Cherokee groups in the eighteenth century. Swanton (1946) reports that the Cherokee expelled the Creeks from east Tennessee around 1755. When white settlers began to displace the Cherokee from their northern towns they petitioned the Creeks, who gave them permission to occupy the "valley of the Coosa," including the entire valley of the Coosawattee River (Swanton 1946:112). The Little Egypt site was occupied by Cherokee groups in the late eighteenth century. The site is referred to in early maps of the region as Coosawattee Old Town, a Cherokee village. The name Coosawattee may be a derivation of a Cherokee word, "kusawati-yi, " meaning "old Creek place." European settlement of the area began after 1830.

CHAPTER 5 – THE SAMPLE

In this chapter the history of excavations at Little Egypt as they pertain to Structures 1, 2, and 3 are outlined. Each structure is described and the limitations of the samples are evaluated. It should be noted that David Hally used tenths of feet as a standard unit of measurement during his excavations at Little Egypt, hence the sometimes awkward conversions to metric below.

Site Conditions

The physical conditions of the site warranted the use of particular excavation techniques by Hally. When Warren K. Moorehead (1932) visited Little Egypt in 1925, he was able to make a surface collection (unaccounted for today) in the village area. By 1969 much of the site was covered by 30 - 60 cm (1 – 2 ft) of alluvium (Hally 1979). Hally speculated that most of the alluvium must have been deposited since European occupation of the area (circa 1830s), possibly only since Moorehead's visit. Evidence for this includes an old plowzone Hally identified below a sandy stratum covering the village area.

Both mounds have been re-shaped through plowing and flooding. The steep north slope of Mound A was likely formed by floodwater erosion. The gentler gradual east and south sides of Mound A were likely caused by both erosion and plowing. The north and east sides of Mound B have also been altered considerably by floodwaters. The south slope of Mound B has apparently been plowed. When the site was last farmed in 1968, the entirety of the village area and both mounds were under cultivation.

An area to the north of Mound A and east of Mound B has been alternately scoured and buried by floods in recent decades. Moorehead excavated some 20 burials from this area, reportedly near or exposed at the ground surface. Land to the north of the mounds was lower

than the flood plain south of the mounds. This suggests that floodwaters swept behind and between the mounds, scouring away the surface of the site. In some areas of the village we can expect to find that the aboriginal ground surface has been scoured away, leaving intact deposits within the house basins only.

Since the 1920s floods have slowly added deposits to the plain. In 1925 Moorehead noted a terrace running roughly east-west behind Mound B, with the field to the north of the mounds being noticeably lower than the ground surface south of the mounds. At the time of Hally's excavations the field north of the mounds was level with the rest of the flood plain. Hally found culturally sterile sandy deposits over 1.8 m (6 ft) deep covering the plain north of the mounds and 30 - 60 cm (1 – 2 ft) of sandy deposits to the south of the mounds.

Excavation Techniques

During the 1969 and 1970 seasons Little Egypt was trenched and test pits were excavated (Figure 5.1). A site datum (elevation 675.01 ft [205.88 m] asl) was set at the northwest corner of Mound A. Trenching was used to characterize the buried deposits and plot their distributions. Overburden was removed from the 3-ft (.9 m) wide trenches with a backhoe, and remaining midden deposits were excavated by hand. When evidence of a structure was encountered the excavation was halted in that area. Following analysis of profiles, artifacts, and features several areas of the site were chosen for more intensive block excavations. A backhoe was used to remove the 9 - 18 cm (.3 - .6 ft) of overburden in these areas. Further excavation was conducted using shovels and hand-trowels.

Five blocks were excavated during the 1970 – 72 seasons. XU 1, XU 4, and XU 5 included domestic structures (Structures 1, 2, and 3 respectively). XU 2 and XU 3 were initially believed to also include domestic structures, but the occupation surfaces encountered within those blocks turned out to be "outdoor" surfaces. XU 6 included a Little Egypt phase structure constructed on the summit of the last intact stage of Mound A. Fill dirt and overburden was removed from each excavation unit first with a backhoe and then by hand as the excavators encountered evidence of structural debris. This structural debris

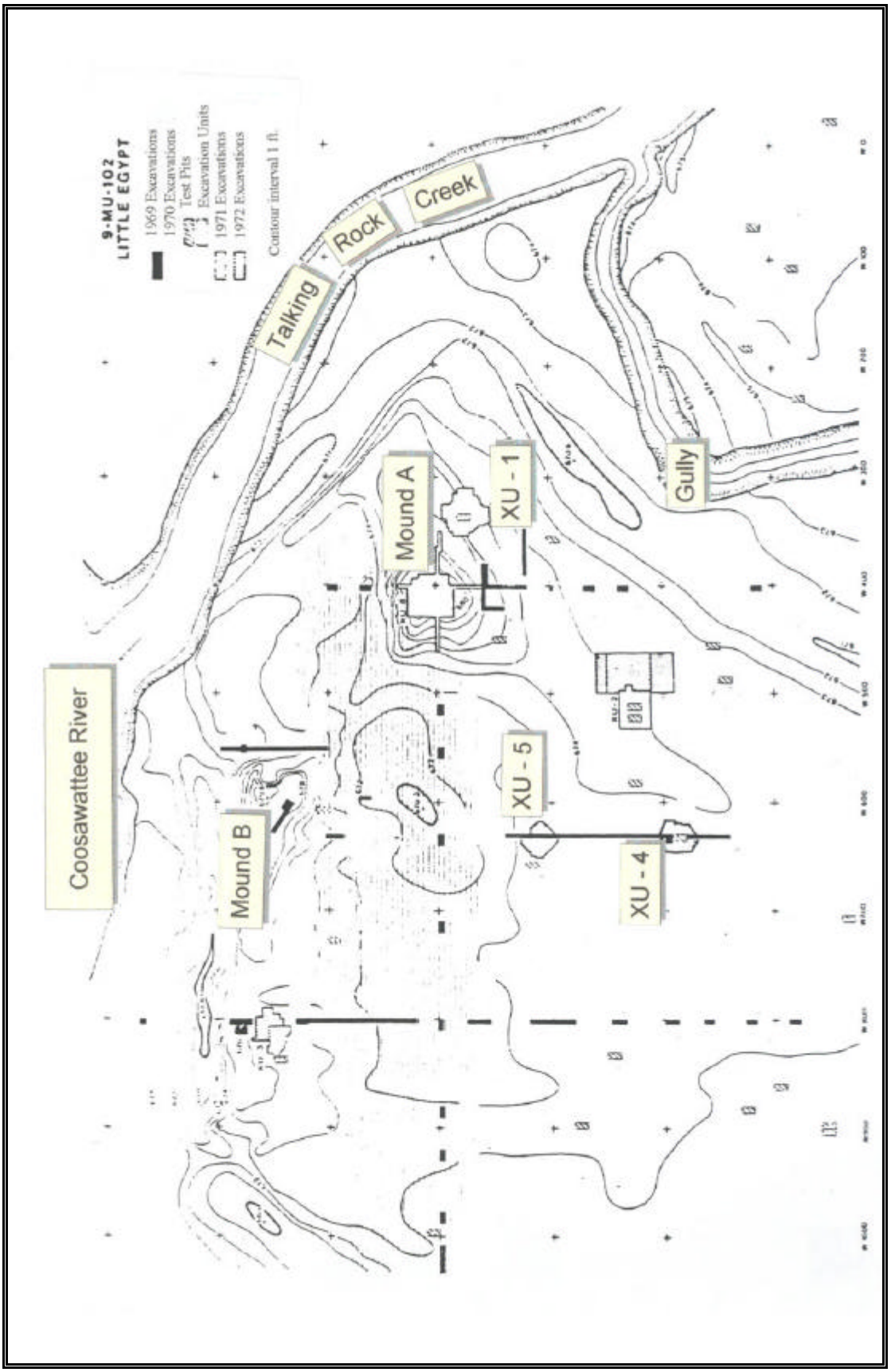


Figure 5.1 - Excavations at Little Egypt, 1969 - 1972

usually took the form of layers of charred wood and daub, excepting Structure 2, which did not burn. Occupation surfaces in block excavations XU 1, XU 4, and XU 5 were excavated in 2 by 2 ft squares (approximately 60 by 60 cm). Large artifacts lying on the intact floors of structures were piece-plotted. Excavation of Structure 3 was not completed during the 1972 field season. The unexcavated northern portion was completed during a weekend in April 1974 under rather adverse conditions; hence no artifacts were piece-plotted. Soil samples were taken from the 2-ft squares of all three structures and later floated. The amount of soil collected from each square varied depending on the thickness of the deposits and were recorded for Structures 2 and 3 (see below). Soil quantity removed from the 2-ft squares was not recorded in XU 1. Hally reports that some squares yielded two bags of approximately 20 lbs (9 kg) of soil, but most contained only one bag of 10 – 20 lbs (4.5 - 9 kg) of soil (Hally 1980:97). Due to the high costs of analysis, only half of the flotation from each structure (alternating squares) was subjected to sorting and analysis. Unless otherwise noted, flotation samples were first chemically separated using a zinc chloride solution, then sifted with a 2.5 mm (.1 in) mesh. Materials less than 2.5 mm were not sorted.

Artifacts were analyzed at the University of Georgia, Athens. David Hally and his students sorted flotation samples into six categories (pottery, flaked stone, non-flaked stone, charred plant remains, animal bone, and miscellaneous [mainly daub fragments]) for further analysis. Detailed analysis of pottery was conducted by Hally. Beverly Conner conducted analyses of flaked stone tools and debitage. Marilyn Pennington analyzed non-flaked stone tools. Janet Roth, under the tutelage of Bruce Smith, analyzed the faunal materials. Botanical samples from XU 1, XU 4, and XU 5 were sent to Richard Yarnell and Gary Crawford (University of North Carolina, Chapel Hill).

Structure 1 - Investigations

Note: All structures were excavated in 10ths of feet, and this unit is used to describe the structures below. General descriptions of the structures were derived from Hally 1980.

In 1970 a test pit excavated at N380 W335 uncovered evidence of a burned structure. The unit was expanded after additional testing determined the approximate size and orientation of the structure. A backhoe was used to remove the overburden to an elevation of 675 ft where daub and charred timbers from the burned superstructure were encountered. These were mapped and the stratum of burned superstructure material was removed by hand. The floor of Structure 1 was excavated in 2-ft squares. Soil samples were taken from the center and each corner of each square and later floated. Approximately 10 – 20 lbs of soil was collected in one or two bags from each square.

At the time of excavation XU 1 was believed to be located in the village habitation zone immediately south of Mound A. In actuality, Structure 1 is located on a low terrace on the east side of Mound A. The terrace is an approximately 2-ft (60 cm) high platform attached to the mound. Structure 1 was constructed in a basin dug at least .5 ft (15 cm) into the terrace. A thin layer of sandy soil was encountered within the confines of the basin and was interpreted by Hally to be a prepared floor (Hally 1980: 96). Cultural materials were found within and immediately above this stratum. A stratum of burned superstructure material overlay much of the floor area and effectively sealed floor deposits from the overlaying basin fill. Outside of this area it was difficult to separate floor artifacts from those in the basin fill. There is no guarantee that some artifacts from the fill were not inadvertently included with excavated floor deposits. Fortunately there was relatively little cultural material in the basin fill.

The quantity of soil varied primarily due to the precision with which floor deposits could be identified. Where roof daub overlay the hearth and fired clay apron area, floor deposits could be isolated readily. As a result the thickness of “floor deposits” excavated in these areas were about 0.1 ft (3 cm) thick. In an area where the floor surface was more difficult to define visually, a thicker stratum of “floor deposits” were excavated in order to bracket the floor surface and increase the likelihood that the actual floor deposits were recovered. An attempt was made to excavate areas of the floor from each corner and the

center of each 2-ft square. So, although the amount of soil processed by flotation from each square varied by as much as 100 percent, the amount of floor surface in each square actually varied little.

Structure 1 is oriented approximately 45 degrees off the cardinal directions (Figure 5.2). It measures approximately 31.6 ft (9.6 m) (SW-NE) by 30.4 ft (9.2 m) (SE-NW) and contained about 960 sq. ft (89.2 sq. m) of floor space. Structure 1 appears to have had only a single construction stage. This conclusion is based on several pieces of evidence. First, the central hearth has only one construction stage. Second, there is only one set of exterior wall posts. Multiple posts near the locations of the central support posts were probably additional supports used as the main supports began to decay, replacement posts, or had other functions such as supporting partition walls. Several postholes lacking burned posts (n=11) and at least two pits that extended into Structure 1 from higher strata post-date the structure. It is not certain that these unburned posts and pits are from a later structure but there is stratigraphic evidence that Structure 1 was succeeded by a later platform stage and a structure erected on its surface.

There is ample evidence to suggest that Structure 1 was destroyed by fire. This includes heavy daub deposits over large areas of the structure floor. Charred timbers and posts were encountered in areas of the structure that were covered with the fired daub deposits.

Postholes were not excavated. The shape and size of the individual charred posts was not recorded except as drawn on field maps. Review of the field maps indicates that approximately one-third of them contained split posts and the remainders were whole, round posts. Along the southeast and southwest walls there are complete rows of posts. They are straight for an average of 20.13 ft (6.13 m). The average distance between the posts is 3.85 ft (1.17 m). There are seven posts in the southwest wall and eight posts in the southeast wall. Gaps caused by missing posts in the northwest and northeast walls make further analysis tenuous. It is interesting to note that these gaps are approximately evenly divided by the

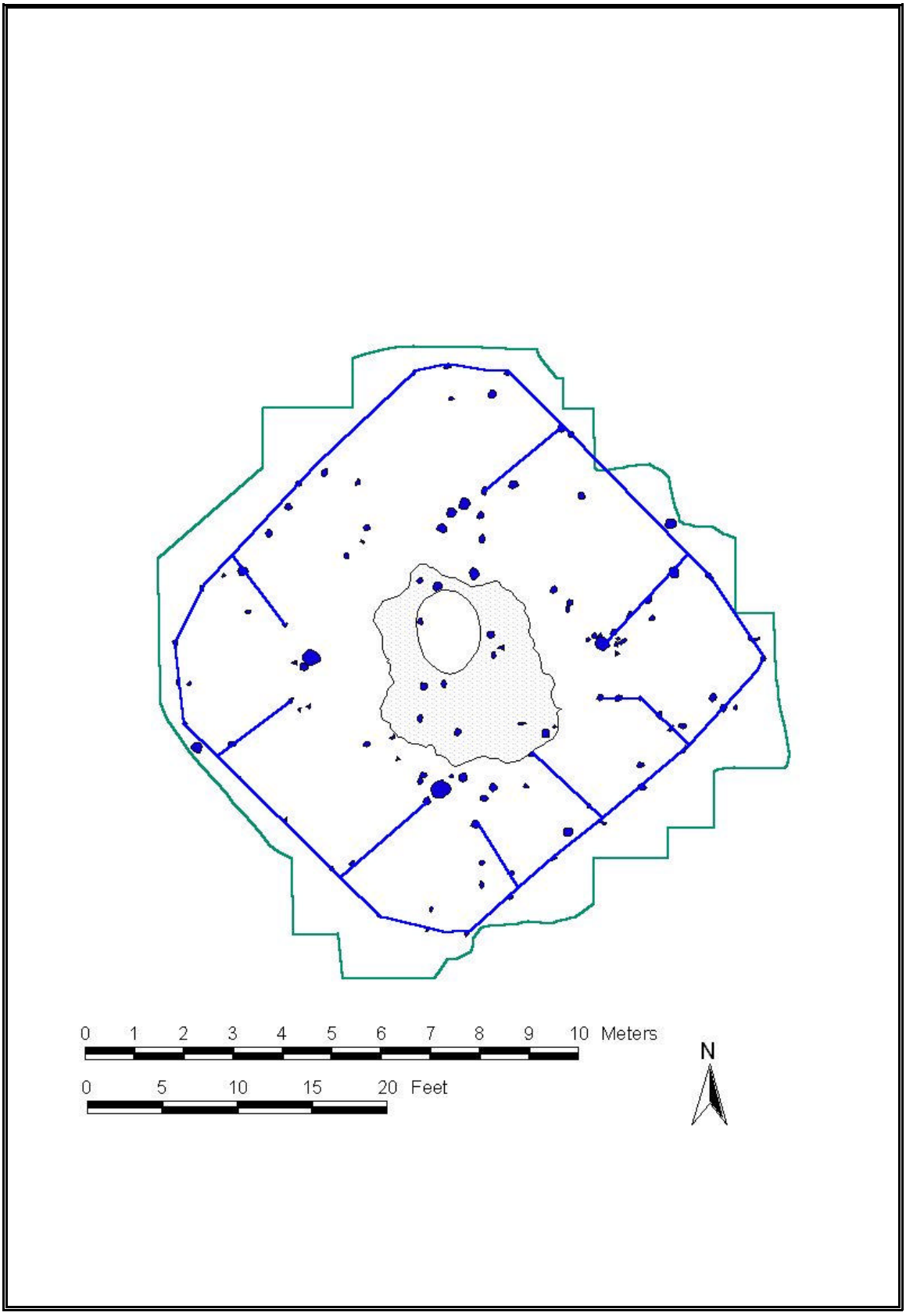


Figure 5.2 - XU 1, plan view of posts, hearth, and proposed walls

average distance between posts, suggesting that missing posts conformed to the pattern noted above. Distances between existing posts along the northwest and northeast walls generally conform to the average distances from the complete walls in the southern half of the structure.

Several partition walls extend from the outer walls to the center posts (Figure 5.3). The locations of these partition walls have been determined through the existence of postholes, fired daub deposits, and some burned cane remnants. Two partition walls appear to enclose the southern corner of the house. Other partition walls may also be enclosing storage areas at the corners, or were markers for limits of living/working spaces along the long exterior walls, or both. Two partition walls extend from the exterior wall to central posts. Other partition walls appear to extend to smaller posts 2 – 3 ft (60 - 90 cm) away from central posts. This would allow passage between these partition walls and central posts. The distribution of daub suggests that there was a second partition wall along the northwestern wall near the northern corner, but there are no good candidates for support posts.

It appears as though the entrance to Structure 1 was at the east corner. This location makes some sense, as an entrance at the western corner would open onto the elevated central portion of Mound A. Rain could presumably also wash into an opening on this side of the house. An entrance at the northern corner would open towards the river. It is not known whether it was preferable or common to have the structure open towards the rest of the village, as would be the case if the entrance was indeed in the east corner. The sample of structures excavated at Little Egypt is too small to draw any conclusions about common orientations of entrances, if any exist. As noted by Hally (1980:101-102), structures at the King site and Potts' Tract had entrances near one corner of southern walls. This pattern was observed at Dog River as well (Poplin 1990). Structure 2 at Dog River is oriented similarly to Structure 1 at Little Egypt, and has an obvious entrance at the east corner. It should be noted that all of these examples also had wall trench entrance passages or, in the case of Dog

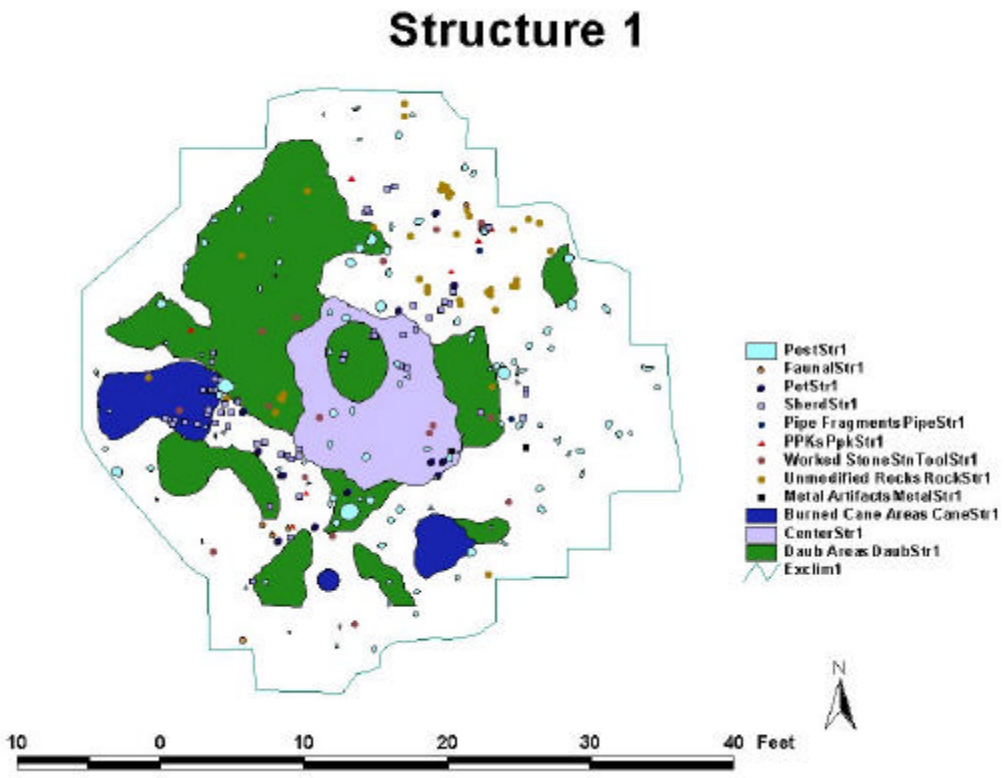


Figure 5.3 - Structure 1, remains of superstructure

River, clearly defined entrance trenches. Neither of these types of evidence is found at Little Egypt.

The entrance to Structure 1 may also be inferred from the placement of internal partition walls. One partition wall in the east corner curves in towards the center of the structure. This is somewhat different from “dog-leg” shaped entrances found in some domestic structures from the King site (ex. Str. 4) or Dog River (ex. Str. 1 and Str. 2) but likely served a similar purpose. It is believed that baffles were placed in front of entrances to prevent wind or rain from blowing directly into the structure.

Hally has observed that artifacts tended to accumulate immediately inside and to the sides of entrances (David Hally, personal communication). Artifactual evidence for an entrance at the east corner includes piece-plotted artifacts found primarily to the sides of the compartment. Data from the flotation samples is not as useful as several squares in the proposed pathway were not analyzed. Artifacts recovered from the east corner include a light scattering of sherds and flakes, two ceramic discs, three ceramic pipe fragments, and a small milling stone found near an exterior wall post. Pedestrian traffic through this area would push larger materials to the sides of the pathway.

The central hearth consists of a slightly raised (.2 ft [6 cm]) fired clay area. Discolored, fired soil extends 1.2 ft (36 cm) below the center of this area. A fired hearth apron surrounds the hearth. It extends approximately 2.5 ft (76 cm) from the edge of the hearth towards the northeast, northwest, and southwest. Towards the southeast the hearth apron extends over six feet from the edge of the hearth. The hearth and apron are largely enclosed by the four central posts. The distance between central posts is 13.6 ft (4.1 m) on average. The space enclosed by the central posts is 95.59 sq. ft (8.9 sq. m); approximately ten percent of the total floor space.

Structure 1 – Nature and Size of Sample

In an ethnohistoric study of Mayan household refuse disposal, Michael Deal (1985) proposes several scenarios for household unit abandonment and the resultant pottery assemblage. His findings are applicable to a certain extent to other artifacts commonly found in household contexts. He divides these abandonment processes into three stages: preabandonment, abandonment, and postabandonment.

In the preabandonment stage materials (pottery in particular) can be provisionally stored for future reuse or disposal, and/or removed or displaced through maintenance and cleaning activities. During the abandonment stage, the nature of materials (i.e. size, condition, location, etc.) left at the household unit are influenced by the rate of departure (gradual or rapid) and the anticipation of returning or not returning. Deal (1985:269-270) speculates that a rapid abandonment with no anticipation of return is less common than gradual abandonment, and likely involves mass abandonment of the entire community (excepting house fires). Abandonment caused by fire, natural disaster, warfare, or other unforeseen destructive factors would likely also impact the nature of materials left in the household unit. First, household members may not be able to salvage or remove items from within structures. Secondly, house fires or other destructive forces may alter the condition and distribution of materials left behind. If a return to the household unit is anticipated, complete items and intact vessels may be deliberately left behind. Further alteration of household material assemblages can occur in the postabandonment stage, through such processes as scavenging, alteration of deposits by children playing, and refuse dumping.

The nature of the abandonment of Little Egypt Structure 1 has important implications for the interpretation of artifact content. The immolation of the structure likely resulted in rapid abandonment by the residents. Their misfortune provides us with a “snapshot” of domestic activity structuring. Tools, vessels, food, fuel, and nearly every other material in the structure at the time of the fire would likely have been left in place. Whole pottery vessels and tools, in addition to serviceable vessel fragments and tools, raw materials, food, and refuse

were found on the floor of the structure. Although the destruction of the structure by fire can be expected to have altered the materials left within, organic remains that otherwise would have decayed naturally are well preserved. Botanical remains have been analyzed to determine the season in which Structure 1 burned (Hally 1981). By comparing when certain parts of plants are available to the species recovered in flotation samples from Structure 1, Hally posits that the structure burned in the fall between mid-October and mid-December.

Structure 2 - Investigations

The 1969 excavation of the W360 trench uncovered evidence of a structure between N170 and N204. Because the structure had not burned it was not recognized until the trench intercepted the hearths and several vessels lying adjacent to it. A 5 by 10 ft (1.5 by 3 m) test pit was excavated around the central hearth in 1970. This unit confirmed that the floor surface of Structure 2 was virtually invisible. Excavations of the rest of Structure 2 began in 1971 and were completed shortly after the start of the 1972 field season. As in Structure 1, a backhoe was used to remove overburden from an approximately 30 by 35 ft (9 by 10.5 m) area. Excavations then continued by hand.

Profiles of the 5 by 10 ft test pit, artifact elevations, and posthole distributions indicated that the structure had been rebuilt one and possibly two times (Figure 5.4). Artifact elevations and the elevation of one hearth (Hearth 1) indicated that the floor of the latest structure (Str. 2a) occurred at approximately 671.4 – 671.5 ft. Similar evidence indicated that the floor of the earliest structure (Str. 2c) occurred between 670.8 and 671.1 ft. Structure 2c was centered on Hearth 2 located 4 ft northeast of Hearth 1. The only real evidence for an intermediate structure (Str. 2b) is the fact that Hearth 1 was built in two stages. Whether new walls were erected and a new floor prepared each time the hearth was remade is not known.

Posthole detection was difficult. Floors were difficult to define although that of Str. 2a could be followed using the elevation of the abundant artifacts laying on it. The floor of

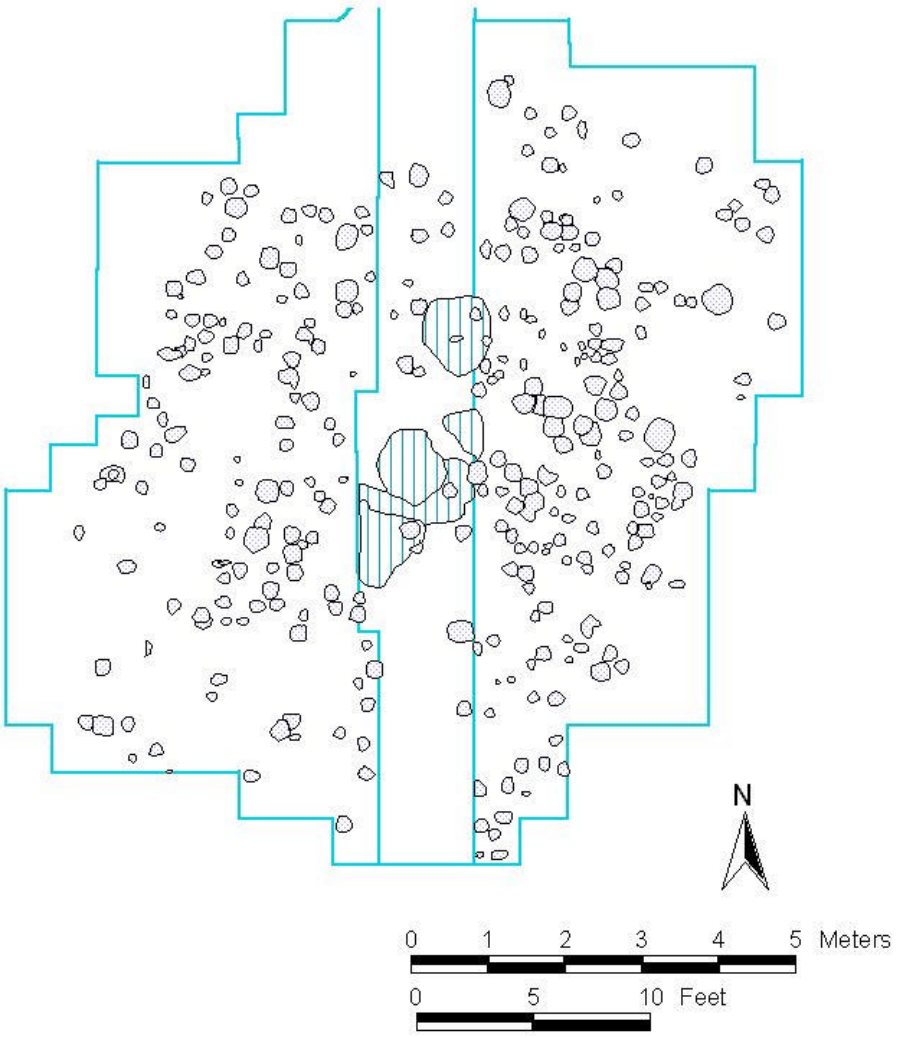


Figure 5.4 - XU 4, Plan view of posts and hearths

Str. 2c was detected by following the surface of sterile subsoil. Large artifacts on the floor of Str. 2a were piece-plotted. The floor surfaces were divided into 2 by 2 ft squares. Soil samples (two 10-gallon bags) were removed from each square, weighed, and processed by flotation. Usually a .3 ft (9 cm) thick layer of soil was taken in order to bracket the actual floor surface. No flotation samples were taken from the W360 trench or the 5 by 10 ft test pit.

Structure 2a was erected in a basin at least .8 ft (24 cm) deep in the presumed village habitation zone. Remnants of this basin were observed as color-changes between the surrounding sterile sub-soil and the matrix of the basin deposits on three sides of Structure 2 (Hally 1980:206). Structure 2a is oriented approximately 30 degrees off north (Figure 5.5). It measures approximately 24.2 ft (7.3 m) (SW-NE) by 21.2 ft (6.3 m) (SE-NW) and contained about 510 sq. ft (47.3 sq. m) of floor space. Structure 2c is also oriented 30 degrees off north and is nearly identical in size, but is located north of Str. 2a.

As mentioned above, Structure 2a (heretofore called Structure 2) does not appear to have been destroyed by fire. No heavy daub deposits or burned roof materials were uncovered from the overburden above the floor deposits. Hally also observed that the vessels and vessel fragments recovered from the floor of Structure 2 did not exhibit any post-break firing (Hally 1980:206).

Posthole alignments in Structure 2 are difficult to identify with certainty due to the large number of postholes in the excavation unit. Gaps in the proposed wall alignments may be due to a number of factors, not the least of which is the difficulty in distinguishing postholes in the dark brown clay subsoil. Gaps at the north and south corners may be due to the difficulty distinguishing postholes in the long exposed floor of the W360 trench. If the missing posts are placed following the pattern seen in the existing posts there are seven posts in both of these walls. The average distance between all existing sets of posts is 3.3 ft (1 m).

As the structure did not burn, evidence for partition walls in the form of daub deposits or charred posts is not present. However, analysis of piece-plotted artifacts and

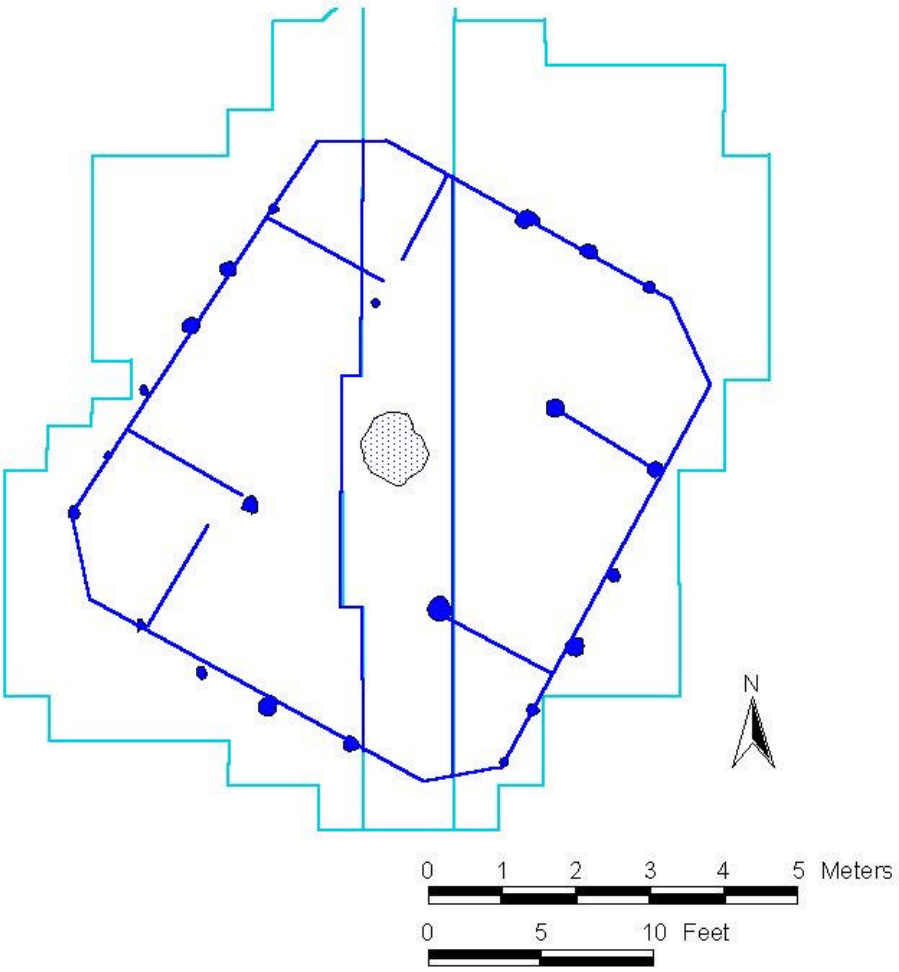


Figure 5.5 - Structure 2; posts, hearth, and proposed walls

flotation sample distributions indicates that at least two partition walls existed along the southeast side of the structure. Additional partition walls likely existed and can also be inferred through analysis of artifact distributions, though their placements are more tenuous. A partition wall separating the north corner from an area along the northwest wall is proposed. Several whole and partial vessels were recovered just south of the proposed partition wall following a pattern similar to Structures 1 and 3. A second partition wall is proposed at the interface of the west corner and the area along the northwest wall. A partial vessel north of this wall cross-mends with a partial vessel found south of the previously described partition wall. Additionally, concentrations of flakes were higher in squares from the west corner than in squares from the nearby northwest wall area. A third partition wall is proposed between the west corner and an area along the southwest wall. This placement is based on the distribution of flakes and nut shell remains. The overall placement of partition walls for which there is little concrete evidence (postholes or daub deposits) is further supported by a pattern observed in domestic structures from eastern Tennessee and northwest Georgia. It is unlikely that a domestic structure at Little Egypt was built without several partition walls dividing the interior floor space into discrete areas.

It is unclear where the entrance to Structure 2 was located. As in Structures 1 and 3, no evidence of entrance trenches was recognized. Structures excavated at the King site have entrances at corners or mid-wall in the southern half of the structure (David Hally, personal communication). Existing postholes from the southwest wall of Structure 2 make the possibility of a mid-wall entrance unlikely. A gap in the posthole alignment from the southeast wall may indicate a possible mid-wall entrance, though the distribution of artifacts recovered from flotation samples inside the structure at this gap makes this an unlikely location. Based on Hally's observation regarding artifact accumulation inside entrances, the south or west corners are good candidates for the location of an entrance for Structure 2. Very few artifacts were recovered from what remained of the south corner to the east of the exploration trench. Unfortunately, any baffles or "dog-leg" partition walls would have been in the area scraped

away in the trench. No baffles were found near the west corner, but the near absence of any artifacts is strong evidence of an entrance being located there.

The central hearth is a slightly convex circular feature approximately 3 ft (91 cm) in diameter. As mentioned above, this hearth was discovered through the excavation of the exploration trench. At the time of excavation a thin (.1 ft [3 cm]) layer of white fired clay was removed from the hearth. This layer is thought to represent a repair or renewal of the hearth (Hally 1980:211). The hearth apron adjacent to the hearth on its southwest side is small compared to that in Structure 1, measuring only 3.5 by 5.5 ft (1 by 1.7 m). Several broken pottery vessels were recovered from this fired surface. The hearth and apron are enclosed by the four central posts. The average distance between central posts is 9.9 ft (3 m). The space enclosed by the central posts is 47.4 sq. ft (4.4 sq. m), which is approximately nine percent of the total floor space.

Feature number 98 was assigned to a large mass of chert debitage located near the southeast wall. Hally (1980) reports that the deposits were up to .5 ft (15 cm) thick in some areas. Materials from Feature 98 include chert debitage, non-chert rocks, and non-flaked stone tools.

Structure 2 - Nature and Size of Sample

Structure 2 was not destroyed by fire, but was instead abandoned and left to collapse before fill-dirt was used to fill the house basin. The lack of catastrophic destruction of Structure 2 has important implications for the interpretation of the structure and artifact content. Following Deal's (1985) models of household unit abandonment, these implications can be observed in the pre-, abandonment, and post-abandonment phases.

Preabandonment: Organic materials present in the structure at the time of abandonment would likely decay unless charred prior to disposal. Hally's (1981) study of botanical remains from Little Egypt demonstrates that the charred plant remains recovered in Structure 2 flotation samples were probably charred during cooking or other processing activities involving heat. Only materials charred in this way would be preserved in the

archaeological record. Distributions of charred plant remains in Structure 2 are likely the product of disposal activities and are not necessarily reflective of where items were stored or used. In burned structures, plant materials that were not processed with heat (and potentially charred, as explained above) but were instead charred in the house fire can give us some indication of where storage, cooking, and other pre-cooking activities took place. As only those plants that were charred before the abandonment of Str. 2 were preserved, we can assume that they are distributed in areas where debris was allowed to accumulate.

Abandonment: In spite of the fact that the structure appears not to have accidentally burned, there is evidence to suggest the occupants left quickly and did not return. First, a wide range of serviceable tools and vessels were recovered from the floor of Structure 2. As in Structures 1 and 3, items like vessels and tools are likely recovered where they were last used or placed. If, as is proposed here, the structure were abandoned rapidly, these items would likely have been left where they were last used or stored. A more orderly distribution of materials would also be an indication that a return to the structure was anticipated (Deal 1985:269). A dearth of materials, particularly whole or serviceable items would indicate that abandonment was planned and no return was anticipated (Poplin 1990). As such, the distribution of artifacts across the floor of Structure 2 much resembles those of Structures 1 and 3, and is a better candidate for a rapid, unplanned abandonment.

Postabandonment: Because the structure appears to have collapsed sometime after abandonment, there is the possibility that deposits were disturbed by people scavenging materials and/or serviceable tools, children seeking a place to play, or other idiosyncratic human behaviors. The structure, while still standing and also after collapse, would have been a potential refuse disposal area by other households.

There is substantial evidence to suggest that none of these possibilities occurred. First, the floor of the structure did not exhibit evidence of post-abandonment refuse disposal. There are no clusters of functionally associated (implying concurrent use) artifacts in unexpected or “strange” places. Additionally, there are no clusters of functionally unassociated artifacts

(implying mixed refuse deposits) in the structure. Second, the fill of the basin above Structure 2 did not contain much cultural material. If the collapsed remains of Structure 2 were used as a refuse dump after abandonment we might expect more cultural material in the fill of the basin or on the floor. Lastly, the presence of complete and serviceable tools and vessels suggests no looting or material mining occurred prior to and after the structure collapsed. For whatever reason, be it total site abandonment or social taboo, Structure 2 appears to have been abandoned along with much of its contents, and was not disturbed until it collapsed into its house basin.

Structure 3 - Investigations

The 1969 excavation of the W360 trench also uncovered large amounts of fired daub and burned timbers between N320 and N303. Daub and burned timber deposits were not excavated within the W360 trench; instead the depth of the trench was raised to pass over them. No test unit was placed in this area during the 1970 field season. However, enough evidence suggesting the presence of a structure was uncovered to warrant investigation during the 1972 field season. Floors were excavated by hand in 2-ft squares. One sq. ft of floor deposit was removed from the center of each 2 ft square for flotation. The remaining 3 sq. ft of floor deposit was sifted through ¼ in. wire mesh. Piece-plotted materials were bagged with materials from the corresponding 2-ft square.

Structure 3 is located in a habitation zone on the south side of the plaza, approximately 100 ft (30.5 m) north of Structure 2. A shallow east-west trench was excavated in the area of the center daub deposit to help clarify the structure's spatial location and configuration. Overburden was then removed from an area measuring approximately 25 sq. ft (2.3 sq. m). This revealed deposits of daub, charred timbers, and charcoal measuring approximately 24 sq. ft (2.2 sq. m) and oriented approximately 44 degrees off north. These deposits were identified as representing collapsed superstructure and midden soil that had filled the basin formed by the depressed floor of Structure 3 and were assumed to mark the correct configuration of the structure.

All subsequent excavation was guided by the belief that Structure 3 was oriented at 44 degrees off north. Unfortunately it was not until most of the burden had been excavated that the excavator began to suspect that it might be differently oriented. Using the layout of the four roof support posts as a guide, the structure is now identified as being oriented with the cardinal directions (Figure 5.6). An absence of earlier construction in the area and failure to expand XU 5 sufficiently to allow a better view of the area's stratigraphic complexity all contributed to the misinterpretation. Partly because of the misplacement of the excavation unit and partly due to a lack of time at the end of the 1972 field season a portion of the north corner of Structure 3 was not excavated.

Structure 3 measures 21.8 ft (6.6 m) (E-W) by 20.4 ft (6.2 m) (N-S) and contained about 444 sq. ft (41.3 sq. m) of floor space. It represents the burned remains of the last of two or possibly four stages erected in the area excavated as XU 5. At least one and possibly two earlier stages are centered on Hearths 3 and 4 (in Hally 1980:301, Figure 78) just a few feet southwest of the hearth associated with the final stage of Structure 3 (Hearth 1). Lastly, a hearth remnant (Hearth 2 in Hally 1980) is located southeast of the final hearth. The floor associated with Hearth 2 (Floor B) was possibly destroyed when the final stage of Structure 3 was constructed (Floor A).

There is ample evidence to suggest that Structure 3 was destroyed by fire. This includes heavy daub deposits over large areas of the structure. Charred timbers and posts were encountered in areas of the structure that were covered with the fired daub deposits. It is possible that a previous stage or stages burned also as not all of the charred posts identified as belonging to Structure 3 in the final report are associated with the alignment proposed here.

Along the south and west walls of the new alignment there are complete rows of posts. They are straight for an average of 11.8 ft (3.6 m) before they begin to curve into the corners. The average distance between posts is 2.2 ft (.67 m). There are seven to eight posts in each wall. It is unclear how many posts were not recorded in the northeast corner. If the

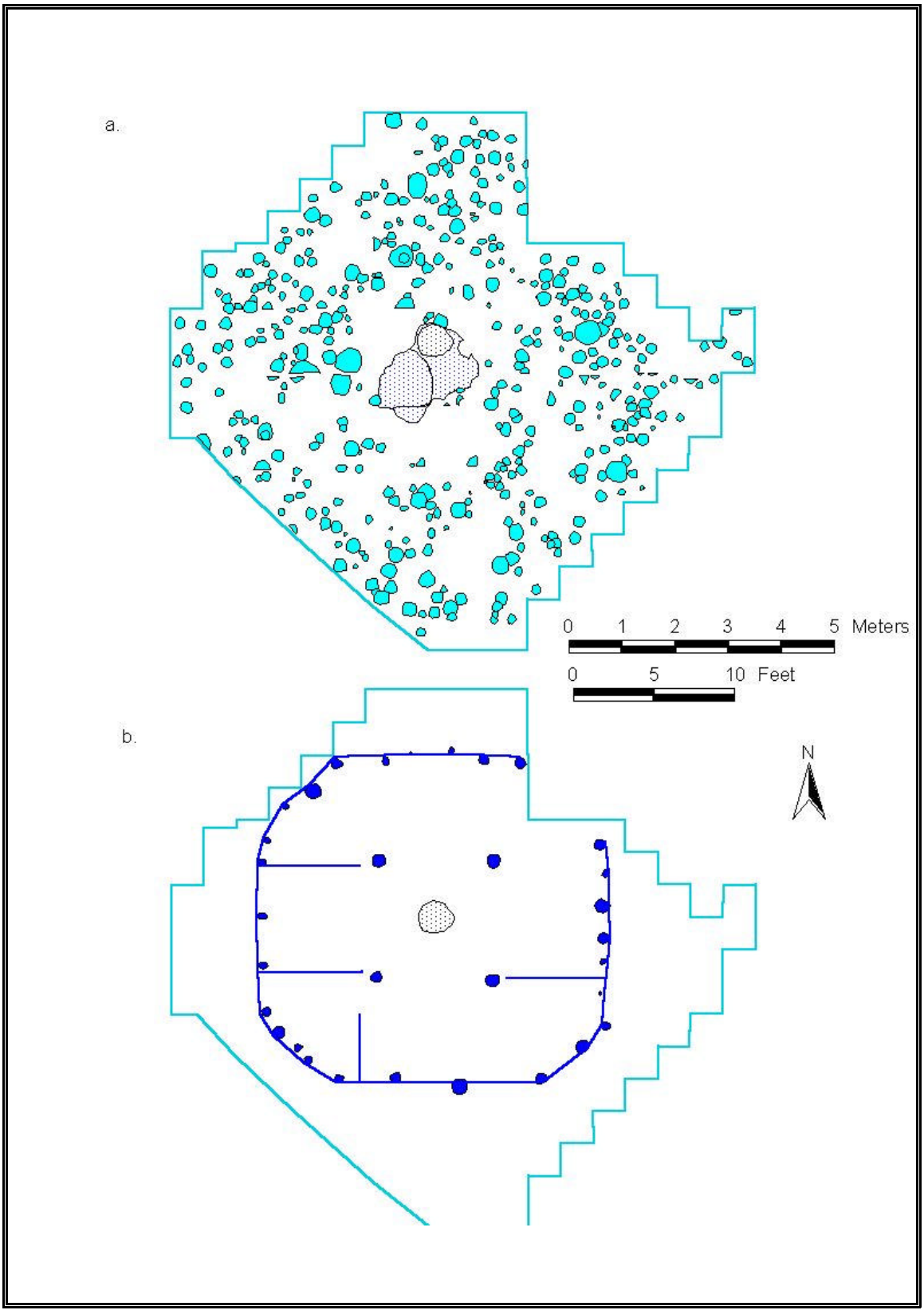


Figure 5.6 - a. XU 5, plan view of posts and hearths; b. Structure 3, posts, hearth, and proposed walls

spacing of these missing posts conforms to the pattern seen in the reconstructed post alignments the number of posts in each wall would equal eight, with possibly nine posts in the eastern wall.

Two interior partition walls extend from the south and west exterior walls to smaller posts placed near the center support posts. The locations of these partition walls have been determined through the analysis of piece-plotted artifacts and locations of postholes with charcoal or daub. Other partition walls are proposed based on distributions of artifacts, and therefore their placements are more tenuous. Whole and partial vessels are located along the north side of a proposed partition wall extending from the west wall to central post 1. Several grinding tools are located south of this wall. The placement of a partition wall separating the southeast corner from an area along the east exterior wall is based on the distribution of flakes along its southern edge, with a steep decline in the number of flakes north of the partition wall. Additional walls were likely present in Structure 3, but evidence of them is scant. As in Structure 2, the positioning of these partition walls is supported by the weight of evidence from other sites in eastern Tennessee and northwest Georgia.

A possible location for the entrance into Structure 3 is the southeast corner. No direct evidence like entrance trenches, baffles, or "dog-leg" partition walls were uncovered, however there are other lines of evidence to support this idea. First, as stated above, at the King site there is a tendency for entrances to be on the southern sides of structures. Second, a gap in the posthole alignments measuring 3.3 ft (1 m) is found in the southeast corner. Another similarly spaced gap is found in the south wall near the southeast corner.

An argument can also be made against the entrance being in the southeast corner. Feature 28 (discussed below), is located under this corner and extends from Floor A to a pit below Floor B. This feature is a dense concentration of chert debitage. If the entrance to this domestic structure was a low opening, possibly requiring people to stoop or crawl in order to pass through it, the many pieces of chert that would have undoubtedly been exposed on the surface posed a significant constant hazard. The largest concentration of flakes from

Feature 28 within Structure 3 occurs under the south wall (both inside and outside of the wall alignment; see below). Perhaps the entrance was located in the southeast corner, and the smaller concentrations of flakes recovered from those flotation squares are a reflection of efforts to remove the sharp flakes from underfoot.

The hearth and fired clay apron is enclosed by the four central posts. The average distance between central posts is 7.2 ft (2.2 m). The space enclosed by the central posts is 51.8 sq. ft (4.8 sq. m), approximately twelve percent of the total floor space.

Feature 28 is a large and dense concentration of primarily chert materials located under the southeast corner and to the south of the new alignment of Structure 3. The feature was first encountered in 1969 during trench excavations just south of the daub deposits capping the central floor area of Structure 3 (Hally 1980:312-314). The deposits were thought to only rest on Floor A (the last stage of Structure 3), but further excavation revealed that they extended to Floor B and deeper. The greatest concentration of materials at the Floor A level was found between N300 and N304 W632. This is outside of the revised alignment of Structure 3. The greatest concentration of materials at the Floor B level was found at N304 W630, which is located below the southeast corner of the last stage of Structure 3. Below this area was a pit that extended well into the sterile clay subsoil (.5 - .7 ft [15 - 21 cm]). This pit also contained chert debris, but not in the amounts recovered in and above Floor B, and Barnett pottery. The pit may be from an earlier structure stage.

Hally's (1980) interpretation of this feature is that it represents a flint-working area that was used in each successive stage of the structure. Slight shifts in the orientation of each structure caused the feature to become larger and quite thick. The pattern of the flint-working area occurring against the south wall of each stage supports the idea of continuity of the household constructing and inhabiting the structures.

Hally (1980) notes the unusual .5 ft-thick (15 cm) mound of lithic debris found on Floor B, and questions why it was not removed (with other Floor B deposits) when Floor A was constructed. The realignment of Structure 3 may answer this question. When Floor A

was constructed, it is possible that materials from Floor B were redeposited to the south, in the vicinity of N300 W632, to fill in the basin of the previous structure stage.

Structure 3 - Nature and Size of Sample

As with Structure 1, Structure 3 was destroyed by fire. Here too we can expect to find carbonized organic remains that would otherwise have decayed naturally. Botanical remains have been analyzed to identify the season in which Structure 3 burned (Hally 1981). By comparing when certain parts of plants are available to the species recovered in flotation samples from Structure 3, Hally posits that the structure burned in mid-July to mid-September.

A Temporal Consideration for Structure 3

A variety of European artifacts dating to the early eighteenth century were recovered from the floor of Structure 3. These include glass beads, at least one axe head, and a glass bottle fragment. Five or six partial vessels were also recovered from the floor that are probably also early eighteenth century (Smith 1992). Two rim forms ("L"-shaped and notched filleted strip) present on four of the vessel fragments resemble forms identified as early eighteenth century on Cherokee sites in the upper Savannah River drainage (Hally 1986a; Smith et al 1988). Another partial vessel (a squat jar with cane punctations) also resembles an early eighteenth century Overhill Cherokee vessel form. This material does not agree with the other evidence from the structure.

First, the pottery sherd collection from flotation and sifted lots is identical to the floor samples of Structures 1 and 2 in terms of type frequencies. Unfortunately these samples could not be wholly relocated for comparison to Structures 1 and 2, as the entire collection has been re-boxed. Hally (personal communication) says that he saw no qualitative differences in 1981.

Second, the architecture of Structure 3 is identical to that of Structures 1 and 2, and other sixteenth century structures excavated at the King and Leake sites, among others. It seems very unlikely that so little change in ceramics and architecture would occur in the 125 or more years after European contact.

It becomes necessary to address the question of how these late vessel fragments and European artifacts came to be on the floor of Structure 3. Stratum 2 was the basin fill above the daub and floor deposits. This fill contained mainly Barnett phase ceramic types, however there are a few examples of late-looking notched filleted strip rims. This suggests at least some of the basin fill accumulated in the early eighteenth century. The axe, bottle fragment, and one partial vessel were all found together just south of the southeast interior support post. A large grinding stone was also in this area, found lying at an angle suggesting it was not lying flat on the floor surface. All of these artifacts could have been in a pit that intruded into the structure.

Glass beads are distributed across the floor area. It is likely that they originated in Stratum 2 and worked their way down through the Stratum 3 daub layer as it was quickly removed during excavation. The largest concentrations of beads appear to be outside of the area covered by the collapsed roof daub but inside the basin for the structure (Figure 5.7). Excavation units in the central floor area have few historic beads (n=0 or 1 per square).

All of the stages of Structure 3 were presumably in use over a span of only a few decades at most. Hearths were built over previous hearths in two episodes of rebuilding, and the structure was probably only reoriented one time. If the last stage of Structure 3 did date to the eighteenth century we should expect some historic artifacts from the basin remnants of the earlier stages. Beads and other historic artifacts are only found in the basin of the last stage of Structure 3, suggesting only this basin and the collapsed remains of the structure were still open for trash dumping in the eighteenth century.

The remaining vessels are more difficult to explain. They were distributed over a large area just west of the two interior roof support posts. Presumably this area was covered by daub (Hally 1980:311). It is unlikely that Hally would not have noticed that these vessels were above this daub layer.

Hally (1980:331) notes that fragments of one vessel dating to the Little Egypt component of the site were found in Stratum 2, west of the Stratum 3 daub layer, and in sifted

floor lots. This vessel demonstrates that sherds (and presumably other materials) did move from Stratum 2 to the floor of Structure 3. For all of these reasons, Hally's estimation of an approximately 50 year lapse between the occupations of Structures 1 and 3 is likely still accurate.

Burials and Households at Little Egypt

Burials are found in a variety of contexts on Mississippian sites, including funerary mounds, public buildings, clustered in village areas, and under the floors of domestic structures. As seen from the sample at Little Egypt, however, not every domestic structure contains burials. The presence or absence of burials from Little Egypt structures can be explained in several ways.

First, burials of individuals of presumed higher status have been excavated from mounds and other mortuary contexts on Mississippian sites (Hally 1988, 1994; Milner 1984; Pauketat 1994; Polhemus 1987, 1990). Structure 1 at Little Egypt is associated with a presumed high-status household (this is discussed further in the concluding chapter). No burials or probable burial pits were discovered in Structure1. If any household members from Structure 1 died during the use-life of the structure, it is possible that the higher status individuals were buried elsewhere, perhaps in the mound.

Second, individuals were sometimes buried outside of domestic structures. The absence of male burials from Structure 2 (discussed below) suggests that a public mortuary area or public building may have been the preferred internment area for adult males at Little Egypt. This pattern is present at the King (Hally 1988) and Toqua sites (Polhemus 1990). Other locations of burials at the King site include around and under summer structures, and in clusters adjacent to household units. Burials associated with Structure 3 may be outside the winter domestic structure, within the boundaries of the household unit.

Third, research at the King site suggests that there was a preference for individuals to be buried in the residence of the founding household where several households in multiple structures were part of a household unit (David Hally, personal communication). This may

be the reason why no burials were found within Structure 3. As is discussed above, due to the limited excavations around each structure at Little Egypt none were excavated as part of a household unit. However, it is likely that Structures 2 and 3 were part of multi-structure household units. Both Structures 2 and 3 were rebuilt several times, presumably as their household grew, or when fires or decay destroyed an earlier stage of the structures. It is possible that Structure 2 was the founding household of the unit, while Structure 3 may have been the residence of a "daughter" household. When members of Structure 2 or 3 households died they may have been buried in the residences of each household unit founder.

Interring burials at the residence of a founding household is possibly not without precedent in the archaeological record. In an examination of the Classic period (A.D. 300 – 900) settlement at Tikal, Guatemala, William Haviland (1965) suggests that domestic buildings arranged around a central courtyard housed married couples of two or more generations living near a senior or founding household. He notes that this is analogous to modern Maya practices. Further, if a family temple was not associated with the prehistoric household unit, a greater number of burials (and often some of the richest) were placed in or near the senior household structure. This suggests that burials of second-generation households were interred in the senior residence. The absence or fewer numbers of burials at the second-generation household structures is also evidence for this. If the founding household had more members (explaining the greater number of burials found there), and all household members were buried in their own residence, we would expect to find a relatively equal number of burials in all of the household structures.

Burials sometimes include a range of artifacts that may indicate the status, age, and gender of the interred individual (Eastman 2001; Rodning 2001; Sullivan 2001). Burial goods from the individuals interred in Structure 2 at Little Egypt are few, and include only a shell bead necklace and a small Dallas incised pot from Burial 18, and a rattlesnake gorget and a few small shell disc beads from Burial 29. Both of these individuals were children.

Eastman (2001) finds that circular shell gorgets are found in females' and children's burials in late prehistoric Siouan communities of Piedmont North Carolina and southern Virginia. She suggests that this is perhaps due to a symbolic relationship between shell and women's roles in reproduction. However, Smith (1987) and Hally (1994) suggest that rattlesnake shell gorgets ("Citico" gorgets) are markers of leadership in paramount chiefdoms in the southern Appalachian region. Rodning (2001) suggests that shell artifacts in burials are an indication of who had access to trade goods. Perhaps the child in Structure 2 at Little Egypt was closely related to someone with greater access to trade materials like marine shell or someone of some importance in the chiefdom.

In the Siouan sample analyzed by Eastman (2001) shell disc beads are associated with burials of females and children, while beads from columella and marginella shell are evenly distributed across age and sex. Rodning (2001) suggests shell artifacts in various forms are more commonly associated with subadult burials in the southern Appalachian region. Both of these findings are consistent with the evidence from Structure 2, although the minute sample size should be emphasized. Ceramic pots are only found in female burials in the Siouan sample (Eastman 2001), but this pattern may not apply to Little Egypt. Hally (1979) excavated an adult male in an occupation zone immediately south of Mound B that contained six vessels.

Perhaps more culturally relevant to Little Egypt are findings at the King site (David Hally, personal communication). In an analysis of grave goods recovered from 227 burials Hally finds artifacts associated with sub-adult burials (particularly children under eight years old) are items of personal adornment, including shell beads and gorgets, and commonly vessels.

Not all prehistoric interments contain artifacts. Rodning's (2001) summary of burials from Coweta Creek shows approximately 34 percent of the interments (n=79 single burials) contained artifacts. Of 131 burials in Eastman's (2001) Siouan sample, approximately 49 percent had grave goods. Lastly, 227 burials were excavated at the King site, of which only

40 percent contained grave goods (David Hally, personal communication). The very limited sample from Structure 2 at Little Egypt conforms to Hally's findings. Larger samples of burials from Little Egypt are required before any analysis beyond description can be conducted.

Burials in Structure 2

Five of seven burials excavated in XU 4 appear to be associated with the occupation of Structure 2 (Figure 5.8). Burial 18 is located to the west of the hearth and contained the remains of a sub-adult, 7 to 12 years in age. The body was oriented with the head to the south, facing east, and was semi-flexed. The individual was accompanied by a shell bead necklace and a small Dallas incised jar. Burial 18a was interred after Burial 18 and contains only the mandible of a child (infant to 6-year-old). This bone was found in the southern end of the pit, and may indicate that the individual was oriented in a similar fashion as Burial 18.

Burial 22 is also located west of the hearth, though closer to the exterior wall than both Burials 18 and 18a. The pit and body are oriented parallel to the exterior wall. The body was placed on its right side, head to the northeast, facing south. The individual is of indeterminate sex and was between 13 to 17 years of age at time of death. No artifacts were recovered with this burial. Burial 26 is located at the edge of the northeast compartment and central hearth area. It consisted only of a few cranial fragments, all of which were lost prior to analysis. No artifacts were recovered with this burial. The last burial associated with Structure 2 is Burial 29. This burial pit is immediately northeast of the hearth and slightly undercuts it. An intrusive pit excavated into this burial pit contained half a Dallas incised jar, the other half of which was recovered in the fill of Burial 18. This would indicate that Burial 29 preceded Burial 18. The pit is oriented northwest/southeast, but the body was too fragmentary to determine on which side and to which direction the body was facing. The pit contained the remains of an infant less than 6 years old, along with a rattlesnake gorget and several small shell disc beads. Deer bones were also recovered from the pit fill.

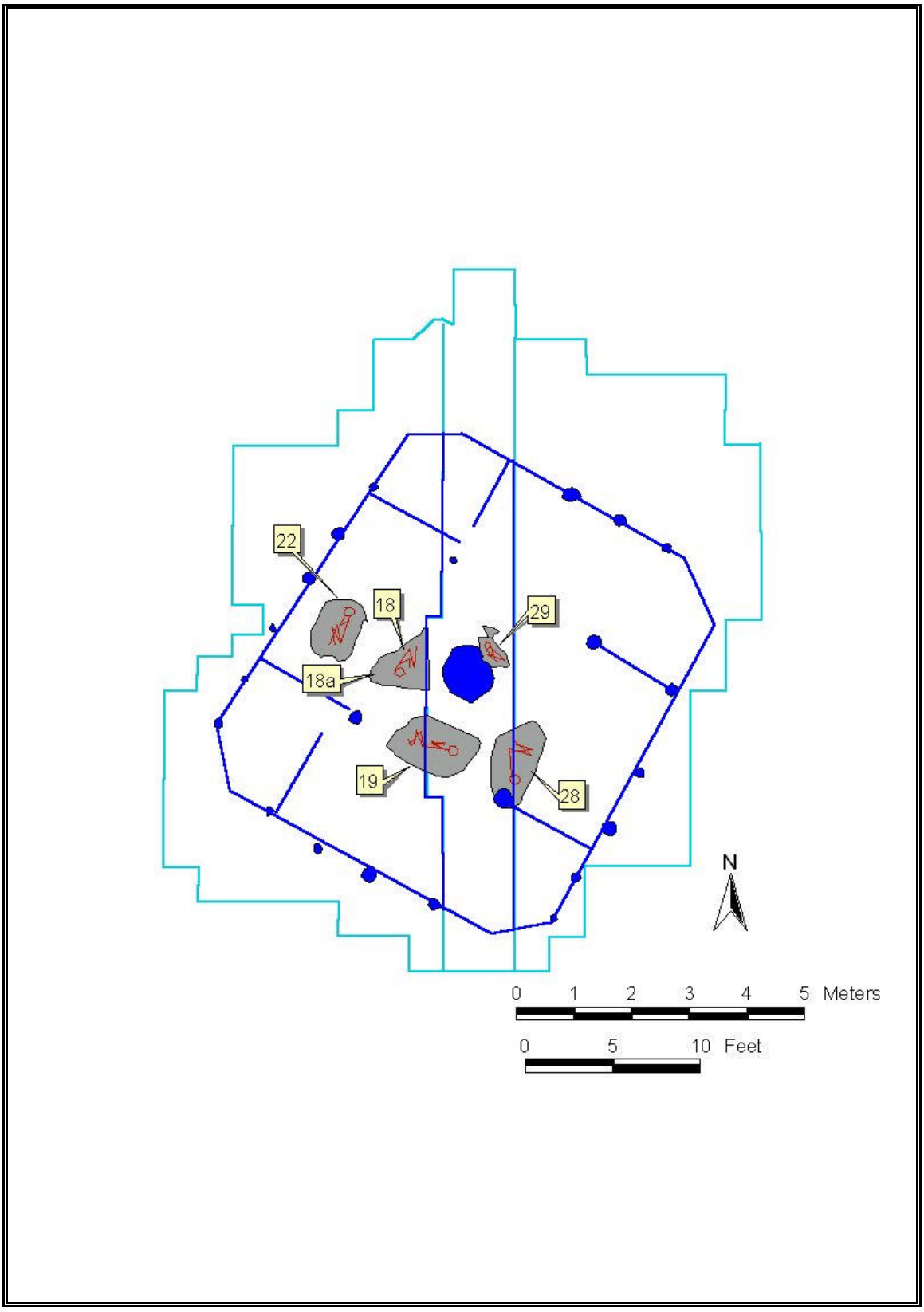


Figure 5.8 - Structure 2, burials

The remaining two burials from XU 4 were likely not associated with the final stage of Structure 2. Burial 19 is located approximately 60 cm (2 ft) south of the hearth, but is under the fired hearth aprons of the last two stages of the structure. While a hearth apron could be reestablished over a burial if the structure continued to be occupied, the location of the pit below two hearth aprons suggests Burial 19 is associated with an earlier stage.

Burial 28 is located over 60 cm (2 ft) southeast of the hearth and is oriented slightly east of north. This orientation does not follow the orientation of the structure exactly. Two postholes were mapped within the boundaries of the burial pit. These two posts were not part of the final stage of Structure 2, suggesting that Burial 28 dates to an earlier stage.

Summary of Site Formation Processes

Site formation processes are taken into account during every phase of analysis. Archaeological investigations examine items brought from the depositional context into the archaeological context in order to understand the systemic context (Asher 1968; Schiffer 1972, 1976; Sullivan 1978). It is understood that there is a loss of information as materials move through each context. It is extremely important then to also discuss the processes that act on materials in each context and how materials moved from one context to the next.

Working back through time from the archaeological to the systemic, we see site formation processes that have impacted the materials collected for this study. A certain amount of information has been lost in the archaeological context. For instance, materials were stored in acid-based paper bags, vials, and other containers (standard practice at the time the materials were excavated). Recently, a cultural resource management firm was contracted by the Corps of Engineers to stabilize the collections (Huddleston 1998, 1999). This was accomplished by re-bagging all materials in acid-free bags and boxes. Whole and partial vessels were placed in boxes filled with ethafoam, a loose, acid-free packing material. Both the original curation practices and the stabilization efforts have resulted in damage, alteration, or loss of materials. For example, organic and carbonized remains may not be datable using

current C-14 or AMS techniques due to the acid-content of the original packing materials. Also, a number of reconstructed vessels have been re-broken, sometimes at previous mends but also elsewhere across once-complete sherds. It is not known when or how these vessels were damaged. The assemblage has been the subject of several studies over the past few decades (Conner 1985; Gougeon 2000; Hally 1980, 1983a, 1983b, 1984, 1986b; Pennington 1977; Schneider 1972; Smith 1975). Removal and replacement of vessels from storage containers is a likely culprit of the breakage.

Additional materials have been lost since excavation. A study of projectile points was conducted by Donald Graybill as part of a University of Georgia graduate seminar in the late 1970s. PP/K from Little Egypt were borrowed from Dr. Hally. During or following the seminar the provenience information beyond specific structure was lost. For this reason more in-depth analysis of pp/k from Structure 3 was not possible for this dissertation. It is not known if the results of the study are still available.

Information was also lost in the transition from the depositional to the archaeological context. A review of excavation techniques and procedures reveals that the following actions likely caused some loss of data (Hally 1980). First, trenching of the site removed floor deposits from certain areas of Structure 2. Second, not all classes of artifacts were piece-plotted across all structure floors. While all artifacts were ultimately recovered in screening, the use of piece-plotted data to look for clusters of artifacts is tenuous for some structures and impossible for others. For this reason piece-plotted items were not the sole source of information used to identify activity areas. Lastly, some loss of floor deposits occurred where the floor was difficult to discern from the surrounding matrix. This may have resulted in portions of the floor being left behind, or in portions of earlier and later deposits being included in the floor samples. This is particularly problematic for Structure 3, as previously noted.

Site formation processes acting in the depositional contexts include damage from agricultural practices (primarily plowing), flooding, erosion, and decomposition of organic materials.

Some of the most important site formation processes that had a direct impact on the quantity and quality of the materials recovered for this study occurred at the transition from the systemic context to the depositional context. As discussed above, Structures 1 and 3 were destroyed by fire. Evidence suggests these two events were totally unforeseen, as many serviceable or complete tools and vessels were recovered from the structure floors. Eric Poplin (1990) recovered very little material from Structure 2 at 9DO45, and suggests the structure was cleaned and the burning was planned.

Structure 2 at Little Egypt was abandoned, also likely quickly and unforeseen, and stood for an unknown period of time before collapsing. Both of these processes (the burning of the structures and the rapid abandonment of a third) affected, for example, whether organic materials were preserved, and can also be used to explain how other items were broken or distributed on structure floors (ex. falling roof timbers breaking and scattering vessel fragments). Many of these processes are described in Chapters 9 and 10 (Results and Discussion).

Previous Studies of Activity Areas at Little Egypt

In this section the results of previous studies of Little Egypt structures and households are summarized. David Hally (1980) conducted intuitive activity area analyses on Structures 1, 2, and 3 as part of the original report of excavations. In his analysis Hally attempted to identify areas of the structures where particular activities occurred. This was accomplished by visually inspecting where clusters of artifacts overlapped. Hally also attempted to identify the gender of the user(s) of some of the activity areas, though most of these appear to be based on the commonly held notions of the time that women cooked and men made tools. Some specific challenges to these assumptions are presented in the concluding chapter.

Kent Schneider (1972) analyzed materials from Structure 1 using micro-sampling techniques. While the focus of his dissertation is on the applicability of the micro-sampling technique and equipment, he did attempt to interpret the findings as they pertained to activity areas within the structure. Furthermore, Schneider used the results of botanical analyses to estimate the season of occupation at the time of the structure's immolation. The results of Schneider's analyses are summarized below.

Marvin Smith (1975) conducted an analysis of activity areas for Structure 2 using a clustering statistic program and intuitive pattern recognition techniques. The clustering program (Q-mode CLUST3 program) measured the similarity of artifact assemblages recovered from each 2-ft square excavation unit. It was hoped that units with similar artifact assemblages would also be located near each other, but this was not the case. Smith's study demonstrated that this particular clustering program is not well-suited for this data set. The results of his visual inspection of artifact distributions are summarized below.

Hally's Findings – Structure 1

Hally identified three concentrations of artifacts that he thought represented likely activity areas in Structure 1 (Hally 1980:191-197) (Figure 5.9). Concentration 1 encompasses a large area along the northeast side of the structure, primarily situated around the northern central support post. Concentration 2 is located to the west of the western central support post and is the smallest of the three activity areas identified in Structure 1. Concentration 3 is located near the southern central support post, extending towards the southwest wall. Hally also posits that sleeping benches were likely located along the southeastern and northwestern walls.

All three concentrations contain a variety of artifact types. Concentration 1 has the most artifact classes, most of which were recovered in the greatest quantities of any area in the structure. Sherds, one whole and one partial vessel, lithic debitage, flaked stone and non-

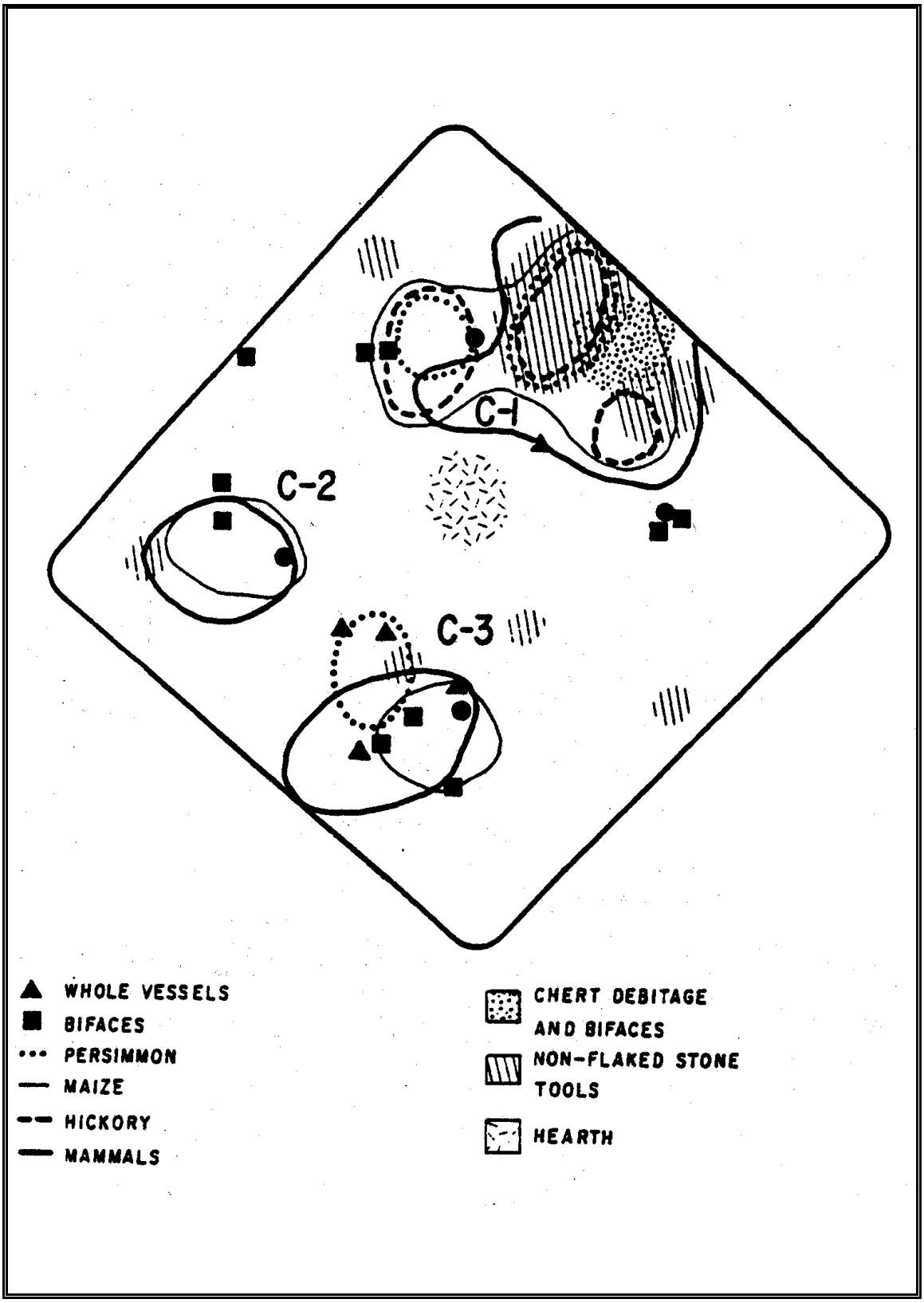


Figure 5.9 - Hally's artifact concentrations, Structure 1 (after Hally 1980)

flaked stone tools, and botanical and faunal remains were all recovered in this area. Hally (1980:196) notes that this area appears to have been the location of "multiple and spatially distinct" activity areas, as evidenced by the presence of artifacts related to food preparation activities in the northeast portion of the concentration, and flaked stone tool production in the southeast portion. Hally proposes that Concentration 1 was an eating and work area. The southeast portion of this activity area was a male area, and the northeast portion was a female area.

Concentration 2 contains sherds, three partial vessels, two flaked stone tools and one non-flaked stone tool, and botanical and faunal remains. Hally proposes that Concentration 2 was a butchering and meat storage area. It is possible that maize kernels were stored nearby, as evidenced by the large number of kernels recovered from the area. No gender was assigned by Hally to this concentration.

Concentration 3 contains sherds, four whole and two partial vessels, one non-flaked and three flaked stone tools, cut and ground slate, magnetite and graphite, botanical remains, and faunal remains, including several deer skulls with the antlers removed. Hally proposes that this area was used for the preparation and storage of plant foods. The presence of the deer skulls and pigments proved somewhat puzzling, and Hally suggests that other activities not related to food production may also have occurred in this area. Again, no gender was assigned by Hally to this concentration.

Schneider's Findings – Structure 1

Schneider (1972:146-147) identified five concentrations of artifacts and "empty" areas he thought represented likely activity areas in Structure 1. These areas are only generally described, and include an area north of the hearth, south of the hearth, and the west, northwest, and southeast portions of the structure.

The area north of the hearth is interpreted as a food preparation area. The area contains all of the classes of materials (ceramics, lithics, fauna, and flora), including cooking pots, lithic tools, and seeds and corn kernels. To the south of the hearth is a seed storage area,

as evidenced by the association of corn, persimmon, and honey locust seeds with whole and partial vessels. The west portion of the structure is interpreted to have been a food consumption area, as evidenced by the presence of corn cobs and several species of seeds. Negative evidence in the northwest portion of the structure lead Schneider to suggest it was used for sleeping. The southeast portion of the structure contained a large amount of charred wood and small quantities of seeds and plant parts. Schneider suggests socializing activities occurred here. Based on the types and quantities of plant foods recovered using micro-sampling techniques, Schneider suggests the structure burned in the fall of the year.

It should be emphasized that Schneider's primary purpose for his study was to examine the usefulness of a method of recovering micro-samples from housefloors. His analysis of the actual structuring of activities within the structures is incomplete, as not every class of artifact was available at the time.

Hally's Findings – Structure 2

Hally (1980:283-293) identified four concentrations of artifacts that he thought represented likely activity areas in Structure 2 (Figure 5.10). Concentration 1 is located along the center of the southeast wall. Concentration 2 is located to the southeast of the eastern central support post, just to the north of the Concentration 1. Concentration 3 is located to the northwest of the western central support post. Concentration 4 is found to the southwest of the western central support post. Hally also suggests that sleeping benches were located along the northeast wall and the north and south corners. Unlike Structure 1, Hally found that most of the partial and whole vessels, in addition to clusters of non-flaked stone tools seem to be located adjacent to his proposed activity areas (particularly around Concentrations 3 and 4), and not within them. He interprets these groups of vessels as being evidence of storage areas adjacent to work areas (Hally 1980:290-291).

Concentration 1 contains sherds, one whole and one partial vessel, lithic debitage, flaked and non-flaked stone tools, botanical materials, and faunal remains, including antler tines. Concentration 2 contains three partial vessels, non-flaked stone tools, and botanical

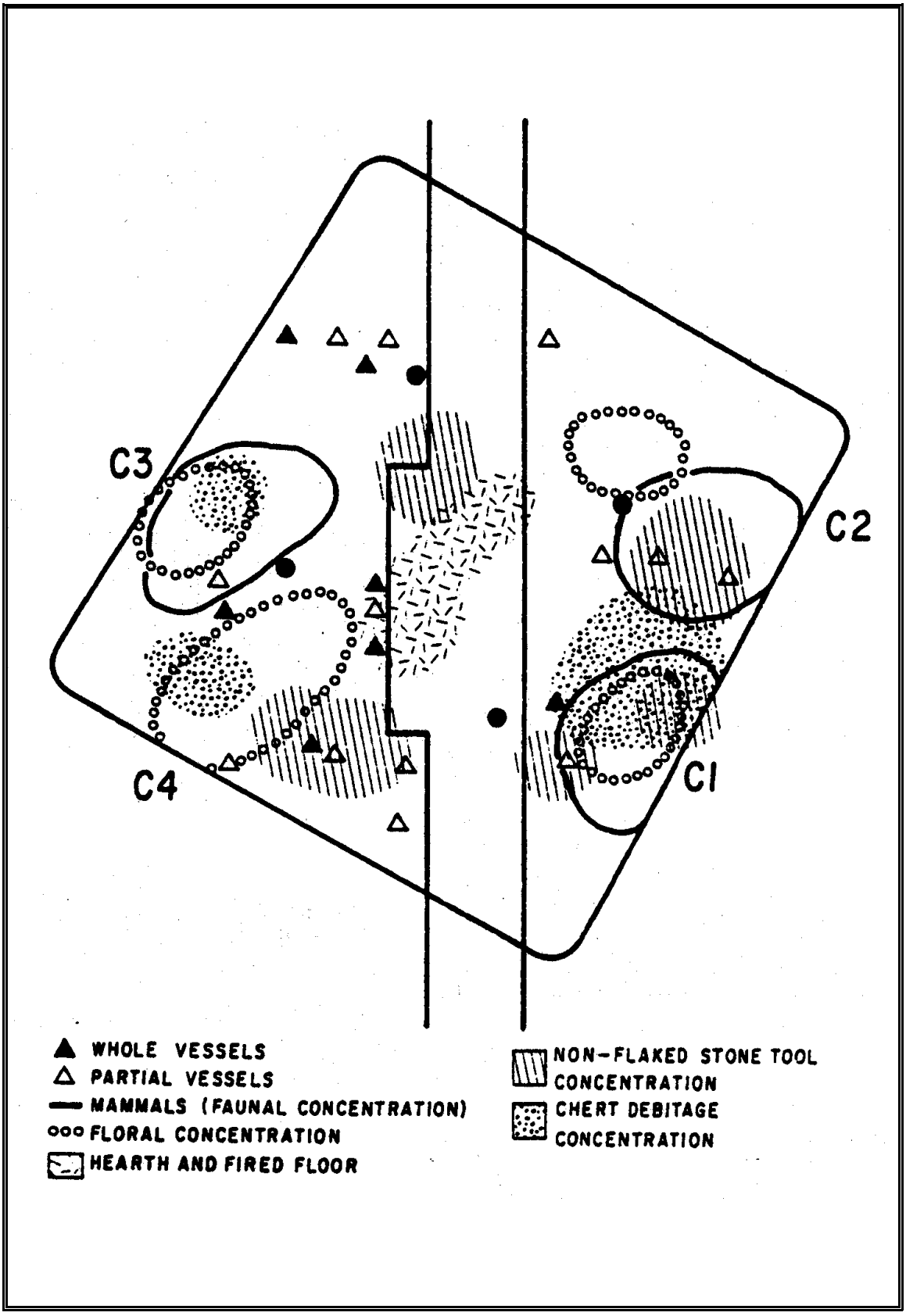


Figure 5.10 - Hally's artifact concentrations, Structure 2 (after Hally 1980)

and faunal materials. Hally interprets both of these areas as work and eating areas, based mostly on the presence of nearly every class of botanical and faunal materials. However, because of the flaked stone tools and debitage in Concentration 1, Hally identifies the area as a male working and eating area. Concentration 2 contains more artifacts related to food production, and therefore Hally identifies it as a female working and eating area.

Concentration 3 contains sherds, lithic debitage, flaked and non-flaked stone tools, and botanical and faunal materials. Hally interprets this concentration as a meat preparation and storage area. Charred nutshell and maize kernels, in addition to a beaver incisor and shale, could not be accounted for in this interpretation and may be related to some other activity that occurred in this area. No gender was assigned by Hally to this concentration.

Concentration 4 contains lithic debitage, limestone fragments, non-flaked stone tools, and botanical materials. Hally interprets this concentration as a food processing and storage area. No gender was assigned by Hally to this concentration.

Smith's Findings – Structure 2

Smith (1975:74-81) identified five broad areas that he thought represented likely activity areas in Structure 2 (Figure 5.11). Generally, the areas are described as follows: a sleeping area along the northwest wall and north corner, an equally large storage area extending from the west corner to the south corner, a small flaked stone tool production area in the south half of the southeast wall, and a food preparation and eating area that encompasses the remainder of the structure, including the central hearth area. The flaked stone tool production area was identified from the mass of lithic debitage recovered in the area. Smith interpreted the northwest side of the structure as a sleeping area based on the lack of artifacts recovered from excavation units in this area. The food storage area was identified by the large numbers of whole and partial vessels located in the area. Broken pottery and botanical and faunal remains were used to identify the food preparation and eating area.

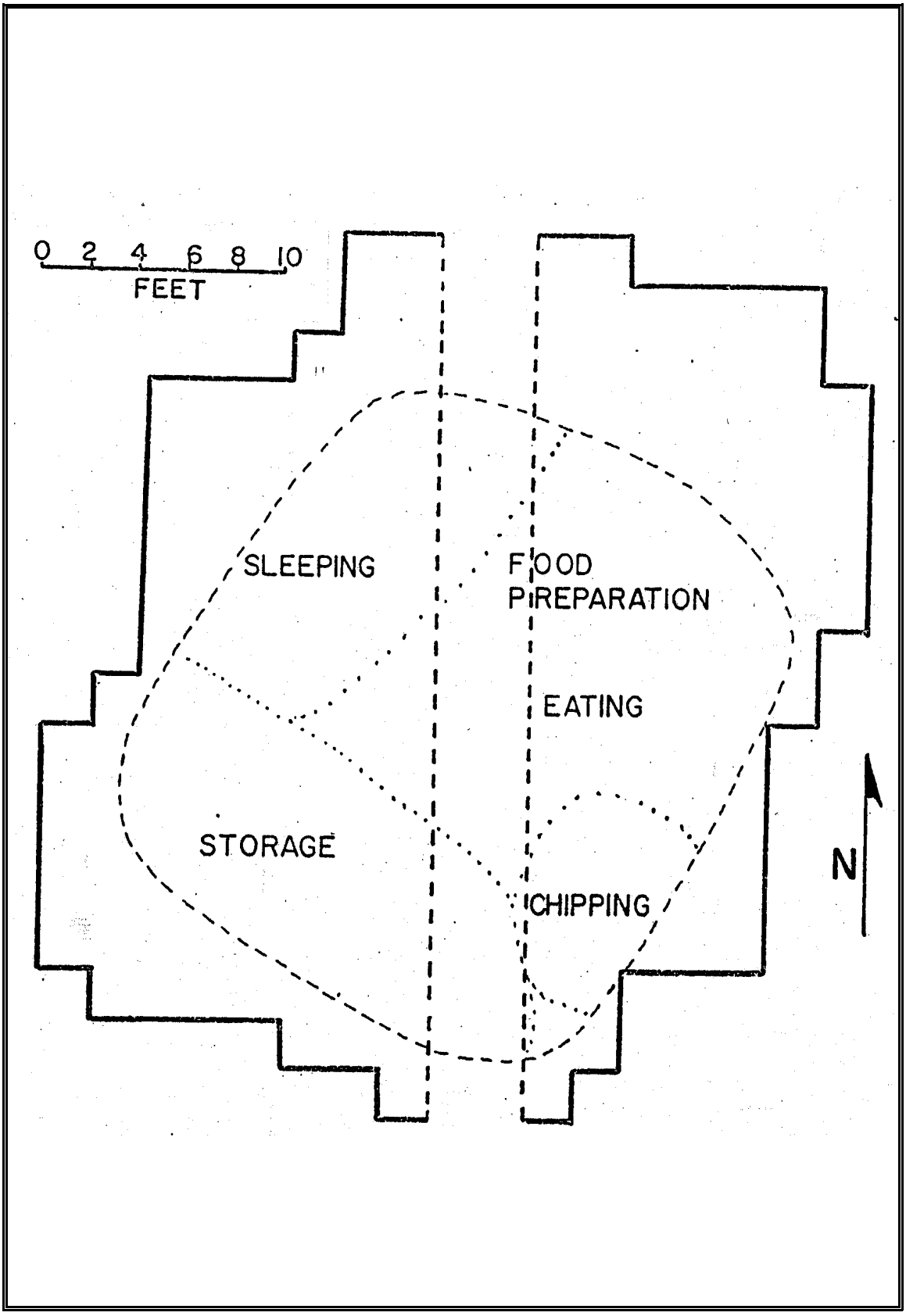


Figure 5.11 - Smith's artifact concentrations, Structure 2 (after Smith 1975)

Hally's Findings – Structure 3

Hally (1980:283-293) identified approximately nine concentrations of artifacts that he thought represented likely activity areas in Structure 3. These include three eating areas, a plant food preparation and storage area, a meat processing and storage area, a flaked stone tool production area, a phyllite pipe production area, and two areas of glass beads that overlap with other areas and may be affiliated with some unknown activity. Hally also suggests that sleeping benches were located along the northeast and northwest walls. As is discussed in Chapter 5, the orientation of this structure was misinterpreted in the field and during analysis, making these activity areas inaccurate, if not completely incorrect.

Summary of Previous Studies

Previous interpretations of activity areas within Little Egypt domestic structures have been conducted by Hally (1980), Schneider (1972), and Smith (1975) with varying degrees of success. All three utilized some degree of intuitive pattern recognition techniques. Schneider utilized micro-sampling to obtain artifacts from floor midden. He then visually inspected the distributions of the micro-samples for areas where different classes of artifacts overlapped. Smith utilized a clustering statistic that grouped excavation units by degrees of similarity of artifact assemblages, but this statistic did not account for geographic proximity. Smith instead relied on intuitive interpretations of likely activity areas. Hally similarly used intuitive pattern recognition techniques, primarily involving overlapping classes of artifacts the reflect particular past activities.

Common to all three studies is the idea that activity areas are marked by the presence of multiple artifact classes that would have been used in concert to complete a given activity. One weakness of these studies is the limitation each placed on their activity areas. Like Hally, Smith had difficulty interpreting artifacts not related to the primary activity he identified with the areas. For example, lithic debitage and some stone tools were recovered from the area Smith (1975:76) identifies as a food storage area. He speculates that the proximity to the central hearth is more significant than the proximity to the storage area for these artifacts. In

short, activity areas are limited to a single activity (e.g. food preparation or lithic production, but not both in a single area). I suggest that areas served as the locus of more than one activity, and should be thought of as the locus of a single individual's activities (or several individuals of the same gender acting in concert). This accounts for artifacts that do not readily fit into single activity interpretations. This idea of multiple activities occurring within a single loci is addressed in the discussion of my interpretations of the activity areas in the concluding chapter.

CHAPTER 6 – METHODOLOGICAL AND THEORETICAL CONSIDERATIONS

In this chapter some of the particular methodological and theoretical underpinnings of this dissertation are considered. This research combines statistical and computer-based analytical techniques with more intuitive methods anchored in spatial analysis and gender studies. I discuss methods of activity area analysis and recent explorations of gender in anthropological and archaeological research. Additionally, I review the geographic information system and statistical approaches to spatial analysis used in this dissertation.

Spatial Analyses

The analysis of activity areas is an integral part of household studies. As households are comprised of activity groups (see Chapter 2), it follows then that archaeologists excavate the remains of their activities and where they took place. An activity area as utilized in this dissertation is defined as "the locus at which a particular human event occurred" (Kent 1987:1; see also Carr 1991). The analysis of activity areas can contribute to studies of household production, consumption, craft specialization, and the gender division of activities and space, to name but a few.

The study of activity areas is based on the assumption that human behavior is patterned (Kent 1987:3). However, this is not to say that people's behaviors are patterned in some kind of normative or deterministic way (Kent 1987). Rather, as culture shapes behavior and culture is patterned, so too then human behavior is patterned. In general, human behavior is marked by certain regularities, from the methods used to complete tasks to the areas in which the tasks are performed, some of which have the potential to leave traces in the archaeological record.

Traditionally, archaeologists largely employ intuitive visual techniques as a means of conducting spatial analyses on archaeological data sets (Kintigh and Ammerman 1982). These techniques rely on the ability of the human brain to recognize patterns in what are often large and complex data sets. Archaeologists continue to utilize intuitive visual inspections, though it is now common to apply some data-reducing technique to simplify the data (Blankholm 1991), or exploratory data analyses (Carr 1991; Tukey 1977).

Kintigh and Ammerman (1982) note that archaeologists first began seriously seeking quantitative techniques (as opposed to intuitive ones) in the 1970s. Generally, archaeologists borrowed from other disciplines (ex. geography, ecology) and attempted to fit their data into models not developed with their specific needs in mind. Since the late 1970s a number of statistical techniques have been proposed as solutions to particular archaeological problems. However, as Blankholm (1991) has observed, archaeologists are slow to adopt and develop quantitative techniques. This is due in part to a general ignorance of statistics in the humanities, and the inappropriateness or short-comings of the earliest techniques. Another of Blankholm's concerns, the incompatibility and accessibility of necessary software, is likely no longer an issue for most Western archaeologists.

Statistical Analyses

The use of k-means analysis to determine clusters of artifacts across a given space has been used by archaeologists since the early 1970s (Blankholm 1991; Gregg et al 1991; Kintigh and Ammerman 1982; Rigaud and Simek 1991). This analysis uses the k-means statistic to determine clusters of artifacts. The statistic is applied to coordinate-based data (as opposed to grid-based). A recent example of the use of k-means analysis in archaeological research is Polhemus' (1998) dissertation on the Loy site. Polhemus used k-means cluster analysis to first propose possible clusters of related artifacts before using more intuitive methods to interpret the statistically determined clusters.

Blankholm (1991) has conducted a thorough examination of many quantitative techniques used in spatial analyses. He notes that while k-means analysis is a very powerful

means of determining clusters of artifacts, the method does have some problems. First, the technique works on coordinate-based data. Before using grid-based data, one must first apply a smoothing or other data-conversion function. In some cases, data that is not first smoothed can return results that reflect small-scale irregularities as strongly positive clusters (Gregg et al 1991:158). Second, k-means analysis uses a root mean squared radius to circumscribe the clusters of artifacts, which has a tendency to create circular clusters. Third, this analysis cannot identify overlapping clusters. In close quarters (e.g. cave sites, rock shelters, small structures) people working in close-proximity will undoubtedly have some mixing of materials. This may be masked by the k-means statistic by lumping the separate areas into one cluster. Fourth, k-means analysis cannot determine the spatial association of different artifact classes. The analysis treats each artifact as equal, measuring its spatial association with other artifacts by coordinates alone.

Another critique of k-means analysis is that it requires the user to set the number of clusters to be solved by the program. Rather than arbitrarily trying any number of clusters and looking for one that is the most significant (an abuse of statistics to be sure), some variation of a sum-squared-error (SSE) statistic is used to measure within-cluster variation (Gregg et al 1991:153-155). An independent method involves examining log plots of the complete input data and random samples of the input data. Significant clustering is suggested where the normal data diverges strongly from the sampled data. The stage(s) at which the normal diverges from the sampled data is then used in the k-means analysis. If the normal data does not diverge from the sampled data there is likely no significant clustering.

I have chosen to utilize a statistical test to first explore the data for relationships I might have overlooked before moving to more intuitive pattern-recognition techniques. First, I conducted a Pearson's r test for correlations between the distributions of artifact classes. This test returns a correlation coefficient, a measure of the strength of an association between two variables (Burt and Barber 1996:383-384). This test was conducted for every square within a single structure simultaneously. That is to say, I did not make an attempt to analyze

only those squares found in particular areas of each structure separately from every other area.

Second, I calculated the coefficient of determination (r^2) for artifact classes with strongly correlated distributions (generally r > .6). The coefficient of determination is the proportion of the sum of squares of deviations of the *y* values about their mean that can be attributed to a linear relationship between *x* and *y* (McClave and Dietrich 1985). The coefficient of determination can be thought of as the percent of variation in *y* that can be explained by *x*.

After examining the results of the Pearson's r test, the distributions of certain artifact classes from each structure were then visually inspected using artifact distribution maps generated in ArcView (discussed below).

For the purposes of this dissertation I combined some groundstone tool classes to reflect more general functions of the tools (see Chapter 7 for descriptions of groundstone tools). These general categories include abraders, tablets, milling stones, pounding surfaces, grinding surfaces, hammers, grinders, and choppers. When I entered the counts of each class for use in ArcView I further reduced the categories to three: grinding, percussion, and miscellaneous. Distribution maps were generated and preliminary activity areas were outlined. I then returned to Pennington's original descriptions of particular artifacts in order to define more precisely which activities were performed within them.

A rather substantial bias was introduced into the statistical analysis when I combined the groundstone tool classes. At the time of this analysis I assumed many of the tools were used for processing plant materials. It appears as though I was mistaken in this assumption. If I had utilized Marilyn Pennington's (1977) original artifact categories in the statistical analysis I might have been able to detect which types of grinding and percussive tools are associated with specific artifact classes, further refining our understanding of the functions of specific tool types.

Geographic Information Systems

Map-based approaches to spatial analysis are largely descriptive, using only a few items of interest mapped on a background of related contextual information (Lock and Harris 1992). An example of this is a map of site locations displayed over related hydrologic or topographic information. It is recognized that graphic representation of data is a simple method for the summary, display, and analysis of large, complex data sets. A weakness of map-based approaches to spatial analysis is that only cursory explorations of correlations between a limited amount of archaeological and environmental variables are possible due to the complexity of the data sets.

Geographic information systems (GIS) have the potential to be of great benefit to archaeologists. GIS allow for the combination of traditional map analyses and the benefits of large storage capacities in computers (Lock and Harris 1992). GIS offer the ability to utilize more data in analyses, thereby increasing the numbers of questions that can be asked of the data set, and also, presumably, improving the resulting interpretations.

In my analysis of the materials from Little Egypt I am using statistical techniques and GIS, in addition to intuitive techniques developed by Smith, Polhemus, and Hally. This is a departure from previous household archaeological research, and also from typical uses of GIS in archaeological analysis. One of the most common applications of the technology has been developing complex multivariate statistical models of site locations by extrapolating beyond existing data to make predictions regarding the possible locations of other archaeological sites (Kvamme 1989; Allen, Green, and Zubrow 1990; Lock and Harris 1992).

Utilizing GIS in household archaeological research confronts one with many challenges, not the least of which is a difference in the types of data used. Modeling sites across a large landscape uses data types that are commonly found in GIS applications of more traditional GIS users. Geographers, geologists, and researchers in the natural sciences have amassed enormous databases on soil and vegetation types, rainfall patterns, hydrological maps, topography, and other data useful to the archaeologist working at regional scales.

These types of data are measurable over large geographic areas, and are commonly used in statistical analyses to explore correlations between natural features and phenomena and prehistoric site selection, for example.

Household archaeological research generates different data types. First, artifacts are recovered in a number of ways (e.g. flotation of sampled floor areas, piece-plotting hand-excavated materials), which has an effect on how the data can be displayed. Mapping of these different techniques can be generally described as coordinate or grid-based. While GIS have been developed to manipulate and display coordinate and grid-based data, combining the two forms presents additional challenges. For instance, if one is measuring the distance between artifacts to determine clustering patterns, can regularly spaced flotation samples be analyzed with piece-plotted artifacts?

Second, working on a structure measuring 30 by 30 feet generates types of data that are at a much smaller spatial scale, and are distributed across a smaller geographic space. If several individuals are living within an enclosed space, the artifacts of their activities can potentially overlap considerably. The specialized mapping features of a GIS can be used to tease the overlapping artifact classes apart to look for underlying patterns of distribution.

In my analysis of Little Egypt domestic structures I have approached the existing data in two ways. First, I had to enter the data into a database that would be compatible with the GIS and statistical software I wished to utilize. I have found Microsoft Excel (1997) to be a sufficient and readily accessible spreadsheet that can convert data tables into several different formats when necessary. I also used the statistics package SPSS (1998), some versions of which are compatible with older versions of Excel. By entering the data into a widely compatible database program I have saved myself many hours of tedious, additional data entry.

Second, I digitized the original field maps into ArcView version 3.2a (ESRI 2000). This has proved to be most useful, particularly as the original maps were in the process of being digitally scanned and were not available to me at the end of my research. The original

field maps are in fair to excellent condition, making digitizing that much easier. Each structure was digitized as a separate *view* (see Table 6.1 for definitions). A separate *theme* for created each data type. Each artifact class or archaeological feature has been entered in a format that makes sense for the type of data that it is. For example, piece-plotted sherds and projectile point/knives (pp/k) are entered as themes of points, postholes and burial pits are entered as themes of polygons, and partition walls and excavation limits are entered as themes of lines. One advantage of having all of the data classes in separate themes is the ability to separate particular features within a single theme to create a new theme from the subset of the data. For example, Structure 1 is a single stage structure; Structures 2 and 3 are not. It is possible to determine which postholes are affiliated with each construction stage of Structures 2 and 3, and separate those posts from the sea of postholes present on the original field maps. By "turning-off" the background themes one can display those postholes that go with the stage currently under analysis.

Table 6.1 – Definitions of terms in ArcView (ESRI 1998)

View – used to display, query, and analyze geographic data in ArcView *Theme* – set of related geographic features and the attributes of those features *Feature* – a shape and its associated location, used to represent real-world objects in a theme

One challenge I have faced in my re-analysis was the creation of a theme in ArcView for flotation data. As previously noted, structure floors were excavated in 2-ft squares. Every other floated square was analyzed, and the data tallies for those squares were entered into Excel spreadsheets. However, ArcView does not readily create grid-like polygons. Also, it is necessary to demonstrate that every other sample was analyzed, and that the data points are not a count of all artifacts in an octagon with 1-ft sides. I entered the floated data in a theme of points representing the center of every 2-ft square. This theme is linked to a database that contains the counts or weights for every class of artifact, including all botanical

and faunal remains, and lithic and sherd counts, among others, for those 2-ft squares that have been analyzed. The remaining points are listed in the database but there is no corresponding data entered for these unanalyzed squares.

Using this theme of points, contour maps for each artifact class were generated for each structure. One issue addressed during this stage of analysis was the presence of internal partition walls in the structures. The evidence for partition walls in certain areas of each structure is discussed elsewhere. These walls would have prohibited the even-distribution of artifacts across the floor of the structure, and would also be areas where tools, vessels, and refuse would have likely been deliberately placed or eventually come to rest.

ArcView allows the user to designate certain features as being "barriers" when generating contour maps. It is important when using this function that one is certain there was actually a partition wall there. Examining contour maps without using the barrier function can be one way of finding archaeologically invisible partition walls. Linear clusters of artifacts in an area that appears open – presumably for a sleeping bench or work area, are probable indicators of partition walls. So too are concentrations of artifacts near areas where partition walls are normally found, with no artifacts on the other side of the suspected partition location. Once the location of partition walls has been determined, more realistic distribution maps can be created. For example, distribution or contour maps created without accounting for partition walls might represent artifacts in a single large cluster. Accounting for partition walls might place artifacts on both sides of the wall. Subsequent interpretations of each of these maps will be markedly different. The former map is a less realistic portrayal of both the structure in general and the activities that created the separate artifact distributions. Accounting for internal partitions may also alter results of nearest-neighbor analyses, like those used by Smith (1978) at Gypsy Joint, for example. Artifacts may appear to be beside each other when floor deposits are examined, but if there was a barrier between them they should not rightly be considered "neighbors."

One of the greatest advantages of using GIS in descriptive map analyses is the ability to "turn-off" themes that are not currently under investigation. For example, when examining each structure for internal partition walls, one of the signs I searched for were linear arrangements of piece-plotted sherds and vessels, in addition to concentrations of sherds recovered from flotation sampling. I did not need the clutter of other themes like the distribution of deer bones, or the locations of burial pits, or the extent of fired daub over the structure. By making active and visible only the themes of postholes, piece-plotted sherds and vessels, and the isopleth map of sherds recovered from flotation, it was much easier to discern possible locations of interior partition walls.

Other Considerations in Spatial Analysis of Domestic Structures

Another aspect of spatial analyses of households is the domestic structure itself. Keeping in mind that households are separate from the structures they construct, occupy, and abandon, we cannot ignore the valuable information contained in these built environments. The structure as a culturally loaded environment has been the subject of much analysis.

A common subject of domestic structure analysis is the study of the form and use of space. As Rapoport (1990:11) notes, activities shape forms: if the form is not conducive to the performance of a particular activity, that activity may be more difficult or impossible to accomplish. Kent (1990:2) also postulates that the intended use of a space will influence its form more than vice versa.

Sanders (1990:44) lists seven factors beyond human behavior that can determine the form and use of domestic space. He divides these into three categories: *naturally fixed*, *flexible*, and *culturally fixed* (Table 6.2).

Table 6.2 - Other factors influencing use and form of space (adapted from Sanders 1990)

Naturally fixed	Flexible	Culturally fixed
- climate - topography	- available materials - level of technology - economic resources	- function - cultural conventions

Culturally fixed factors are thought to have the most "overriding" impacts over the other categories of factors, but it is these others that are usually more visible in the archaeological record. Sanders (1990:45) points out that most studies of structure function adhere to the idea "form follows function," but these interpretations are incomplete. Structures also contain symbolic cues or mnemonic devices for patterning behaviors of occupants and visitors (Kent 1990:2; see also Rapoport 1969). For example, upon entering a structure one recognizes all of the symbolic cues that denote public and private spaces.

Polhemus differentiates between "public" and "private" spaces in Dallas phase structures in east Tennessee (Polhemus 1990, 1998). The central hearth area is the public area in Polhemus' model. Private areas are marked by the benches along exterior walls, and also by the areas partially enclosed by partition walls. These visual cues may also have been reminders to the occupants and visitors of inhabitants' statuses and positions within the household. For example, it is likely that the household head male(s) and female(s) occupied specific areas of the structure, as will be discussed later in this work.

Structures can also have built into them the worldview of the inhabitants (Sanders 1990:45). Household members have ideas of "places" within structures based on these worldviews and cultural norms. That is to say, areas within structures may symbolically represent sacred locations, or be models of cosmography. This notion of a worldview incorporated into symbolic signals built into domestic structures is applicable to studies of Late Mississippian households. As Hudson (1997:211) discusses, a house with a central hearth and rooms along the exterior walls fits the widespread Mississippian motif of the equal-armed cross, symbolizing the four cardinal directions with a central fire. It is possible that the different directions had different meanings or values attached to them, including the notion of opposition seen in Southeastern native belief systems (Hudson 1990; 1997). These meanings might also have been imparted on the inhabitants or users of different areas of domestic structures. It is possible that individuals using particular areas of the house were

associated with particular cardinal directions, colors, animals, and other elements of southeastern native religions.

Slightly less esoteric than symbolic representations of religious worldviews in domestic structures is the manifestation of spatial divisions of gender roles. If there is a division of labor by gender, there may also be a division of space by gender. This is not to say that there cannot be overlap, particularly in confined or constricted areas like domestic structures, but the areas where men and women perform certain activities are separate to a certain degree and are potentially discernable. If form follows function, and there is a division of labor by gender, then perhaps structures were built to reflect these divisions.

Analysis of Gender

"Gender," as it is commonly taught in introductory anthropology courses, is a culturally constructed identity that is separate from biological sex. Gender studies in archaeology commonly examine the topics of gender roles, gender identities, and gender ideologies and how these areas are related to archaeological evidence (Eastman and Rodning 2001). Studies of gender roles are concerned with the different activities and behaviors of men, women, and children (Conkey and Spector 1984; Eastman 2001; Eastman and Rodning 2001). In this dissertation I examine gender roles as they are manifested through activity areas within domestic structures.

The gender division of labor in prehistoric southeastern societies has been examined in several studies (Polhemus 1998; Smith 1978, Thomas 2001), primarily through the use of data collected by Swanton (1946) and Hudson (1976). Smith (1978) utilized data on gender division of labor from ethnographic studies of 185 societies (Murdock and Provost 1973), then compared these findings to descriptions of Southeastern societies in Swanton (1946). Of fourteen technological activities described as strictly masculine, and nine that are quasi-masculine, Smith finds ten that correlate with descriptions of strictly masculine activities from Swanton (Table 6.3). Ten technological activities are described as quasi-feminine by Murdock and Provost, of which six have correlates in Swanton as being strictly feminine.

Table 6.3 - Southeastern Indian technological activities by gender (after Smith 1978)

Masculine Technological Activities	Feminine Technological Activities
- Lumbering (gathering wood other than fuel) - Hunting large fauna - Working in wood - Fowling - Manufacture of musical instruments - Catching small fauna - Boat building - Stone working - Fishing - House building	- Fuel gathering - Pottery making - Gathering wild plant foods - Water fetching - Cooking - Preparation of plant foods

Missing from Smith's lists are several activities described by Murdock and Provost that artifactual evidence suggests occurred at Little Egypt. These include working in bone, horn, or shell, and butchering. Murdock and Provost define these as quasi-masculine activities. Other activities have no discernable artifactual evidence at Little Egypt but were likely carried out by household members: spinning, manufacture of cordage, and possibly net making. Of these only spinning is listed as a quasi-feminine activity; cordage and net manufacture are quasi-masculine activities. Smith also does not discuss hide working (tanning hides, cloth production, sinew production) or weaving (basketry, cane matting, cloth), activities that were very likely major parts of household activities. Additionally, Smith's list omits women's potential contribution to household diet in the form of garden hunting (Reitz and Wing 1999:287-288). This opportunistic and/or deliberate hunting and trapping of game may be inferred in the form of species that are normally attracted to garden plots. Lastly, Smith's list does not include tool production and maintenance activities carried out by women. This issue is addressed in the concluding chapter.

CHAPTER 7 – ARTIFACT CATEGORIES

The purpose of this chapter is to provide basic descriptions of the artifact categories used to identify activity areas within the domestic structures at Little Egypt. This is not meant to be an exhaustive list of the types of artifacts found within the three structures, but will highlight the major categories of artifacts commonly recovered. Following Polhemus (1998), the artifact descriptions are largely functional in nature, and do not delve into style. For example, in the original analysis of non-flaked tools from Little Egypt and the King site, Pennington (1977:4) notes that she classified the artifacts using "criteria designed to reflect, but not define, tool function." More specific interpretations of some artifact uses are presented in the concluding chapter.

Ceramic Artifacts

By far, sherds from ceramic vessels constitute the most ubiquitous artifact recovered from the three housefloors at Little Egypt. Extensive analyses of ceramic vessels have been conducted by Hally (1980, 1983a, 1983b, 1984, 1986b). Identification of morphological vessel types is based on regularities in vessel shapes and sizes and determination of their functions. These shapes and sizes and their general functions are briefly described here.

Eight shape classes have been identified for the Barnett phase, and include three jar forms, four bowl forms, and a bottle form (Figure 7.1). Several of these forms were made in different size classes. Specifically the Barnett assemblage includes pinched rim jars, Mississippian jars, carinated jars, carinated bowls, rounded bowls, flaring rim bowls, and rarer "gravy boats" and bottles. Two of the jar forms (pinched rim jars and Mississippian jars) were made in several sizes and were used for boiling foodstuffs. The largest pinched rim jars were used for storage of water, animal oils, and liquid foods. Carinated jars were

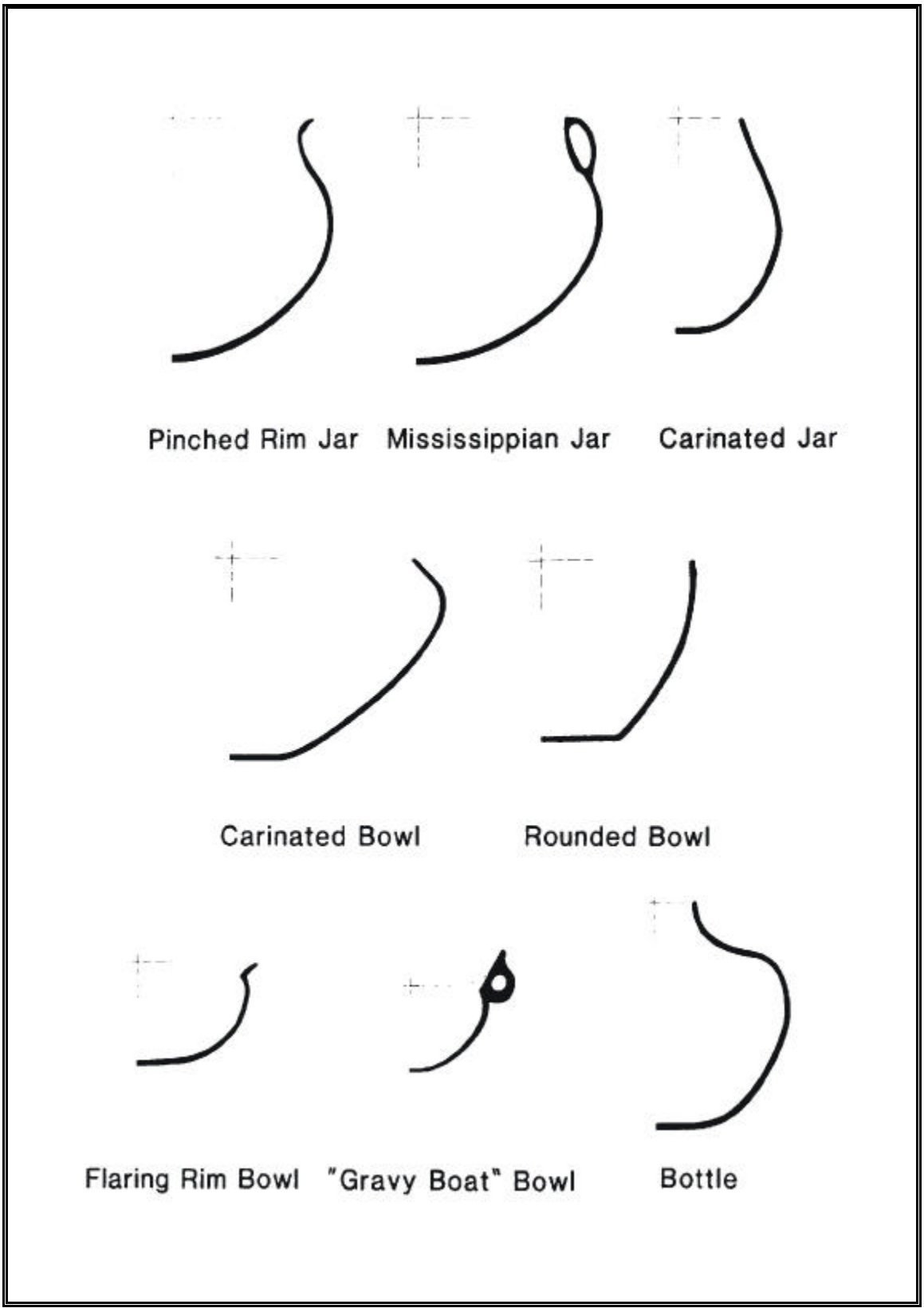


Figure 7.1 - Barnett phase vessel forms (after Hally 1984)

likely used for short-term storage or serving liquids. Bottles may have served a similar purpose. Carinated bowls were used for re-heating and serving liquid foods. Rounded bowls were used to contain foods (and non-foods) during processing (e.g. stirring, mixing, etc.). Flaring rim bowls were used for serving small quantities of liquid and solid foods. Lastly, the "gravy boat" form may have been used to hold coals or fire, possibly during rituals.

The use-life of a ceramic vessel did not always end when the pot was broken. Substantial evidence exists to suggest that broken pottery fragments were used as containers and tools (Hally 1983a, 1983b). At least one partial vessel from Little Egypt was used as a griddle. This large jar fragment was placed concave up over a fire, as evidenced by soot deposits around the outer edges of the convex side, and oxidation discoloration on both the interior and exterior surfaces. Historic accounts document the use of heated hearth surfaces and flat rocks to bake or fry corn or nut meal (Swanton 1946:355-356). Vessel fragments may also have been used to cover unbaked loaves before coals from the fire were scooped on top, essentially creating a temporary oven.

Hally (1983a) also cites several ethnographic studies that document partial vessels being utilized as scoops, lids, bowls, and other tools. Partial vessels were commonly stored until needed, which may account for large sherds or partial vessels found in "unusual" (i.e. areas outside of food preparation areas) places within domestic structures.

Ceramic discs were recovered from all three domestic structures at Little Egypt. These were created by grinding the edges of sherds to achieve a circular shape. The diameters of the discs vary, but no exact measurements were taken. None of the discs are perforated, which would otherwise suggest they functioned as spindle whorls. The exact function of ceramic discs is unknown, but they are commonly thought by archaeologists to have been used as gaming pieces. Several games of chance described by Swanton (1946) involved one player tossing sticks, pebbles, or other items down while a second player attempted to count the exact number on sight. Another game involved tossing seeds, pebbles, or other items with one

side darker than the other; the number of points determined by the number of light or dark objects landing face up. Ceramic discs could have been used in these games.

Other ceramic objects recovered from some or all of the structures at Little Egypt include clay pipes and beads. The largest number of ceramic pipe fragments (n>10) came from Structure 1, where both ceramic and stone pipes were undoubtedly used to smoke unknown materials. Structures 2 and 3 also contained several ceramic and stone pipe fragments. Clay beads were recovered in limited quantities from all three structures.

Worked Stone Artifacts

Worked stone artifacts from the Little Egypt site have been analyzed by Beverly Conner, David Hally, and Marilyn Pennington (Conner 1985; Conner and Hally 1980; Pennington 1977). An assortment of rocks and minerals were utilized by the inhabitants of Little Egypt, and reflect the wide assortment available in the nearby Piedmont, Blue Ridge, and Ridge and Valley provinces. Stone materials include cherts and quartzes, in addition to several types of sedimentary, metamorphic, and igneous rocks (Chapter 4).

Flaked Stone Tools

Flaked stone artifacts recovered from domestic contexts include a number of tool forms, flakes, and other debitage related to lithic tool production. Raw materials of flaked stone tools are usually cryptocrystalline quartzes (ex. chert) that fracture conchoidally. Cores are pieces of raw material with evidence of flaking from one or more sides. Flakes are thin fragments of stone that have a bulb of percussion, a striking platform, and/or concentric stress rings radiating out from the bulb. For the purposes of this dissertation no finer classification of flakes was used, however Conner and Hally (1980) found all classes of flakes from every stage of lithic tool production within the structures at Little Egypt, but with an emphasis on final stages.

“Preforms” are the early stages of projectile point/knife production. They are usually roughly in the shape of a point, but often have deep flake scars, minimal retouching along the

edges, and occasionally step scars. Some preforms may be the aborted attempts of point production, discarded when bifacially thinning of the blade became overly difficult.

Informal flaked tools are those made by minimal alterations to flakes removed from cores. These include different forms of scrapers, gravers, and flake blades, to name but a few. While micro-analysis of flaked tools was not conducted at Little Egypt, past studies demonstrate that specific uses of tools can sometimes be determined (Keely 1980; Ledbetter et al 2001). Scrapers are multi-purpose tools that could be hafted or not and used to accomplish any number of tasks related to food processing, bone and wood tool production, and hide preparation, among many others. For instance, a thumb scraper (so named because of the placement of the thumb on the back of the blade during use) can be used for cleaning meat from hides prior to tanning, shaping or smoothing wooden objects, and scraping bone or antler. Gravers can similarly be used to engrave bone, shell, wood, or antler, and may have been used to produce bone tools like fishhooks, needles, and awls. Flake blades may have been used in food processing activities, including meat butchering.

Formal flaked stone tools include projectile point/knives (pp/k). The hybrid name is used by archaeologists to reflect the versatility of these points. Hafted in a variety of ways, the pp/k can be used as a tip for projectiles (e.g. arrows, darts, spears) or held in the hand like a knife. Several forms are readily identifiable in the artifact assemblages recovered from domestic contexts at Little Egypt. Finely flaked isosceles triangular projectile points, slightly larger points/knives (“leaf”-shaped pp/k), curated points from earlier occupations, and reworked/retooled points make up the major forms.

The diversity observed in the non-curated pp/k likely reflects functional differences between isosceles triangular and “leaf”-shaped points. Polhemus (1998:84) suggests that a closer study of points from contexts other than burials may help define a utilitarian knife form from points in Dallas phase assemblages. A cursory examination of points from Little Egypt suggests that a utilitarian knife form was used during the Barnett phase as well.

Curated points include those from earlier Woodland and Archaic period occupations. They appear to have been deliberately brought into the structures, and in some cases may have been utilized by specific household members. Reworked or retooled pp/k are those that were formerly one type, but have been retouched or flaked into new forms for uses in different activities than those they were originally designed. For instance, in Structure 2 there are several examples of isosceles and "leaf"-shaped pp/k that have been flaked along one edge, altering the shape to a curved knife form. The other edge remains unaltered in most examples, revealing the original form of the point. Similarly retooled pp/k have crescent-shaped notches removed at the midpoint or base of the blade edge. These tools may have been used to shape arrow shafts or process plant parts.

Percussive Stone and Groundstone Artifacts

This class of stone artifacts includes rocks that have been altered through pecking and/or abrading and unmodified rocks selected for specific shape, texture, or durability qualities. Pennington (1977) analyzed assemblages of stone tools from Little Egypt and the King site (9FL5) and devised a typology for percussion and groundstone tools based on shape, size, material, and wear marks. Of thirty-three types identified by Pennington, twenty-seven were found at Little Egypt. Further analysis by Hally (1980) of materials not available to Pennington at the time of her study and the omission of artifacts from the King site are included in the site report. An abridged list is presented here. Pennington's type numbers are in parentheses.

Abrading tools include three forms of grooved, beveled, or hollowed stones (Types 1, 2, 15). These are mostly made of natural rocks of various kinds and have at least one edge that shows striations and wear from abrading activities, either as an object held in the hand or as a surface upon which other materials are abraded. Finer specimens (Type 17) are described as polishing discs, but some are also just natural stones with faces or edges worn through abrading actions.

Tablets include flat stones or stones with one flat surface (Types 3, 5, 20, 22). One example of a large disc (Type 22) was found in Structure 1. Yellow pigment was observed in crevices around the circumference, suggesting it was used as a palette. Two of the hoe-like tools (Type 20) from Structure 1 described by Pennington are quite flat and made from a soft rock, and do not appear as though they were used or could be used as a hoe. A third specimen, however, appears to have been hafted and may be a small hoe. The other tablet forms (Types 3, 5) have wide channels ground into flat surfaces or the entire flat surface shows signs of grinding.

Milling stones include natural stones that have been shaped in some instances by pecking the surface to roughen it (Types 6b, 7, 24). The exact use of the lenticular specimen (Type 24) is more difficult to determine. It was found near a battered end roller (Type 26), suggesting it was a surface upon which something was ground. Some milling stones were undoubtedly used to process nuts, corn, or seeds. It is possible that they were used with wooden bowls (Polhemus 1998:91; Swanton 1946:560) inside the house. Most milling of corn into meal appears to have occurred outside the structure through the use of tall wooden mortars and pestles (Swanton 1946). Roots, berries, herbs, and other plants could have been processed indoors in smaller mortars.

Pounding surfaces include cobbles and rocks with pits, depressions, or other evidence of percussive actions on one or more surfaces (Types 8, 9, 10, 11). These might have been used as anvils for cracking nutshells, or for some stages of lithic tool production. Grinding surfaces include natural rocks with clear striations across one or more faces (Type 16). These striations are generally deeper in the center of the face, and cross the surface of the face in groups or single lines from every angle. The striations may have been made through grinding down edges of stone tools.

Hammer stones include a wide assortment of cobbles and long “rollers” with evidence of battering on ends and edges (Types 12, 13, 14, 26, 29). One example of Type 29 (possible mano) was recovered from Structure 2. This specimen was “greasy” to the touch, and

washing of a portion of the surface removed the grease and color (Pennington 1977:126). It has been suggested that the tool was used to process animal bones, perhaps for grease or marrow extraction (Hally 1980). The other examples were likely used in conjunction with various pounding surfaces to process foodstuffs, bone, or stone.

Chopping tools include formally prepared celts or other tools with a cutting edge on one end and a poll or striking surface on the other (Type 19). Celts were recovered from Structure 2. The example from XU 5 discussed by Pennington and Hally now falls outside of the proposed boundaries for Structure 3. Celts are generally considered to be woodworking tools, specifically as wedges for splitting logs or posts.

Miscellaneous Lithic Artifacts

Two other classes of artifacts deserve mention here. First, stone pipe fragments were found in all three domestic structures. The majority of these were found in Structure 3, where they were being produced. The pipe fragments are of phyllite, a soft metamorphic rock. One fragment of a pipe bowl shows clear evidence of drilling, though the drill material is unknown. Pipe stem fragments are either very finely drilled or are polished afterwards, erasing the most obvious drill marks. The exteriors of some pipe stem fragments are angular, while others are cylindrical and smooth. Long scraping marks down the length of some pipe stem fragments provide some clues to the stages of pipe production. First, large pieces of phyllite are cut into roughly the shape of the pipe. Stems and bowls are then drilled out. After successfully drilling out the stem and bowl, the holes are polished or smoothed. Lastly, the exterior surfaces of the pipe are carved. Breakage seems to have occurred at every stage of production, at which point the fragments were discarded. No lateral cycling of worked phyllite fragments (e.g. for use in stone bead or ornament production) seems to have occurred in Structure 3.

Lastly, mineral and stone pigments were found in the structures. These include graphite, magnetite, hematite, and possibly limestone. Swanton (1946) cites various historic sources outlining the use of body painting by male Indians, particularly during ceremonial occasions and during warfare. Common colors included red and black, but white, yellow, and

blue have also been mentioned in historic accounts. William Bartram and Frank Speck (in Swanton 1946:530) noted that historic Creek and Yuchi women abstained from painting their bodies, except for younger females who may have used it to advertise their single status or willingness to grant sexual favors. Tattooing was used extensively by Southeastern Indians, and is cited by Swanton (1946) as a possible reason why body painting was not as prevalent among females. Tattooing was used by men, women, and children and may have been tied to status. The tattoos were drawn by piercing the skin with sewing needles (in the Historic period), gar teeth, bone needles, or other sharp objects, then rubbing colored powders into the wounds. It is interesting to note that many of the historic accounts describe fevers as a common malady of new tattoo recipients. Perhaps the minerals and charcoals used to dye the tattoo caused some sort of blood poisoning.

Botanical Remains

Botanical remains were recovered from domestic structures at Little Egypt through the extensive use of floatation sampling across house floors. These materials were analyzed by Hally (1980, 1981) in order to determine their specific distributions within domestic structures, to identify the season of occupation of the structures, and to determine what impact prehistoric plant processing had on how and what elements are preserved in the archaeological record. This latter study is briefly summarized here in order to explain why different size classes were used in this dissertation. The complete list of botanical materials recovered from domestic structures at Little Egypt can be found in Appendix A.

Hally (1981) notes that botanical materials are more likely to be recovered in the archaeological record if they are carbonized. Carbonization of botanical materials in domestic structures can occur in several ways, namely: during processing, when disposed of in hearths, or if the structure itself burns. Through a careful examination of food processing techniques reportedly used by Indian groups in the Southeast, Hally determined plant parts that are more likely to be preserved through carbonization in structures that did not burn. This examination also revealed processing techniques that would produce specific artifact classes that could be

indicators of activity areas. For instance, hickory nuts were an important food source for Southeastern Indians. Both the oil and meat were obtained from nuts. Hickory nut meat was collected by cracking the nutshells, then collecting the pieces of kernel (and adhering fragments of shell) for further grinding. This coarse nut meal was either consumed (as a thickening and flavoring agent in stews, or eaten dry) or tossed into boiling water to extract the oil ("hickory milk") (Hally 1981:731-732). Some ethnohistoric accounts allude to parching nuts before grinding, a process which would potentially char some materials.

Walnut, butternut, and acorn are easier to remove from their shells than hickory, and therefore larger fragments of these kinds of shell are common. Processing might have involved little more than cracking the outer shell. Acorns contain high quantities of bitter tannic acids and needed to be soaked and rinsed through several water changes before the nuts were palatable. Acorn meal was also incorporated into stews.

From this analysis it becomes readily apparent that several sizes of nutshell were produced at different stages of production and consumption. The largest fragments are probable indicators of initial nut-cracking activities, and we might expect to find them positively correlated with percussion tools or anvils where nut cracking occurred (Gougeon 1998a). However, nutshell may also have been saved for use as fuel. Large concentrations of larger sizes (greater than 5.5 mm) of nutshell may be evidence of collecting shell pieces for future use.

Medium and small sizes of hickory nutshell would have been produced during several stages of processing. First, smaller fragments produced during cracking might escape detection during cleaning activities, or be too difficult to gather compared to larger fragments. Second, small fragments of shell that were incorporated into nut meal were expectorated when encountered during consumption (Hally 1981). The first process might indicate areas where nuts were processed. Concentrations of the smallest fragments of shell located away from obvious processing areas may be evidence of consumption.

Corn kernels and cobs were also examined separately in an attempt to discern the

different activities that might have produced their remains. Corn was prepared in a variety of ways, including roasting whole ears, parching, grinding into a meal for use in gruels or consumed dry, and processing with lye to produce hominy (Hally 1984, 1986b). These processing techniques can result in different types of botanical evidence. For example, charred kernels can result from parching, and whole and fragmentary cobs may remain after corn is removed for consumption. Cobs may also have been reserved for use as fuel.

Some plant foods were only minimally processed before consumption. These include many seeds and fruits. Squashes and fruits may have been dried, or in the case of persimmons shaped into loaves, but these remains are difficult to differentiate from raw or unprocessed foods, especially in burned structures (where unprocessed materials can be carbonized). The absence of seeds or fruit in the unburned Structure suggests that heat was not used to process these foods.

Faunal Remains

Faunal materials provide archaeologists with evidence of animals consumed, kept, domesticated, and used as raw materials for tools, clothing, or ornaments by human populations, in addition to animals that lived near or with them (Reitz and Wing 1999). Faunal remains recovered from domestic contexts at Little Egypt are the products of many activities, including food preparation, consumption, tool manufacture and use, and discard, to name but a few. As with botanical remains, the preservation of faunal materials is contingent on many factors, not the least of which are the means by which the animal parts were processed. Preparation of game likely included such activities as gutting, cleaning, skinning, extracting marrow, grease, sinews, and other valuable tissues, brain extraction for tanning, butchering, drying or preserving meats, and reserving bones and antlers for tool or ornament production. Some of these activities were likely performed at the kill site, particularly gutting activities, but possibly also including some initial butchering and skinning (Reitz and Wing 1999:204). These activities alter the “completeness” of the faunal assemblage recovered from domestic contexts, and introduce another level of complexity to archaeological analysis.

Because Structure 2 did not burn, we can infer that some faunal remains recovered from the housefloor were likely burned before the house was abandoned, else they would not survive as well or at all in the archaeological record. As such, a large number of faunal elements from Structure 2 are teeth, which are more resistant to decay than other bone. Many other elements were not burned. This raises three considerations. First, the small amount of charred faunal material from Structure 2 suggests that meats cooked within structures were likely stewed. It is assumed that roasting meat would produce more pieces of charred bone. Roasting of meat, if and when it occurred, was likely an outdoor activity. Second, burned faunal elements from Structures 1 and 3 may be a product of the destruction of the houses, not cooking activities. Third, cleaning activities kept larger faunal assemblages from accumulating within the structures. If regular cleaning activities did not remove bones from the structures, we might expect to find more materials in the structures that burned.

The faunal assemblages of Structures 2 and 3 are nearly identical, suggesting similar processes created the assemblages. It is possible that similar activities occurred in Structure 1 as well. If this is the case, faunal materials from Structures 1 and 3, like those from Structure 2, are likely the remains of butchering activities, or bones discarded after consumption but not yet removed to outdoor refuse areas. Bones were possibly given to dogs, removed by scavenging animals, reserved for tool or ornament production, reserved for grease extraction, or removed from the structure entirely. The paucity of charred faunal materials from Structure 2 supports the idea that bones rarely came in direct contact with fire.

Certain faunal elements were used as raw materials for tool production (Hudson 1976; Reitz and Wing 1999; Swanton 1946). Scapulae from larger mammals were used as hoes, phalanges and other lower limb and foot elements were shaped into fishhooks, gorges, awls, and needles, and astragali were used as gaming pieces or with bow-drills (to secure the shaft and protect the palm of the hand from friction burns). Mandibles could be used to remove kernels from corn cobs. Antlers were used as tools like awls, pressure-flakers, and projectile points. Beaver incisors were used as pressure-flakers. Teeth from many animals were also

used as ornaments. The hollow bones of birds were used as ornaments. Turtle and tortoise shells were used as containers, but more commonly as rattles. Small stones were sewn up in the shell and fastened to ankles, or affixed to handles. Freshwater shells were used as ornaments, scrapers, or knives, while marine shells were prized for uses as gorgets, ceremonial vessels, and ornaments. Skulls of animals were used to transport brains from the kill site for use in tanning (or for consumption). It is possible that portions of skulls were also used to process the hides.

In Structure 1, six partial deer skulls are represented only by elements from the back half of the cranium. This suggests that brains for tanning hides were brought back to the structure in their original containers. One partial deer skull consisted of bases of both antlers and large portions of the top of the skull cap. These fragments exhibit wear patterns that may be the result of hide-working activities. The fronts of both bases are worn quite smooth. The top of the deer skull may have been held in the hand and used to break the fibers of hides, and over time caused the polished, abraded areas observed on the antler bases.

Summary

In this chapter the broad categories of artifacts analyzed for this dissertation were outlined, and the forms and uses of some commonly found artifacts were described. In the following chapter, the distributions of each class of artifact are discussed for the three excavated structures.

CHAPTER 8 - DISTRIBUTIONS OF ARTIFACTS

Isopleth maps of distributions of artifact classes across the floor of each structure were generated in ArcView (ESRI 2000). For each structure, maps were generated using a "barrier" function that prevents the program from interpolating across certain boundaries. These barriers were placed around the exterior walls, to prevent artifacts recovered from structure basins from being included in the analysis. Furthermore, barriers were placed at those partition walls that could be detected by the presence of architectural remnants or strong artifactual evidence (see Chapter 6). Grid-based distribution maps were generated for a few artifact classes that were not recovered in large numbers. None of these maps are presented here, but were used in the analysis. The reader is referred to Appendix B for the data used to generate the maps found in this chapter. A cursory examination of the distribution of each artifact class was made prior to more complex analyses, and is described below.

It should be noted that the contour intervals for the artifact classes varied somewhat between structures. For the most part this was done to make the minute quantities of botanical materials recovered from Structures 2 and 3 more visible. These differences in contour interval should be kept in mind when comparing the distributions of corn kernels between the three structures, for example. An apparent cluster of kernels to the northwest of the hearth in Structure 3 is somewhat less significant when it is realized that this represents only 0.05 g of material. I have noted what the contour interval is for each class of artifact in each structure.

Structure 1

Ceramic Materials

Ceramic sherds, complete vessels, and large vessel fragments make up a large number of the individual artifacts recovered from Structure 1. A light distribution of sherds was found over nearly the entire surface of the floor, barring an area just southeast of the central hearth (Figure 8.1a). Several large concentrations of sherds were found in the west, north, and east corners, and along the northeast and southwest walls. Whole or partial vessels were found in two main areas: the compartment framed by the interior partitions on the southwest side of the structure, and the compartment formed by the partition walls on the northeast side (Fig. 8.1b).

The whole and partial vessel assemblage consists of a number of Dallas Incised jars (n=11; only one represented by more than one sherd), Lamar flaring rim bowls (n=4; 2 have scalloped rims), Lamar carinated bowls (n=6; 2 are frog effigy bowls), and a large Lamar pinched rim jar fragment. This latter vessel fragment was used as a griddle (Hally 1983b).

Ceramic discs (n=5) are found in four areas of the structure. These include the north, east, and south corners, and in the southwest compartment. All units from which the discs were recovered are along or near partition or exterior walls.

Ceramic pipe fragments (n=12) were recovered in the northern half of the structure, namely the east and west corners, the northeast and northwest compartments, and near the north center post.

Worked Lithic Materials

Flaked stone is found in small amounts along the southeast and southwest walls, and in the east and west corners (Fig. 8.2a). Very few flakes were recovered in the south and north corners, or along the northwest wall. A great concentration of flaked stone debris was recovered in the compartment formed by the partition walls on the northeast side. A closer examination of this large concentration shows that it is made up of three excavation squares: one consisting of 227 flakes in the northern-most corner of the compartment, a second 119

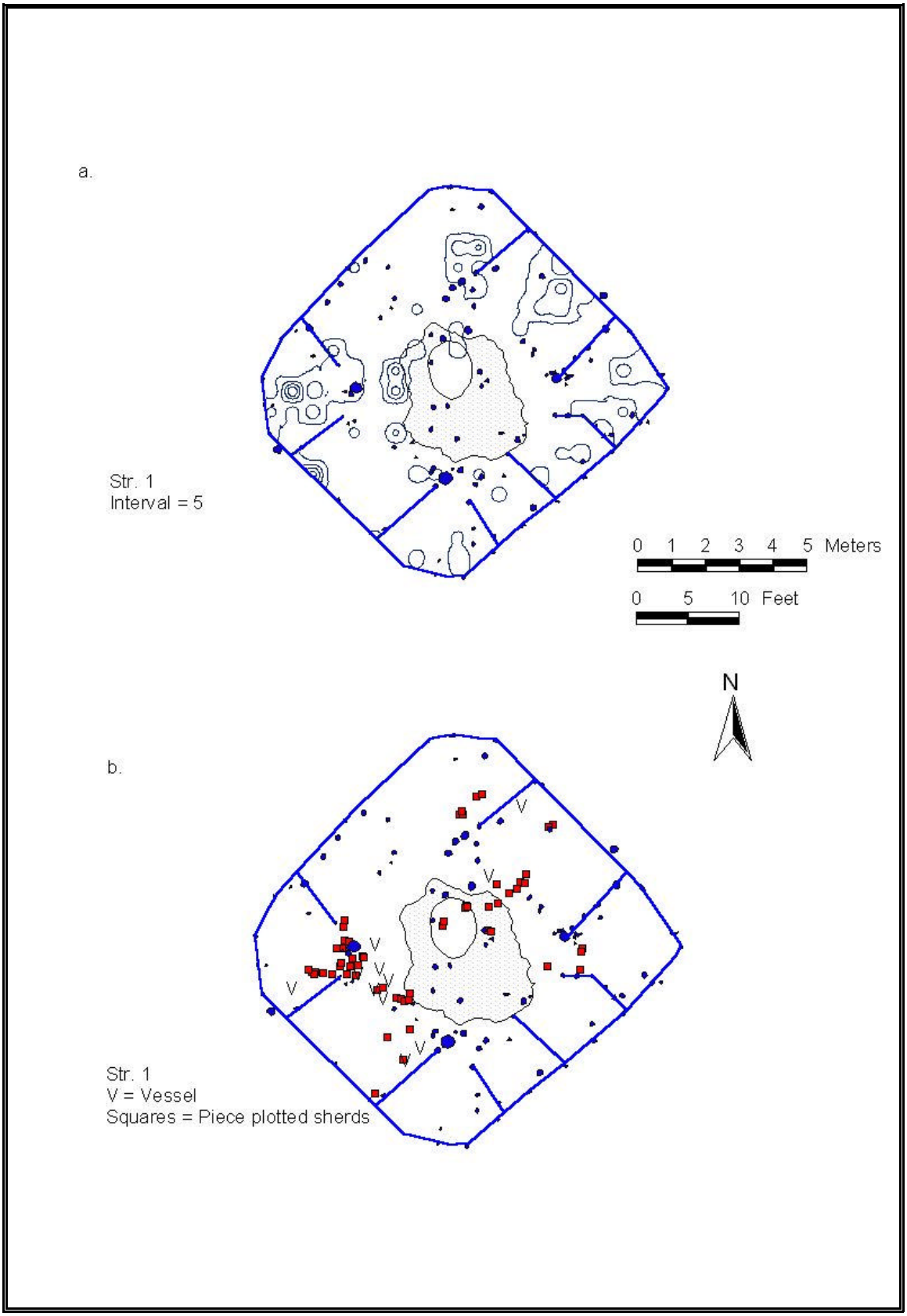


Figure 8.1 - Structure 1, ceramic distributions; a. sherds; b. vessels

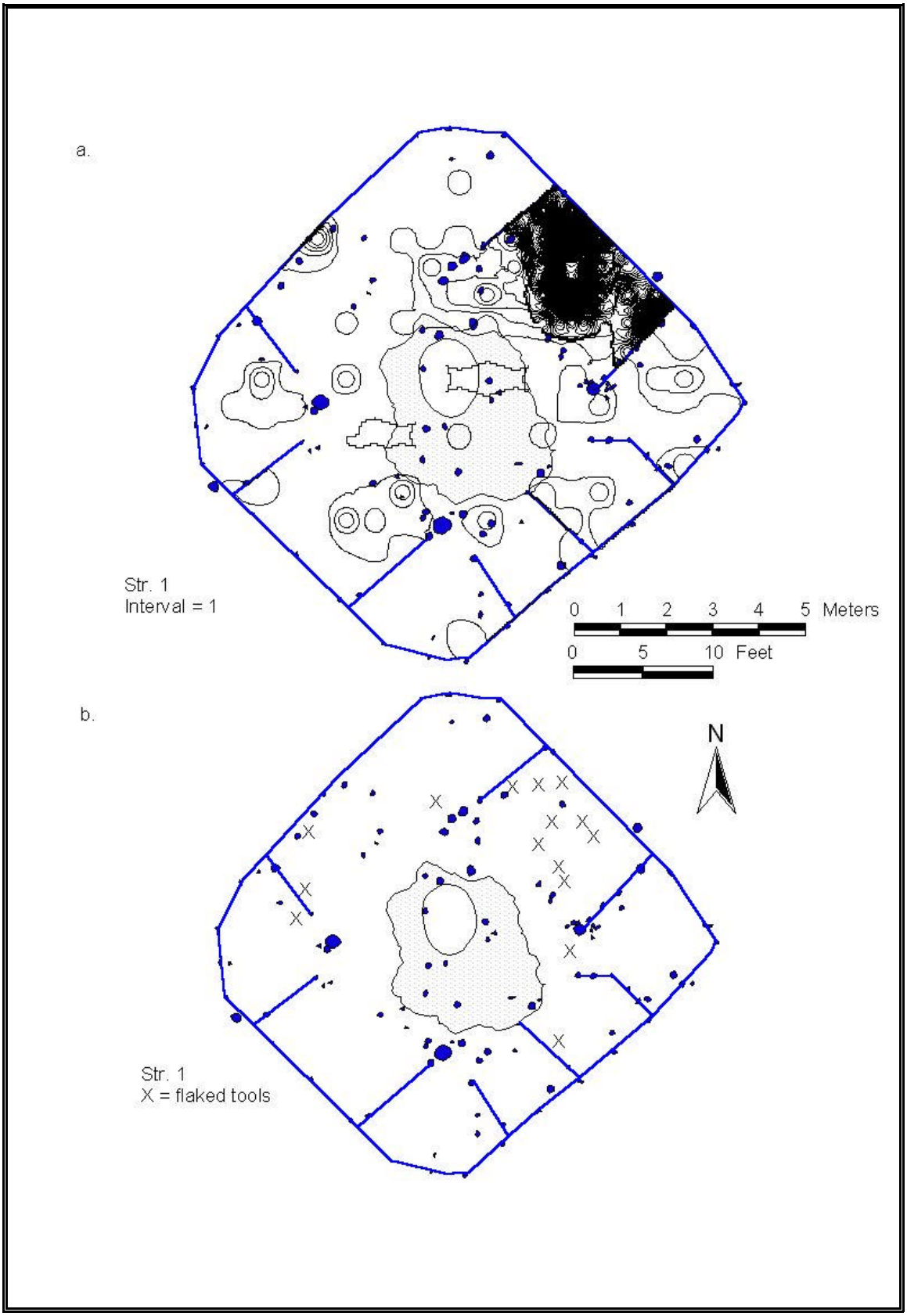


Figure 8.2 - Structure 1, lithic distributions; a. debitage; b. pp/k and other flaked tools

flakes in the front center, and a third comprised of 86 flakes in the southern-most corner. Excavation squares surrounding these three units also have high numbers of flakes, though it should be noted that floated squares are separated by non-analyzed squares. Had 100 percent of this area been floated and analyzed we would likely observe a continuous distribution of flakes and other debitage.

Projectile points or knives (pp/k), and unifacially and bifacially flaked tools are found in several areas of Structure 1 (Fig. 8.2b). Many (n=21) are found in the northeast compartment. Three are found in the southwest compartment, two along the partition wall between the west corner and the northwest compartment, one in the northwest compartment, and one in the south corner, and one along the partition wall divide the compartments of the southeast wall.

These flaked tools in the southwest compartment include a white quartz Archaic period pp/k, a white quartz Mississippian pp/k, and a black chert Mississippian pp/k fragment. The quartz Mississippian point has one face that is an original fracture plane of the flake from which the pp/k was fashioned. The bifacially flaked chert pp/k has a small flake missing from the base. It is unclear which area these two pp/k are from as the partition wall bisects the flotation units.

The tools from the west corner – northwest compartment interface are both finely made, light gray chert Mississippian pp/k. One has a flake missing from an edge near the base. This is similar to three points recovered from Structure 2 (see below). While not retouched to the extent of the points from Structure 2, this modification of the original form may have been deliberately done to create a scraping tool.

A fragment of a clear quartz Mississippian pp/k was recovered from the northwest compartment, along the exterior wall. One face is an original fracture plane of the flake. A unifacially flaked tool resembling a scraper or blade was found in the south corner. The base of a bifacially flaked, black chert Mississippian pp/k was recovered near the partition wall.

The lion's share of flaked tools is from the northeast compartment. A unifacially flaked chert graver was found in small cluster of artifacts located just outside the northeast compartment, with three light gray Mississippian pp/k fragments and six large reduction and decortation flakes. Along the center of the northeast compartment extending from the exterior wall towards the central hearth is a line of debris in which were found four Mississippian pp/k fragments, three complete Mississippian pp/k, and a unifacially flaked scraper or blade tool. In the northern half of the northeast compartment were found two Archaic pp/k fragments (1 quartz, 1 chert), four Mississippian pp/k fragments (1 quartz, 3 chert), a complete black chert Mississippian pp/k, and a partial gray chert Mississippian "leaf" shaped pp/k. A black chert preform pp/k was also found in this area. Just outside this area of the northeast compartment near the central support post were found a quartz Archaic pp/k base and a bifacially flaked quartz tool.

Eleven of twelve cores recovered from Structure 1 were from the northeast compartment. The twelfth core was found near a central support post.

Grinding and percussion tools are distributed in a pattern similar to flaked stone tools (Fig. 8.3). Assorted grinding tools were recovered primarily from the northeast compartment (Fig. 8.3a). Single grinding tools or fragment were found near a central support post, and in the southwest compartment, south corner, and east corner. Percussion tools are also primarily from the northeast compartment, although isolated tools or fragments are found in all four corners, the southwest compartment, and along the partition wall dividing the southeast compartments (Fig. 8.3b). This latter pattern of distribution may be a result, at least in part, of cleaning episodes (Chapter 10).

Two fragments of cut shale were recovered to the west of the hearth. One is close to the hearth and the other is closer to the west central support post. The two pieces do not cross-mend, and do not appear to be of the same parent material. Two large fragments of unworked white and gray-banded limestone were found in the north corner. This may be the

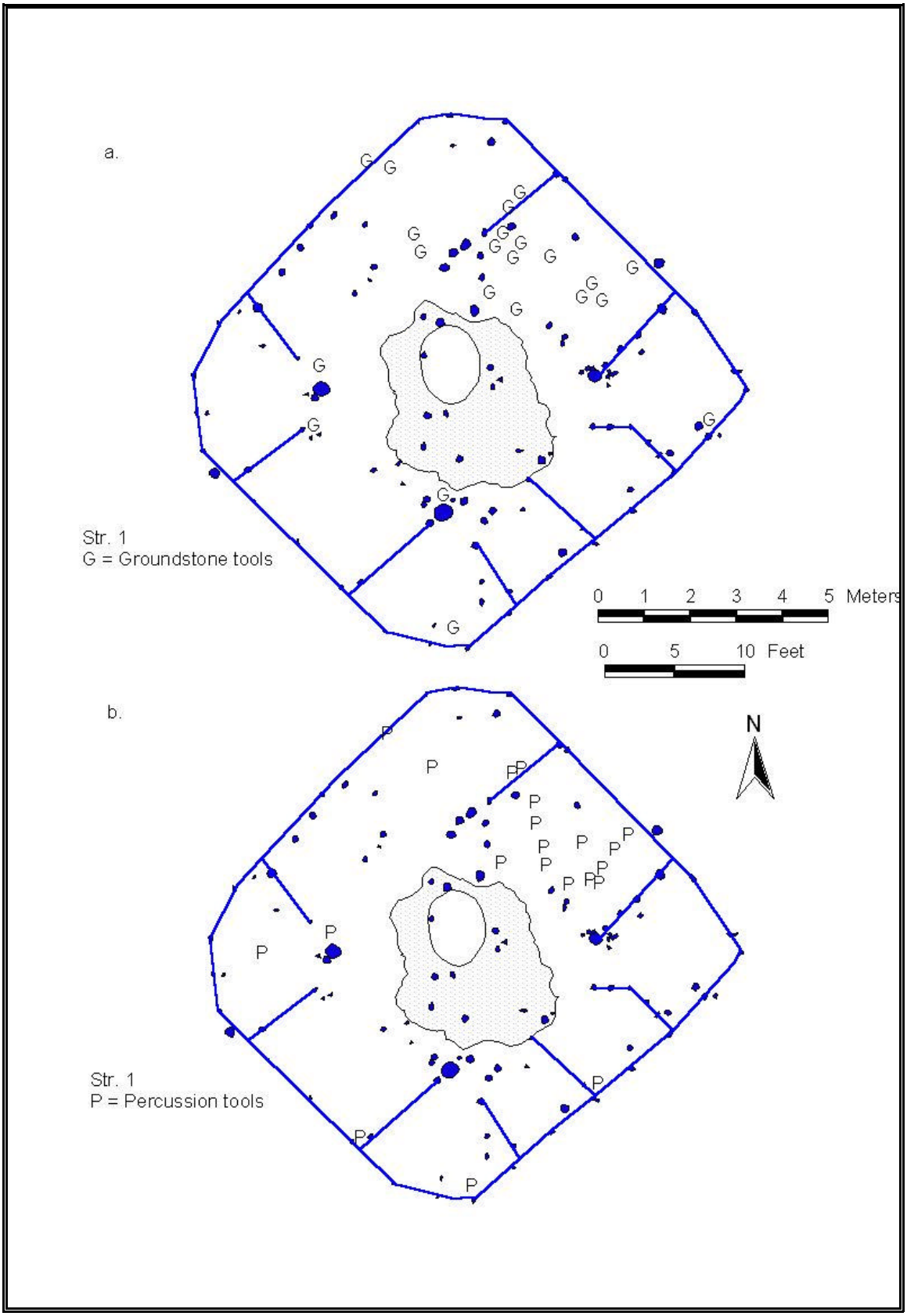


Figure 8.3 - Structure 1; a. groundstone tools; b. percussion tools

parent material of a limestone disc found in the south corner. A stone pipe fragment was recovered from the northeast compartment of Structure 1.

Several pieces of stones and minerals commonly used for pigment in the prehistoric Southeast were recovered from different areas of Structure 1 (Fig. 8.4). Pieces of hematite (red) and graphite (black) were found in the northeast compartment. Two worked pieces of graphite and several small fragments of magnetite were found in the southwest compartment and near the south central support post.

Botanical Materials

Corn kernels were recovered from a few areas of the structure (Fig. 8.5a). The bulk of the kernels are found along the southern-most partition wall of the southwest compartment in association with a ceramic bowl. Small amounts of kernels were identified in the northeast compartment and in the north corner. Minute amounts (x<0.1 g) were recovered in flotation samples from the west corner. Fragments of corn cobs were recovered in several areas of Structure 1 (Fig. 8.5b). The largest quantities were identified from flotation samples near or within the north corner and northeast compartment. Corn kernels found in the northeast compartment may have come to rest there after adhering to cobs that were stored or placed in the area. Other areas include near the west corner and northern-most side of the southwest compartment, near and in the east corner, and in the south corner.

Hickory nut shell fragments recovered from flotation samples were sorted into four size classes: > 11.5 mm, 11.4 - 5.5 mm, 5.4 - 2.5 mm, and < 2.5 mm. The distribution of each size class is as follows. Large pieces of hickory nut shell (> 11.5 mm) are found in several areas of the structure (Fig. 8.6a). Substantial concentrations are found in the west corner, along the southern-most partition wall demarcating the southwest compartment, within the northern-most southeast compartment, and just outside the east corner. The heaviest concentrations were recovered near or within the northeast and northwest compartments, along the edge of the north side of the central floor space.

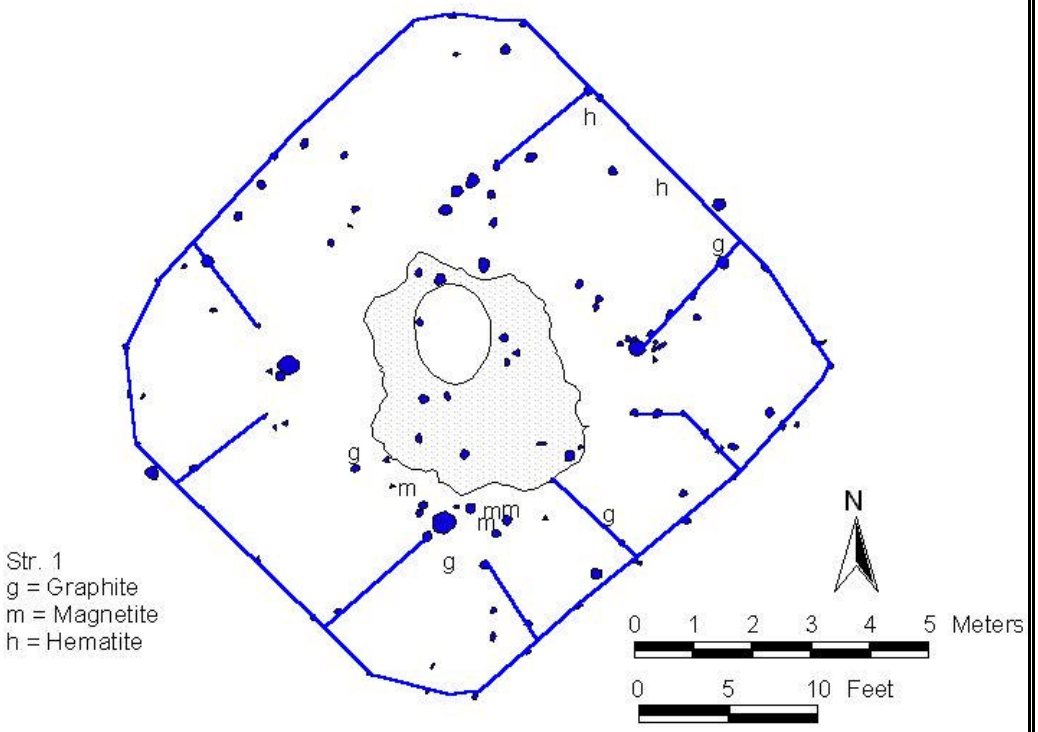


Figure 8.4 - Structure 1, pigment minerals

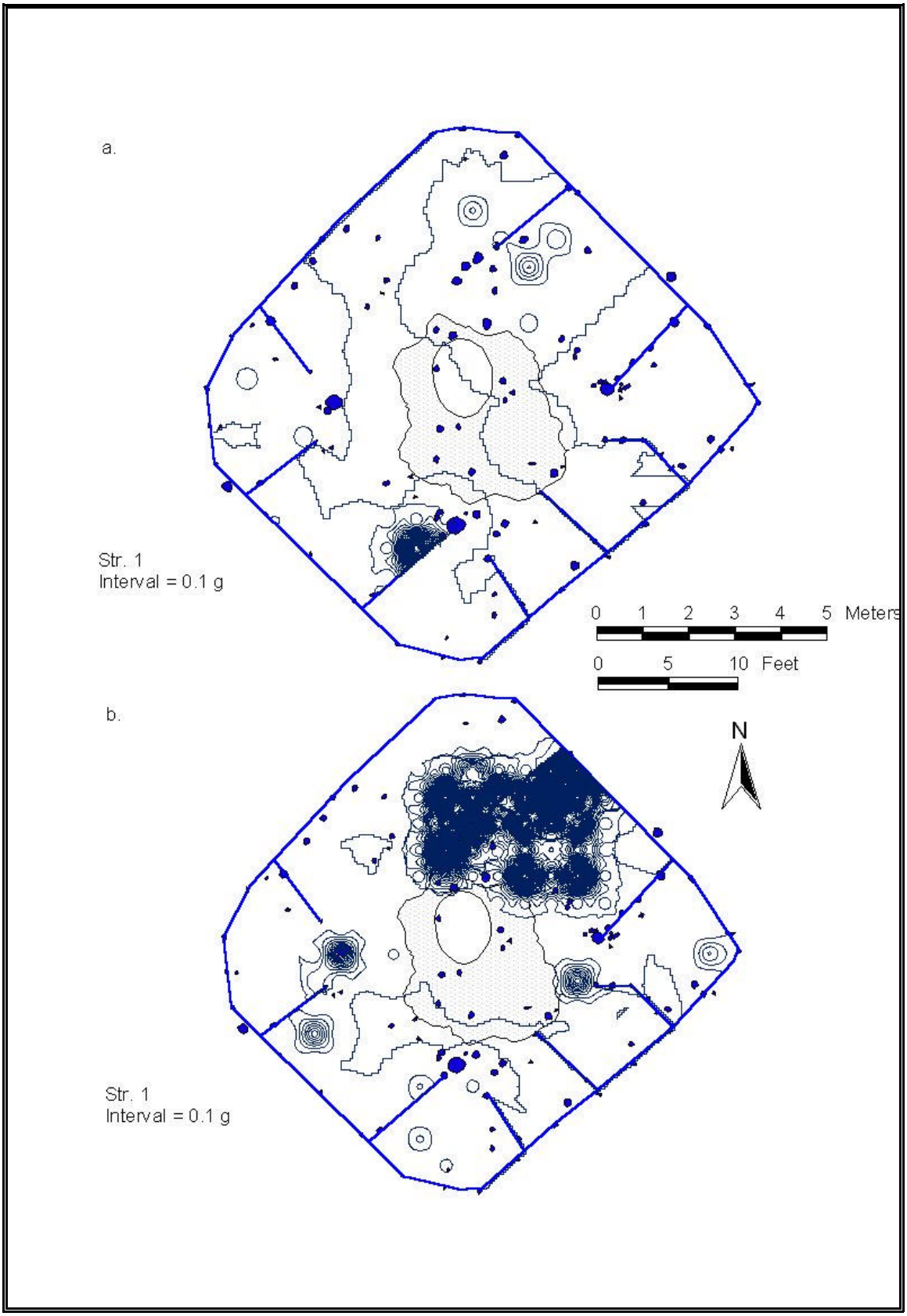


Figure 8.5 - Structure 1, maize distribution; a. kernels; b. cob fragments

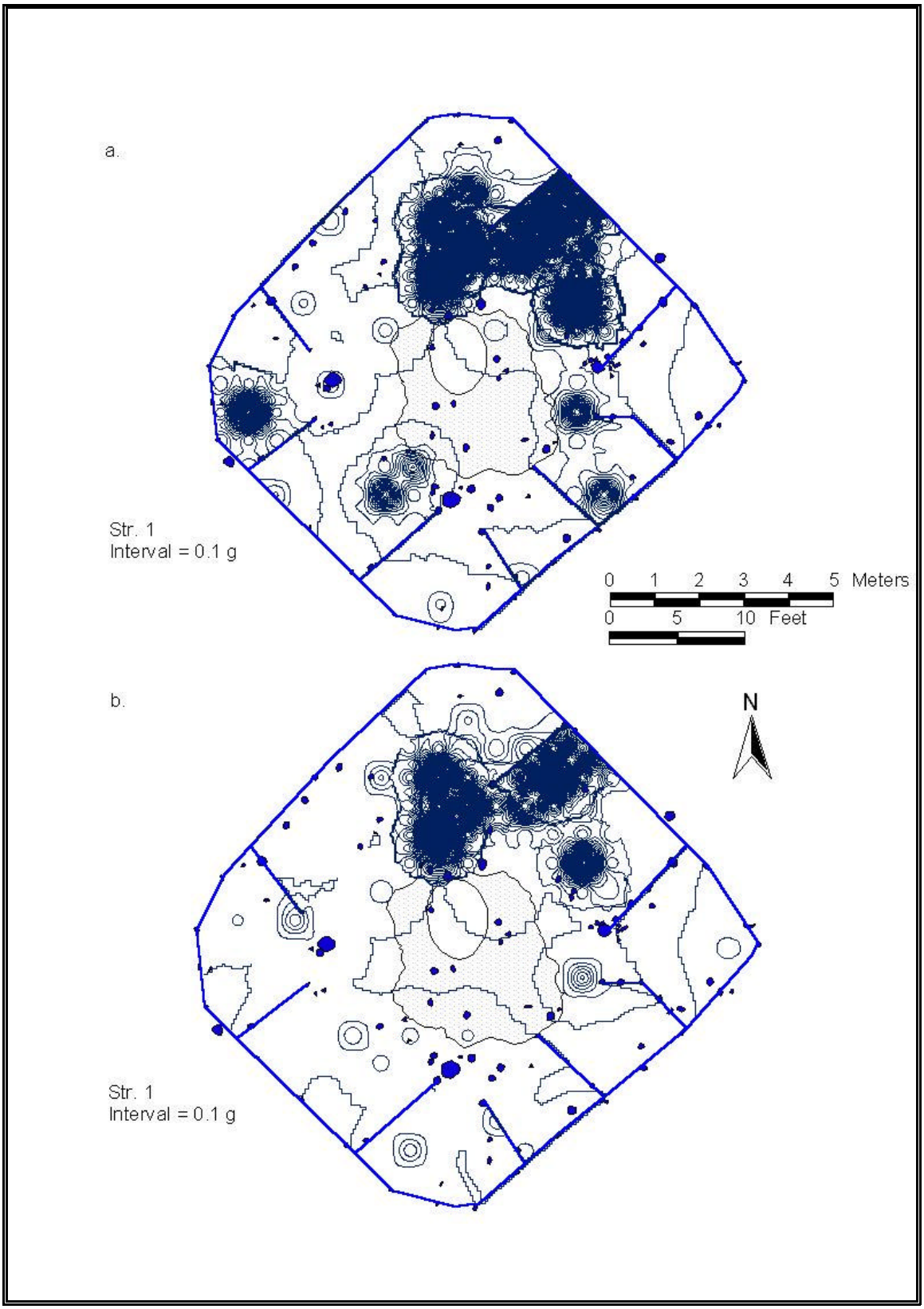


Figure 8.6 - Structure 1; a. hickory > 11.5 mm; b. hickory 11.4 - 5.5 mm

Hickory nut shell fragments of the 11.4 - 5.5 mm size class generally conform to the pattern found in the > 11.5 mm class, though in smaller quantities (Fig. 8.6b). Hickory fragments of the 5.4 - 2.5 mm size class also follow this pattern, though in lesser quantities in the areas outside the east corner and in the south corner (Fig. 8.7a). The greatest quantities were identified from flotation samples near or within the northeast and northeast compartments. Hickory fragments of the < 2.5 mm size class are found concentrated outside the northeast compartment only (Fig. 8.7b).

Acorn shell fragments are found in the northern-most corner of the northeast compartment (Fig. 8.8a). A whole acorn was recovered with some shell fragments in the northern-most southeast compartment. Walnut and butternut were identified from samples across the northern half of the structure, but are most concentrated in the northern-most corner of the northeast compartment (Fig. 8.8b). Seeds were analyzed from several different species but are combined here for ease of distribution analysis. Seeds were recovered from two broad areas of the structure (Fig. 8.8c). The first is near or within the northwest and northeast compartments. The second area is along the southwest edge of the central hearth area, extending just inside the southwest compartment. Seeds from plum, passion flower, grape, beans, and pokeweed were found in these areas. Two species contributed the bulk of the weight to these distributions. Honey locust and persimmon were identified in large quantities from both areas. It should be noted that the mass of corn kernels and the persimmon seeds were recovered near two bowls, suggesting the two plant foods were either temporarily stored there or placed there for consumption.

Faunal Materials

Remains of white-tailed deer are found in varying amounts in many of the peripheral areas of Structure 1 (Fig. 8.9a). They are more greatly concentrated in several areas, however, including near three of the central support posts, in the northeast compartment, in the west corner, and in the southern-half of the southwest compartment. Deer bones are found in smaller amounts in the north, east, and south corners, the southern-most southeast

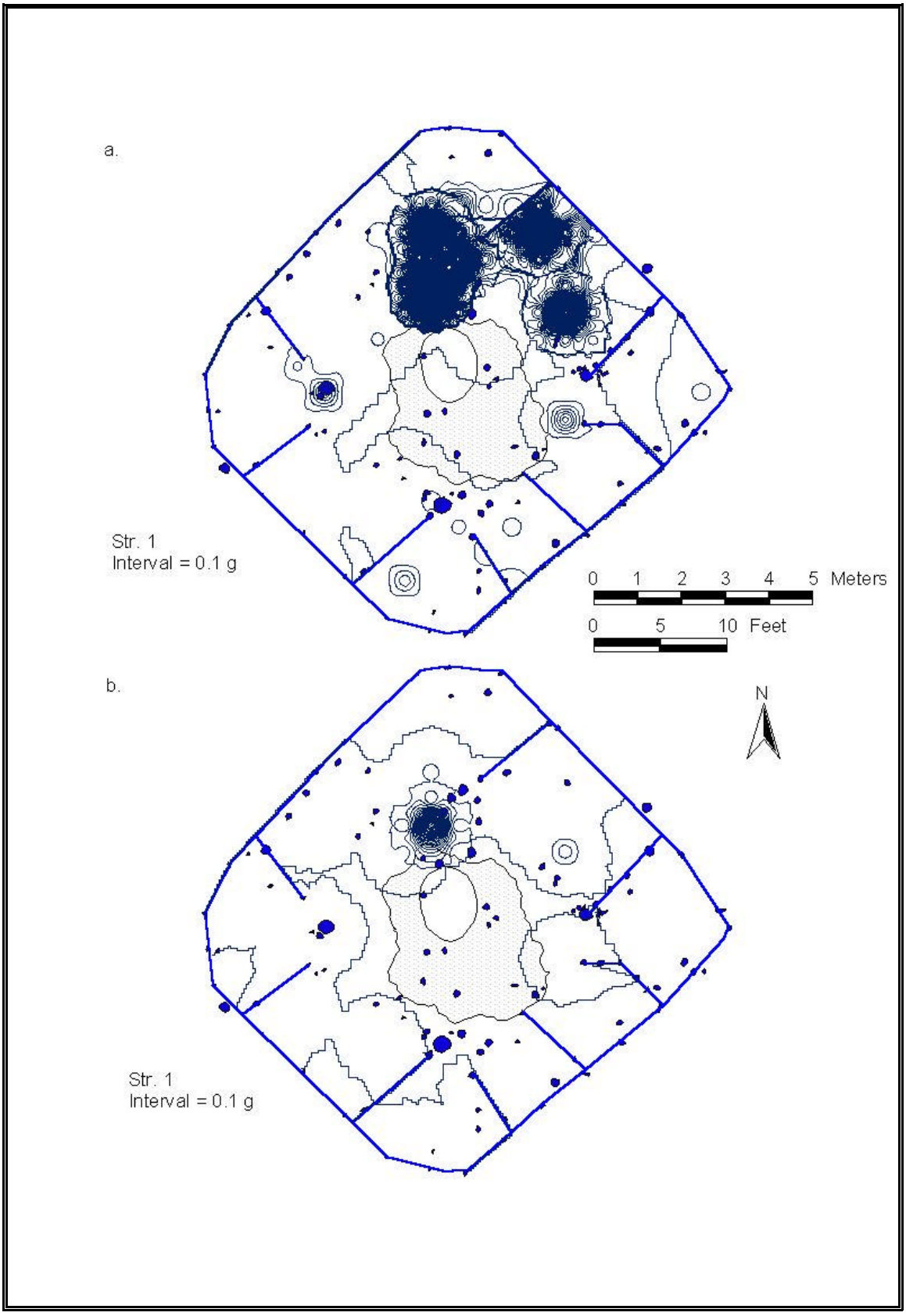


Figure 8.7 - Structure 1; a. hickory 5.4 - 2.5 mm; b. hickory < 2.5 mm

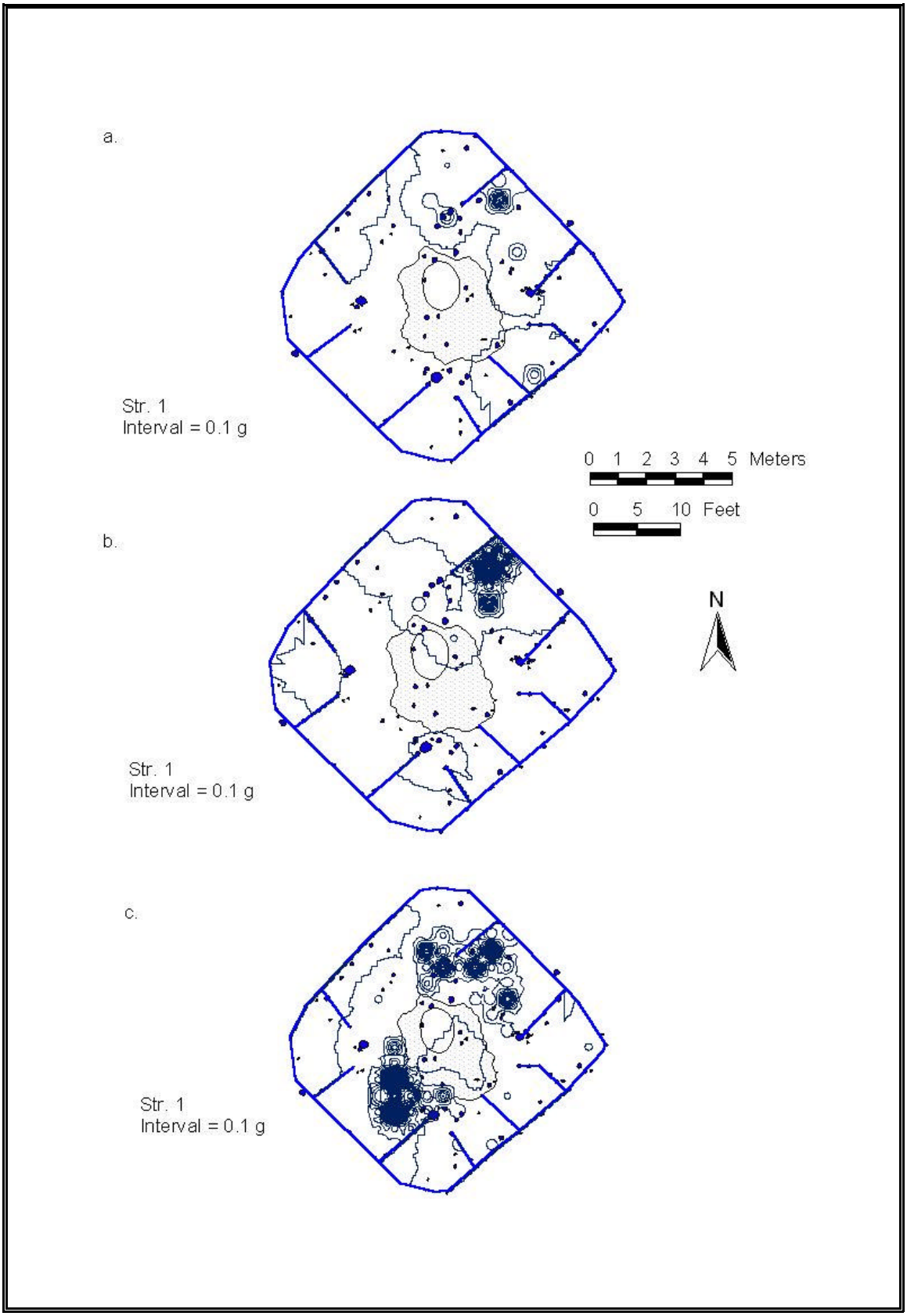


Figure 8.8 - Structure 1; a. acorn; b. walnut and butternut; c. seeds

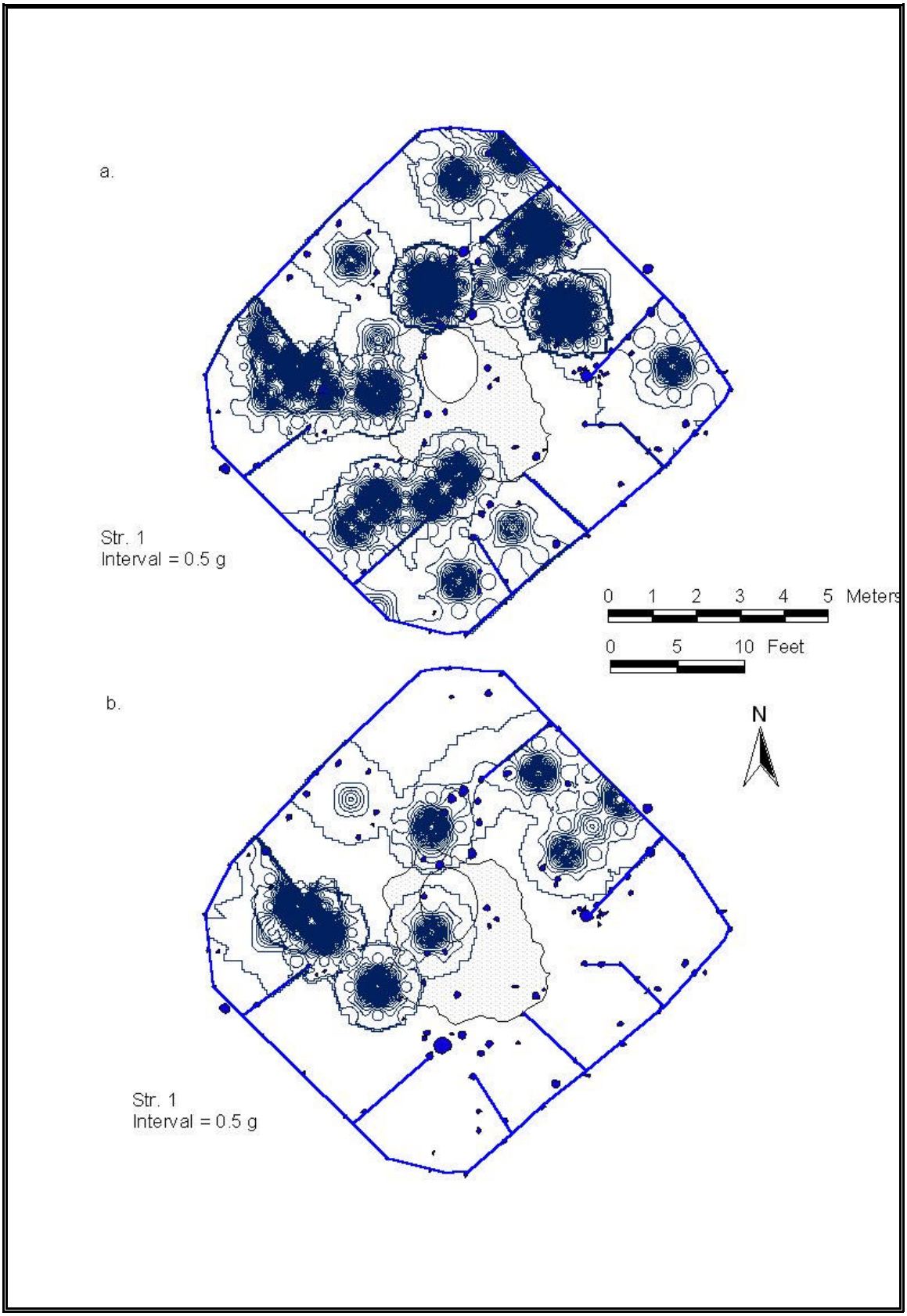


Figure 8.9 - Structure 1; a. deer; b. bear

compartment, and the northwest compartment. The edges of the central hearth area have deer remains where noted above, but the center area and east side are clear.

Bear faunal remains are found in more limited areas than deer, but there are areas of overlap (Fig. 8.9b). The greatest amount of bear bone was recovered from the west corner and on the southwest edge of the central hearth area in front of the southwest compartment. Smaller amounts are concentrated near two central support posts, in the northeast compartment, and in an area immediately southwest of the hearth.

A small number of identifiable mammal faunal remains were recovered to the north and south of the central hearth area (Fig. 8.10a). These species include: opossum, raccoon, river otter, canine, and rodents. Unidentifiable mammal remains were recovered from the entirety of Structure 1, but larger concentrations can be found in the northeast compartment and near central support posts (Fig. 8.10b).

Remains of several species of turtles were recovered from many areas of Structure 1 (Fig. 8.11a). These include box, slider, map, painted, and unidentified turtles. The largest amount of turtle bone is found in the west corner. Smaller amounts were identified in the northeast, northwest and southern-most southeast compartments, around the central hearth area, in the north and east corners, and along the exterior wall in the south corner and southwest compartment.

Remains of birds were recovered in small amounts from the west corner, northwest compartment, southwest compartment, and outside the east corner (Fig. 8.11b). Fish elements, including those from catfish and freshwater drum, were identified in the west corner, and in minute quantities ($x < 0.1$ g) in the northwest and northern-most southeast compartments (Fig. 8.11c). Non-poisonous snake elements are found in and outside the west corner, and in the northwest compartment (Fig. 8.11d). Unidentifiable aquatic shell was recovered near two central support posts, and along the exterior wall in the southern corner of the southwest compartment (Fig. 8.12a).

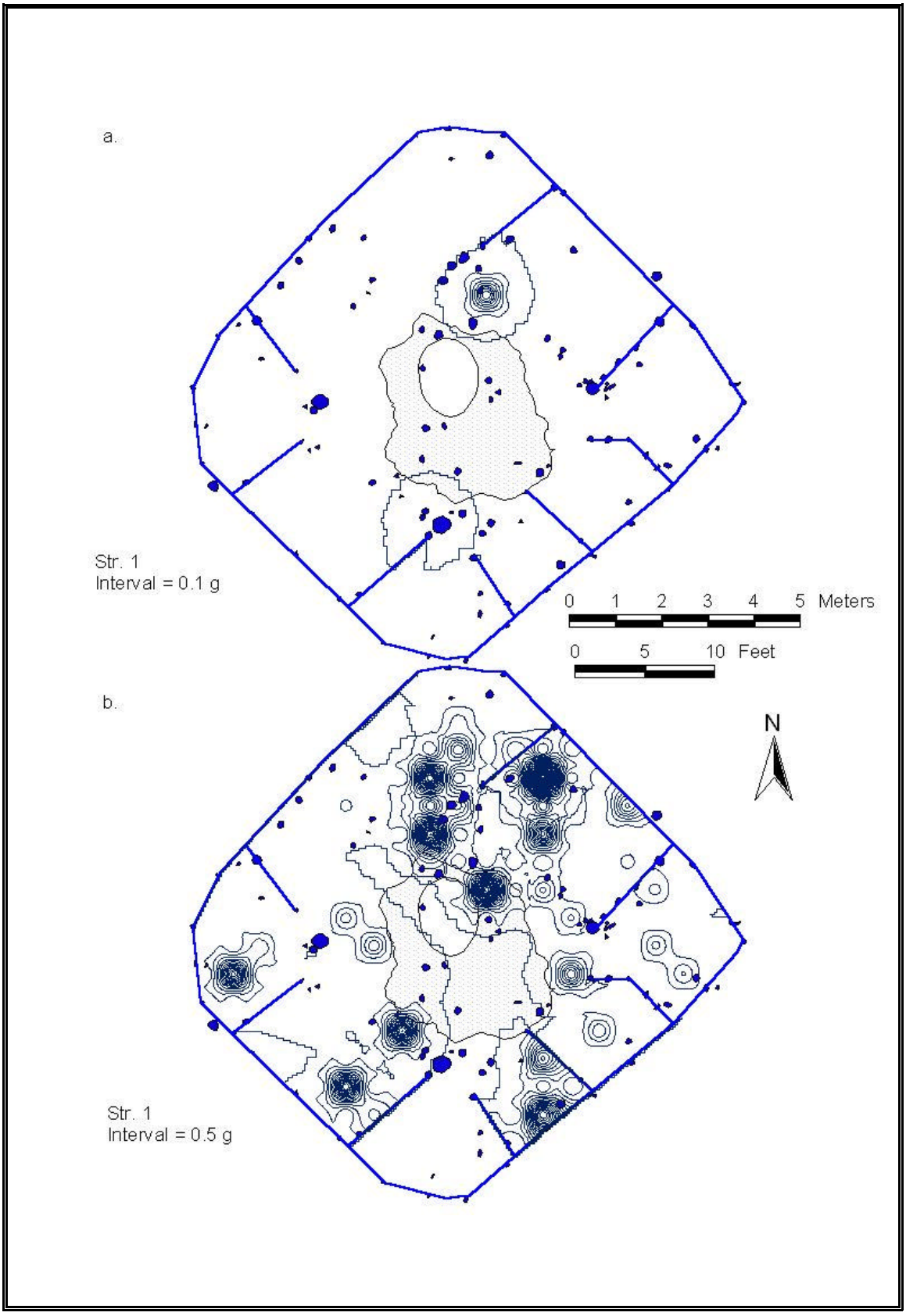
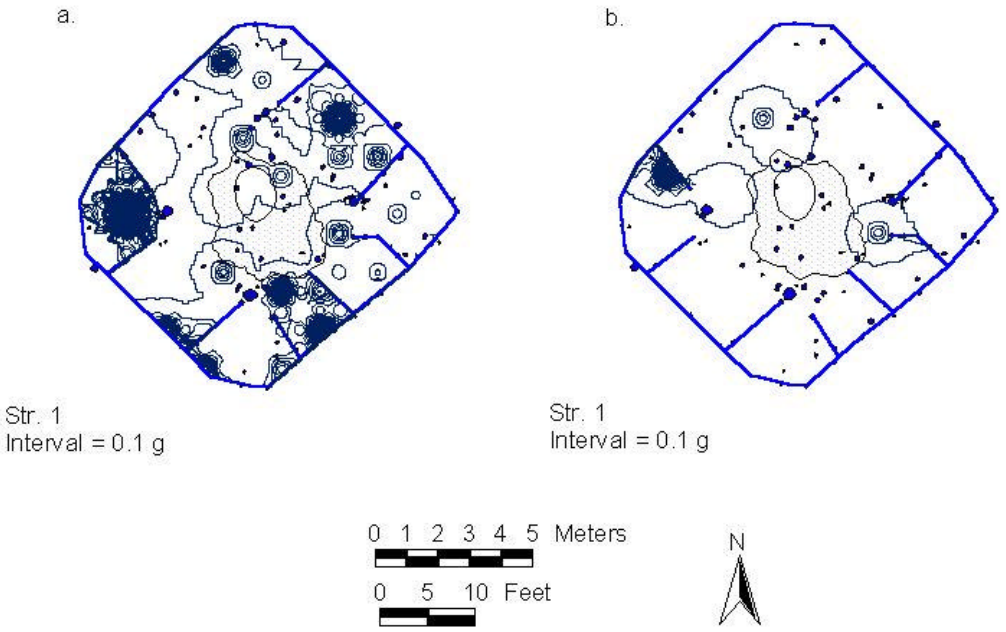


Figure 8.10 - Structure 1; a. identifiable mammal; b. unidentifiable mammal



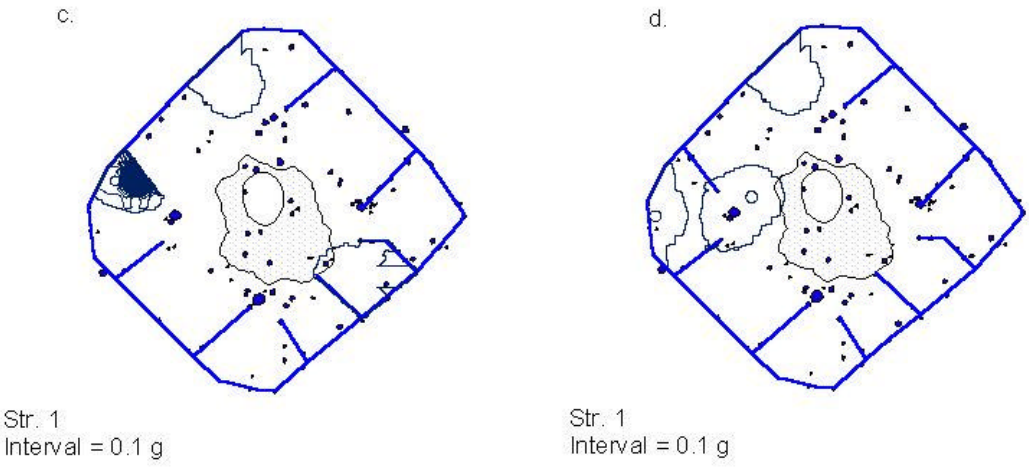


Figure 8.11 - Structure 1; a. turtle; b. bird; c. fish; d. snake

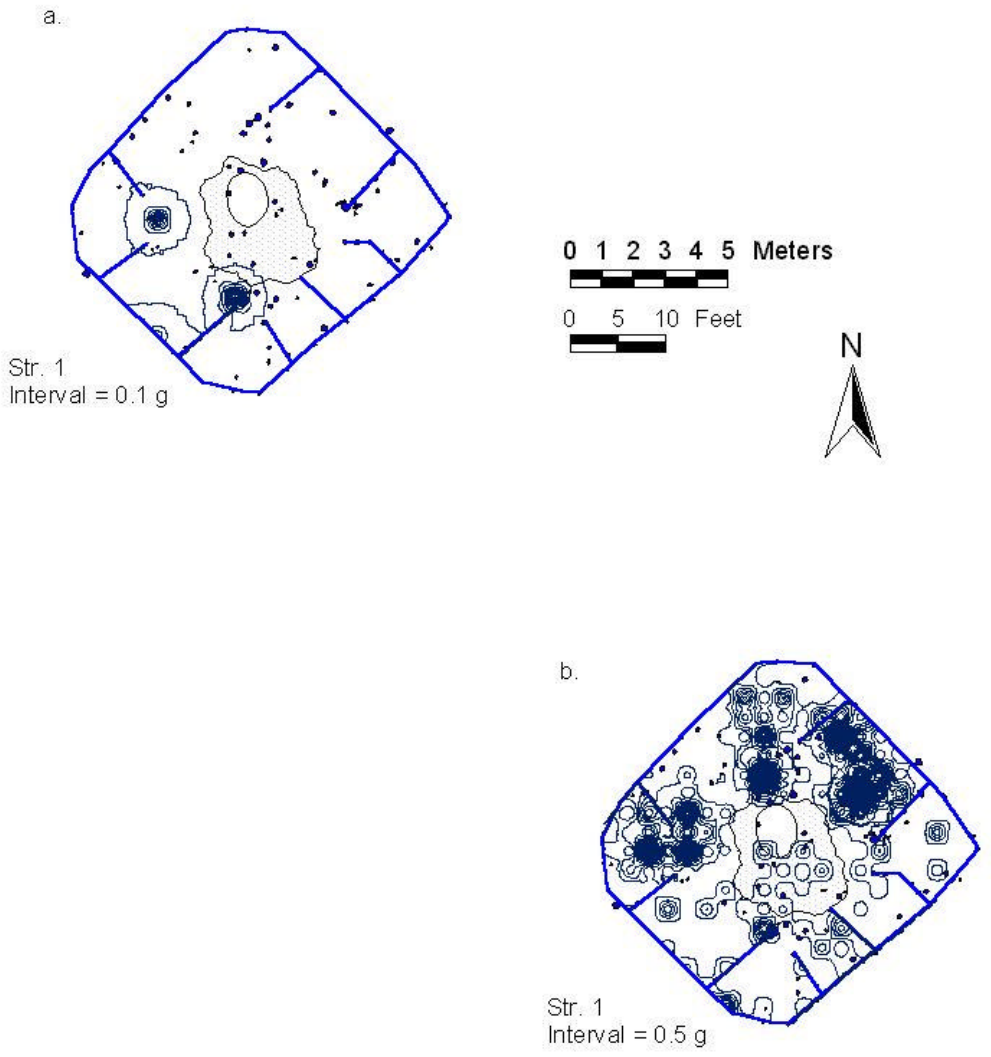


Figure 8.12 - Structure 1; a. shell; b. unidentifiable bone

Unidentifiable faunal remains generally conform to the pattern of artifact distribution for known species (Fig. 8.12b). Areas where unidentifiable remains were recovered include the northeast compartment, around the perimeter of the central hearth area, and in the west corner. Smaller amounts were also recovered in the northwest and southwest compartments, southern-most southeast compartment, and the south corner.

Worked Bone

Two worked pieces of bone were found in the southwest compartment (Fig. 8.13). These were fragments of bone hairpins. Although the two pieces do not cross-mend it is likely that they came from the same hairpin. Several deer skull fragments with the antlers cut off (see Chapter 7) were also found in the southwest compartment. Fragments of antler were recovered in flotation samples from the entrance to the east corner. These three pieces cross-mend and may represent the remains of an antler pressure-flaker.

Structure 2

The reader is encouraged to review Chapter 5 regarding the discovery and excavation of Structure 2. Below, the term "compartment" denotes an area demarcated by partition walls while the term "sector" denotes an area for which there is no evidence of partition walls but some are suspected nonetheless.

Ceramic Materials

Ceramic materials are found in a relatively uniform distribution over the entire floor of Structure 2 (Fig. 8.14a). The few notable exceptions include large amounts of sherds (n>40 in some flotation samples) recovered in the southeast compartment, and smaller pockets (n>20) of sherds in the west corner, and northwest and northeast sectors. Six whole or partial Dallas Incised and Plain vessels recovered from the floor of Structure 2 (n=3 of each type). Lamar vessels include pinched rim jars (n=4), carinated bowls (n=6), flaring rim bowls (n=2), and plain and complicated stamped jars (n=1 and 2 respectively). Whole or partial vessels are found around the periphery of the central hearth area (Fig. 8.14b). Other

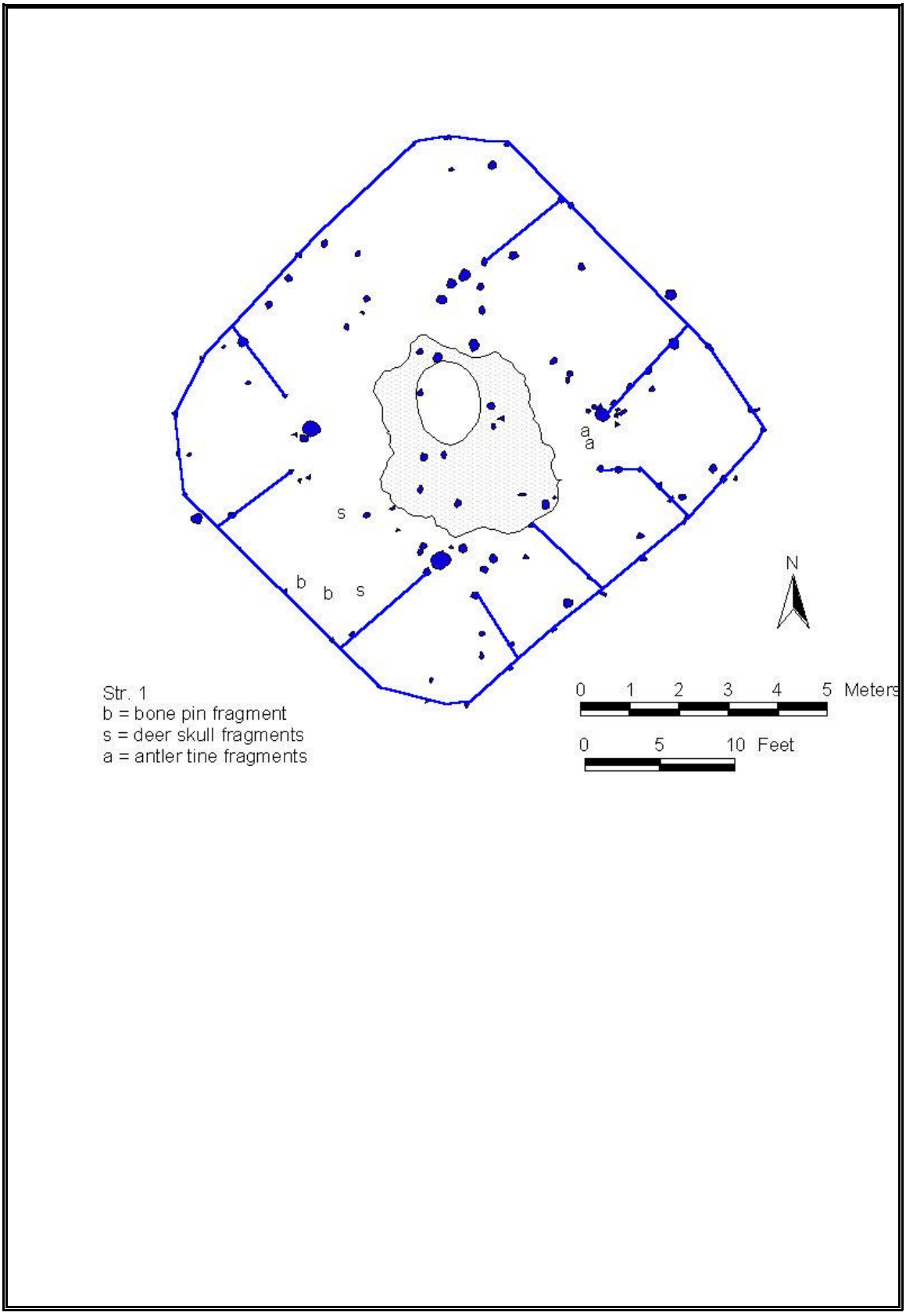


Figure 8.13 - Structure 1, worked bone

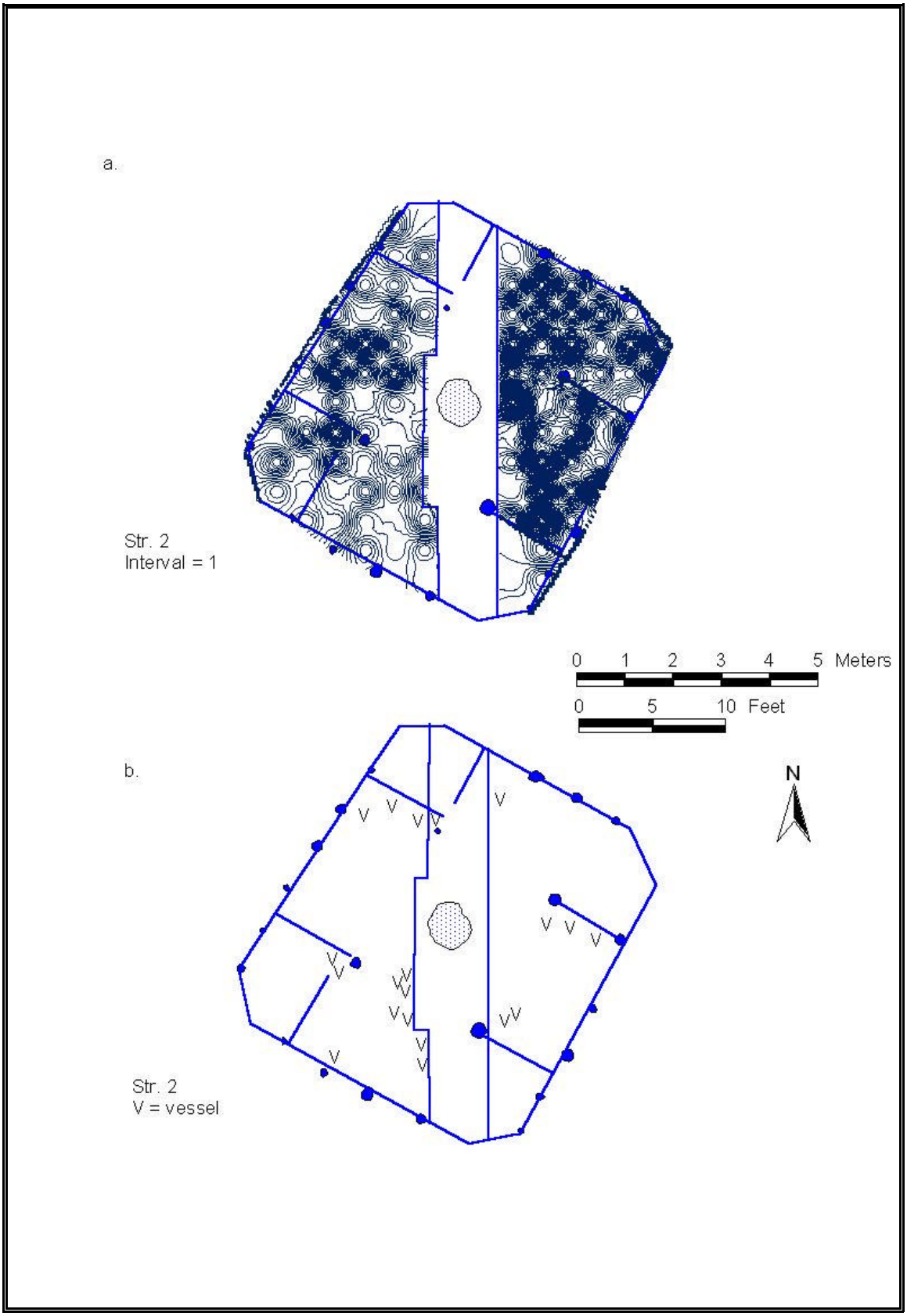


Figure 8.14 - Structure 2, ceramic distributions; a. sherds; b. vessels

vessels are found in the southeast compartment, the northeast and southwest sectors, and north and west corners.

Ceramic discs (n=4) were recovered in limited quantities from Structure 2. Two are found to the west of the exploration trench near the north corner. A third is found east of the hearth, and a fourth is located in the northeast sector.

Ceramic pipe fragments (n=5) were recovered from the eastern half of the structure. Three appear to be in the southeast compartment, one is near the east corner, and a fifth was found near the west central support post.

Four clay beads were recovered from Structure 2. Two are in the southeast compartment, one is in the southwest sector, and the fourth is in the north corner.

Worked Lithic Materials

Flake debitage is found over most of the floor of Structure 2 (Fig. 8.15a). A large concentration of flakes was recovered in the southeast compartment, and in two areas of the southwest sector. Other locations of flake debitage concentrations include the northwest sector, and the north and west corners.

PP/K, unifacially flaked tools, and bifacially flaked tools are found in several areas of Structure 2, though, as in Structure 1, they are primarily concentrated in one specific area of the structure (Fig. 8.15b). Forty-two pp/k, scrapers, and other flaked tools were found in the southeast compartment. Four flaked tools were found in the south corner. It is possible that some or all of these four came from the southeast compartment as the proposed partition wall bisects the flotation units. Isolated pp/k were found in the southwest sector, northwest sector, and northeast sector.

The single flaked tools outside of the southeast compartment include a small, black chert, Archaic Big Sandy pp/k in the southwest sector, a black chert, Mississippian pp/k (one face is a fracture plane) in the northwest sector, and a small, gray chert, Mississippian pp/k with a broken tip in the northeast sector. The flaked tools in the south corner include two

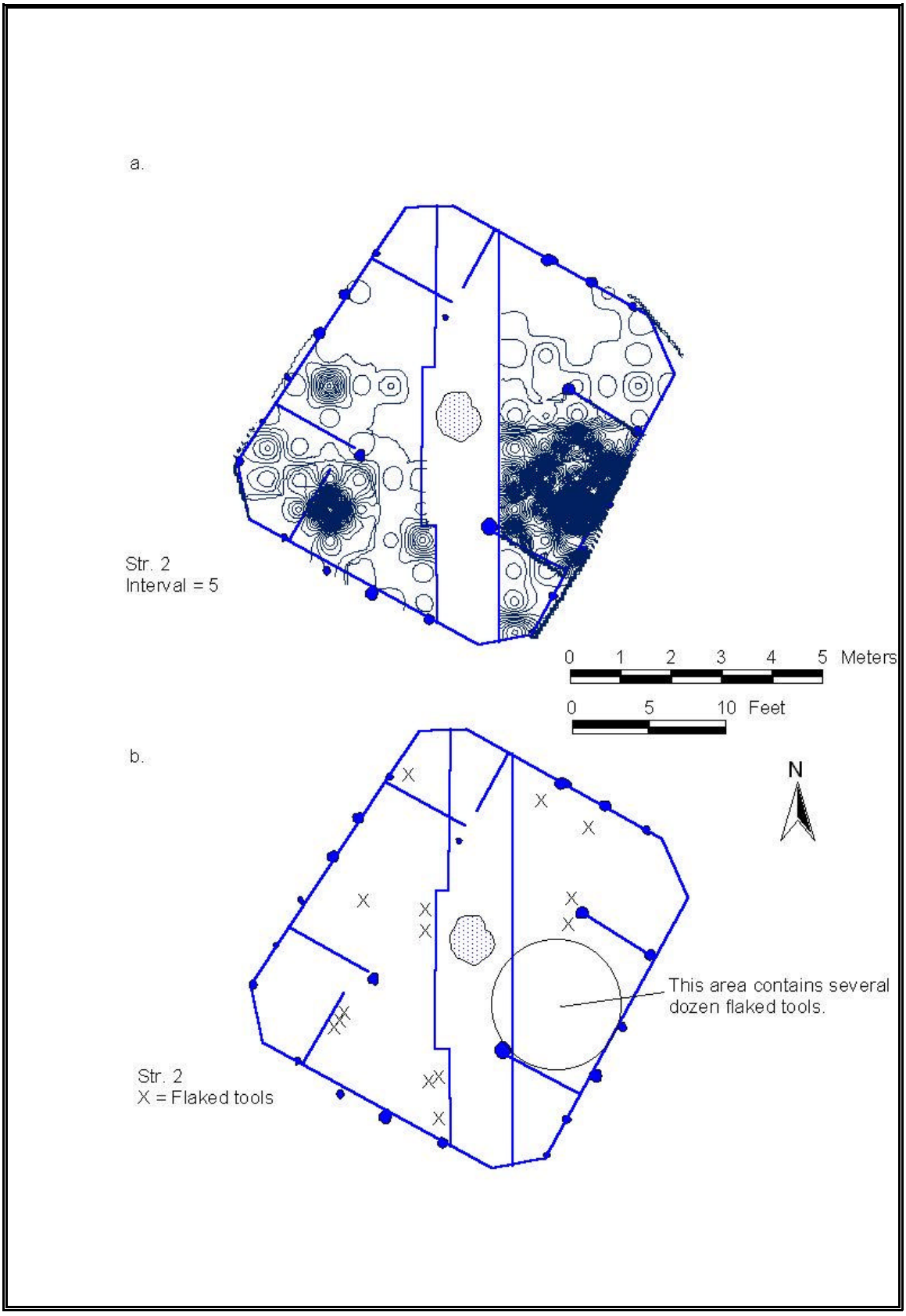


Figure 8.15 - Structure 2, lithic distributions; a. debitage; b. pp/k and other flaked tools

chert Mississippian pp/k bases (one black, one gray), a re-worked black chert Mississippian pp/k, and a black and gray chert preform.

The flaked tools in the southeast compartment include two formal crescent-shaped, black and gray chert scrapers, a long, narrow unifacial end scraper, and three re-worked Mississippian pp/k. The re-worked Mississippian pp/k have semi-circular notches flaked out of one side. These modified points could have been used as scrapers. Ten “leaf”-shaped pp/k or fragments, and 18 chert Mississippian isosceles pp/k or fragments were also recovered. Four chert Mississippian pp/k were also found. These have one side that has been retouched into a slightly curved knife or blade shape. Two preforms were recovered, as well as a quartz Woodland period pp/k. This latter curated point appears to have been retouched.

Twenty-three cores are listed in the original artifact tally sheets and distribution maps, but were not relocated for analysis by the author. Cores are larger parent pieces of rock from which flakes are removed for tool production. All but five of these are recorded in the southeast compartment. Of the remaining five, two are west of the hearth and three are in the southwest sector.

Additionally, several pp/k fragments were noted on distribution maps but could not be found in the collections. The distribution of these missing tools follows the pattern discussed above and does not alter my interpretations.

Grinding and percussion stone tools are found almost exclusively in the eastern half of Structure 2. As with the flaked stone tools, many are found in the southeast compartment. A wide variety of abrading tools, including irregular cobbles with extensive abraded edges, stone discs of various sizes and textures, and worn stone tablets, were found in Feature 98 and surrounding excavation units (Fig. 8.16a). Two milling stone fragments and a mano were found near the north central support post in the exploration trench. Other grinding tools were found in the southwest sector, near the back wall of the northeast sector, and to the northeast of the hearth.

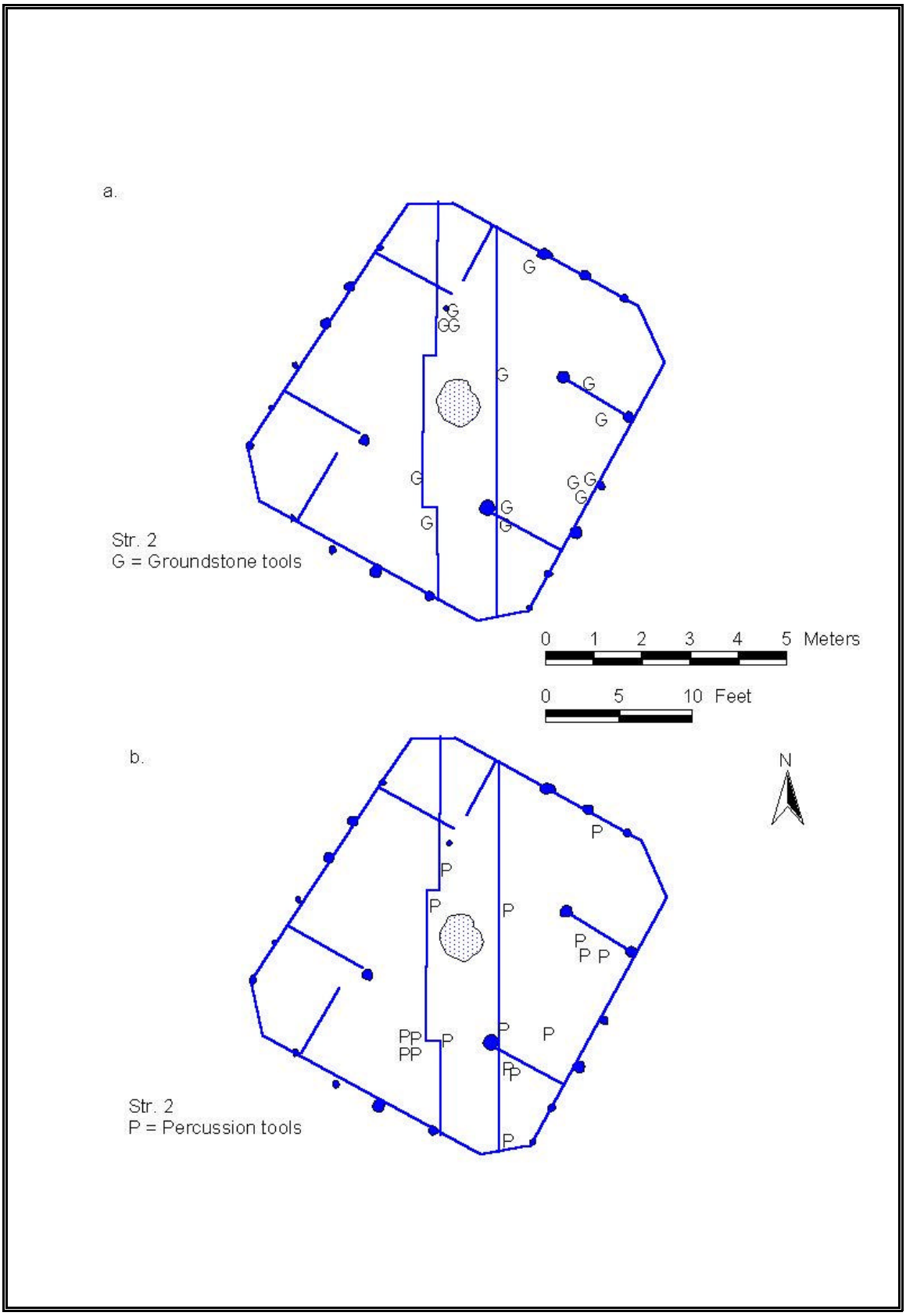


Figure 8.16 - Structure 2; a. groundstone tools; b. percussion tools

Percussion tools, including a variety of pitted cobbles, celts, anvils, and hammerstones follow the pattern of distribution discussed for grinding tools (Fig. 8.16b).

Botanical Materials

Corn kernels were identified in flotation samples from several areas of Structure 2 (Fig. 8.17a). Concentrations of kernels are found along the southern partition wall of the southeast compartment, in the northeast, northwest, and southwest sectors, and in the east and south corners. The amounts of kernels recovered from Structure 2 are much less than Structure 1, likely because of differential preservation of non-burned remains (Hally 1981).

Cob fragments generally conform to the pattern of distribution of corn kernels in the southern half of the structure (Fig. 8.17b). Larger amounts of cob fragments were recovered from the southeast compartment, northwest and southwest sectors, and north corner. Smaller amounts are found in the east corner and northeast sector.

As in Structure 1, hickory nutshell fragments were sorted into four size classes: > 11.5 mm, 11.4 - 5.5 mm, 5.4 - 2.5 mm, and < 2.5 mm. No fragments from the largest size class (> 11.5 mm) were recovered from flotation samples. Fragments 11.4 - 5.5 mm in size were identified in very limited quantities in the southeast compartment, the south corner, southwest sector, to the west-southwest of the central hearth area, and along the exterior wall in the northeast sector (Fig. 8.18a). Hickory shell fragments between 5.4 - 2.5 mm were recovered from the southeast compartment, southwest, northwest and northeast sectors, south corner, and around the periphery of the central hearth area (Fig. 8.18b). Shell fragments less than 2.5 mm generally conforms to the pattern of distribution of fragments larger than 2.5 mm (Fig. 8.18c). Notable quantities were recovered from the southeast compartment, and southwest and northwest sectors.

Acorn shell fragments are found across much of the floor of Structure 2, though again in limited quantities (Fig. 8.19a). Shell fragments were recovered from the east corner, southeast, northwest, and southwest sectors. Walnut and butternut shell fragments are found in small amounts in every sector and compartment, and in the south and east corners (Fig.

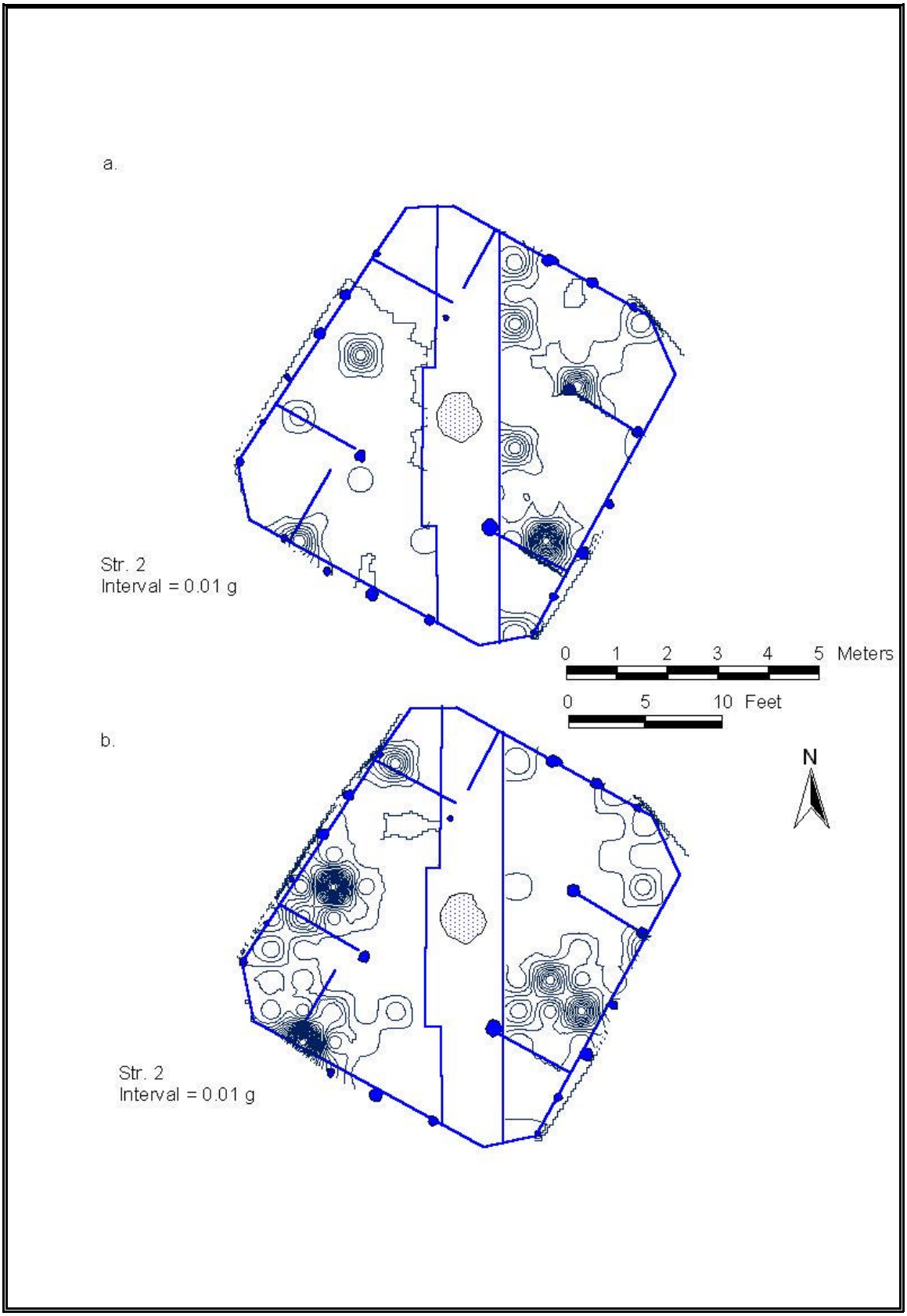


Figure 8.17 - Structure 2, maize distribution; a. kernels; b. cob fragments

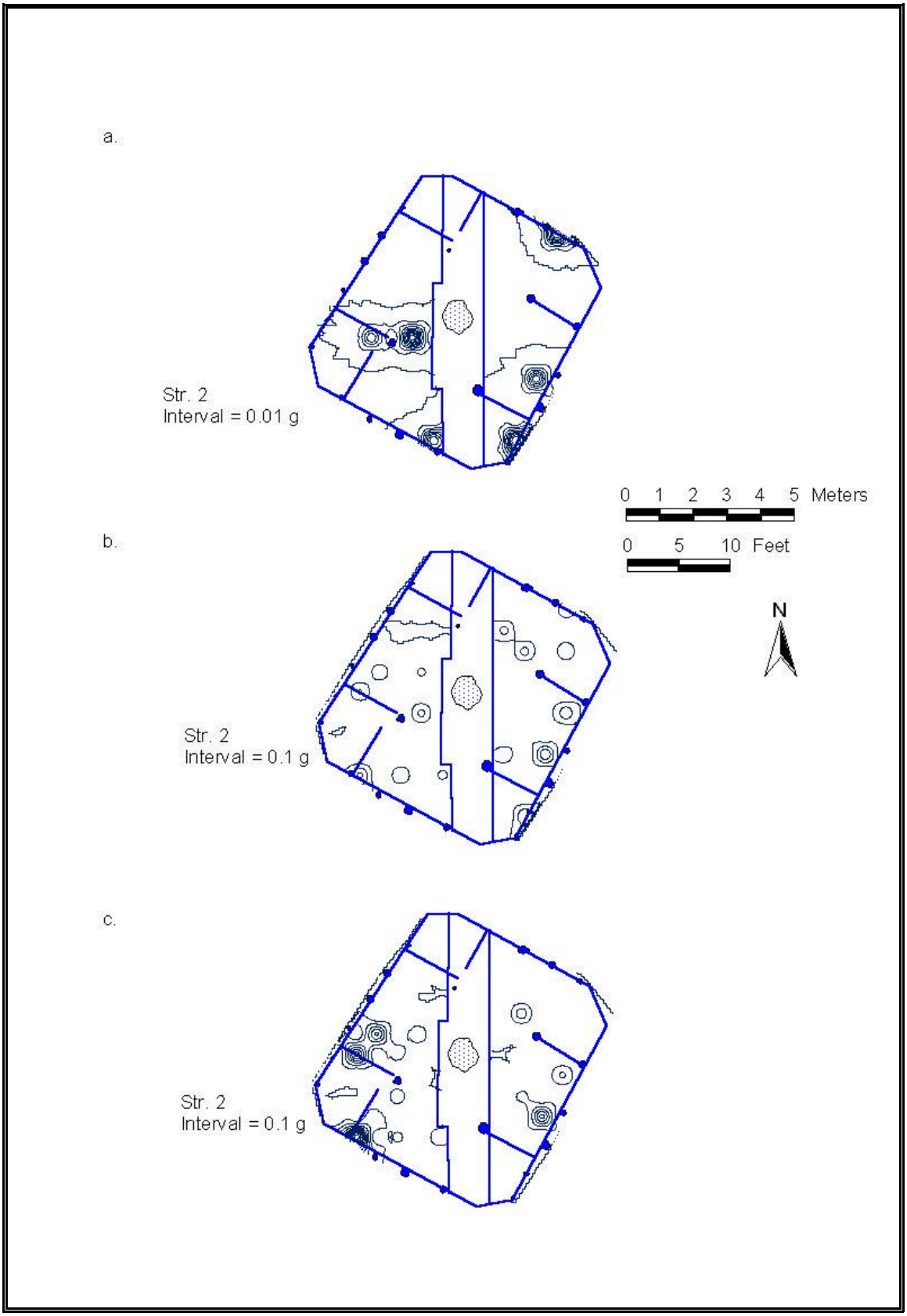


Figure 8.18 - Structure 2, hickory; a. 11.4 - 5.5 mm; b. 5.4 - 2.5 mm; c. < 2.5 mm

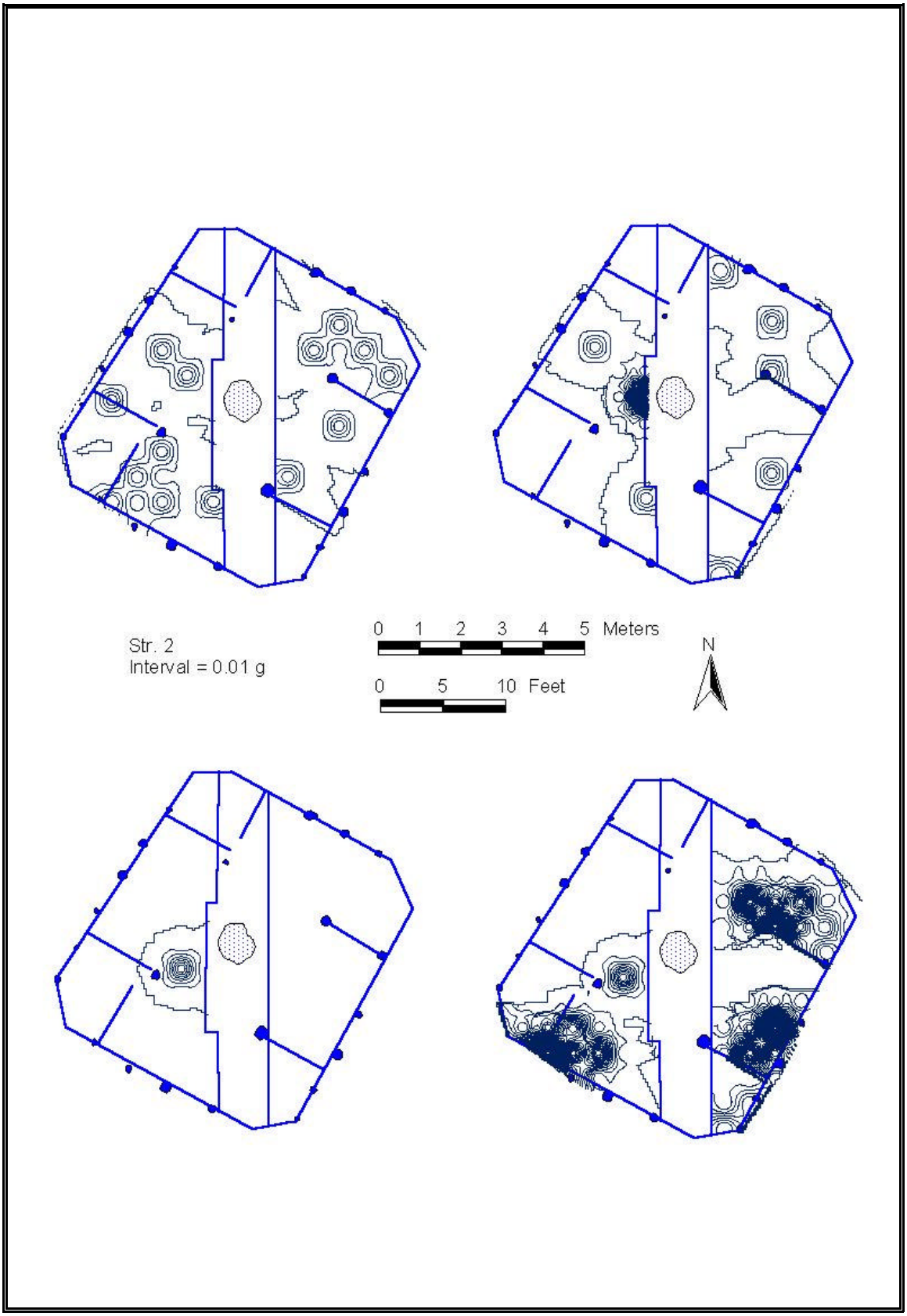


Figure 8.19 - Structure 2; a. acorn; b. walnut and butternut; c. seeds; d. unidentifiable

8.19b). A larger quantity of walnut and butternut shell fragments was identified in flotation samples to the west of the hearth, within the central hearth area. Seeds from several different plant species were identified from a flotation sample to the southeast of the hearth (Fig. 8.19c). These species include: bean, persimmon, honey locust, grape, passion flower, bear's foot, and other unidentifiable seeds.

Unidentifiable plant remains are concentrated in four main areas of Structure 2: the southeast corner of the southeast compartment, the southwest corner of the southwest sector, southwest of the central hearth, and in the north corner and northeast sector (Fig. 8.19d). Smaller amounts of botanical materials were identified in the south corner.

Faunal Materials

White-tailed deer was identified in flotation samples from several areas of Structure 2 (Fig. 8.20a). The largest quantities are found in the west corner and northern half of the southeast compartment. The concentration in the west corner is comprised largely of teeth. Other areas of concentrated deer remains include: the northwest sector, northeast sector, east corner, and along the eastern edge of the central hearth area.

As in Structure 1, bear faunal remains are found in more limited areas and amounts than deer (Fig. 8.20b). Bear was identified in flotation samples from the northwest sector, southeast compartment, and in more limited quantities in the northeast sector.

Mammal elements identifiable to several species were identified from samples in the southeast compartment and south corner (Fig. 8.21a). These species include: opossum, cottontail rabbit, common cotton rat, beaver, bobcat, and rodents. A single beaver incisor was identified in a sample to the northwest of the hearth. The bobcat and rat elements may have come from outside the structure as this sample is on the line of the proposed limit of the exterior wall. The species lists (Appendix A) differ from those published in the original site report (Hally 1980:572-573) as I have excluded elements from flotation samples that were not from within my proposed structure walls.

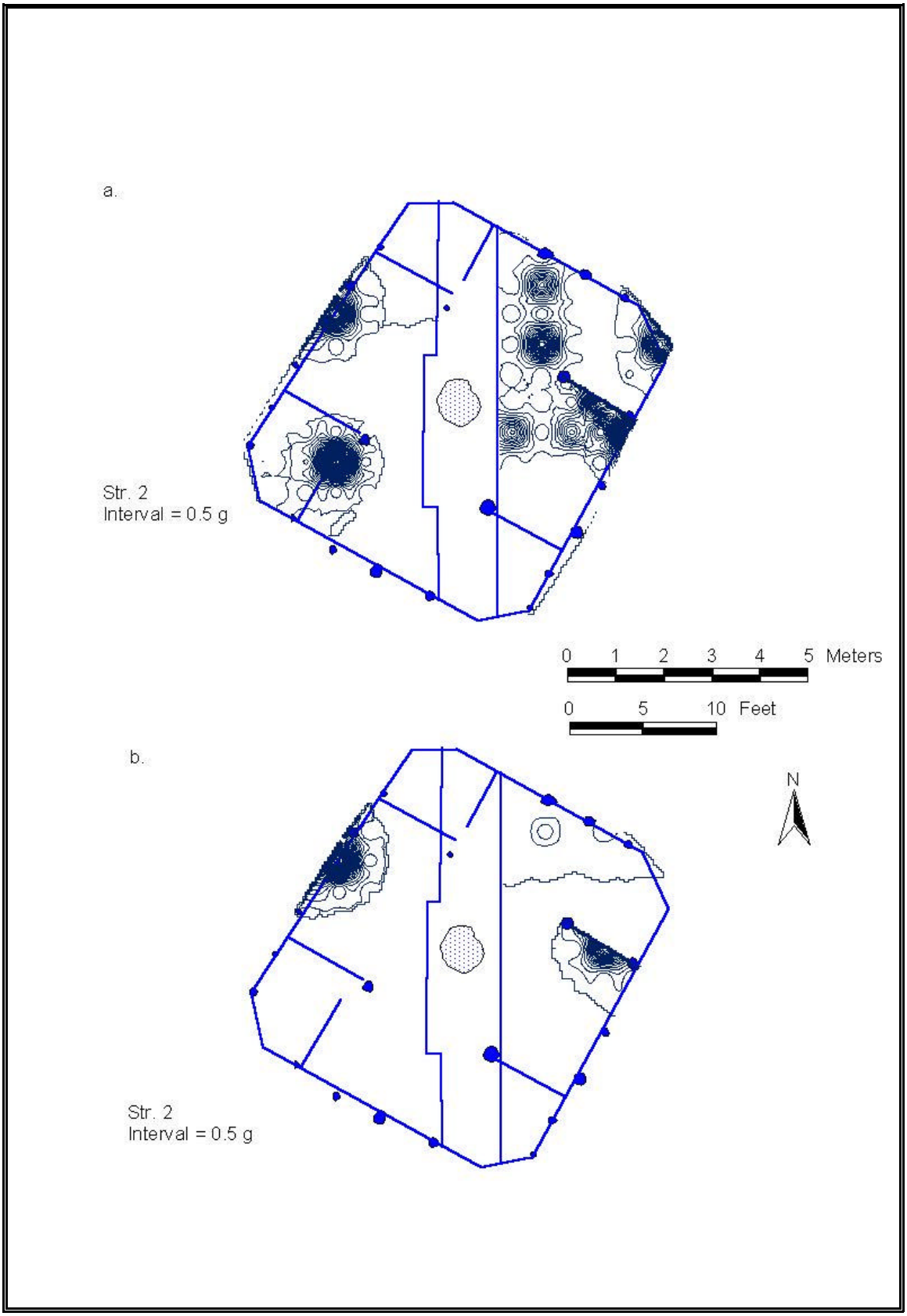


Figure 8.20 - Structure 2; a. deer; b. bear

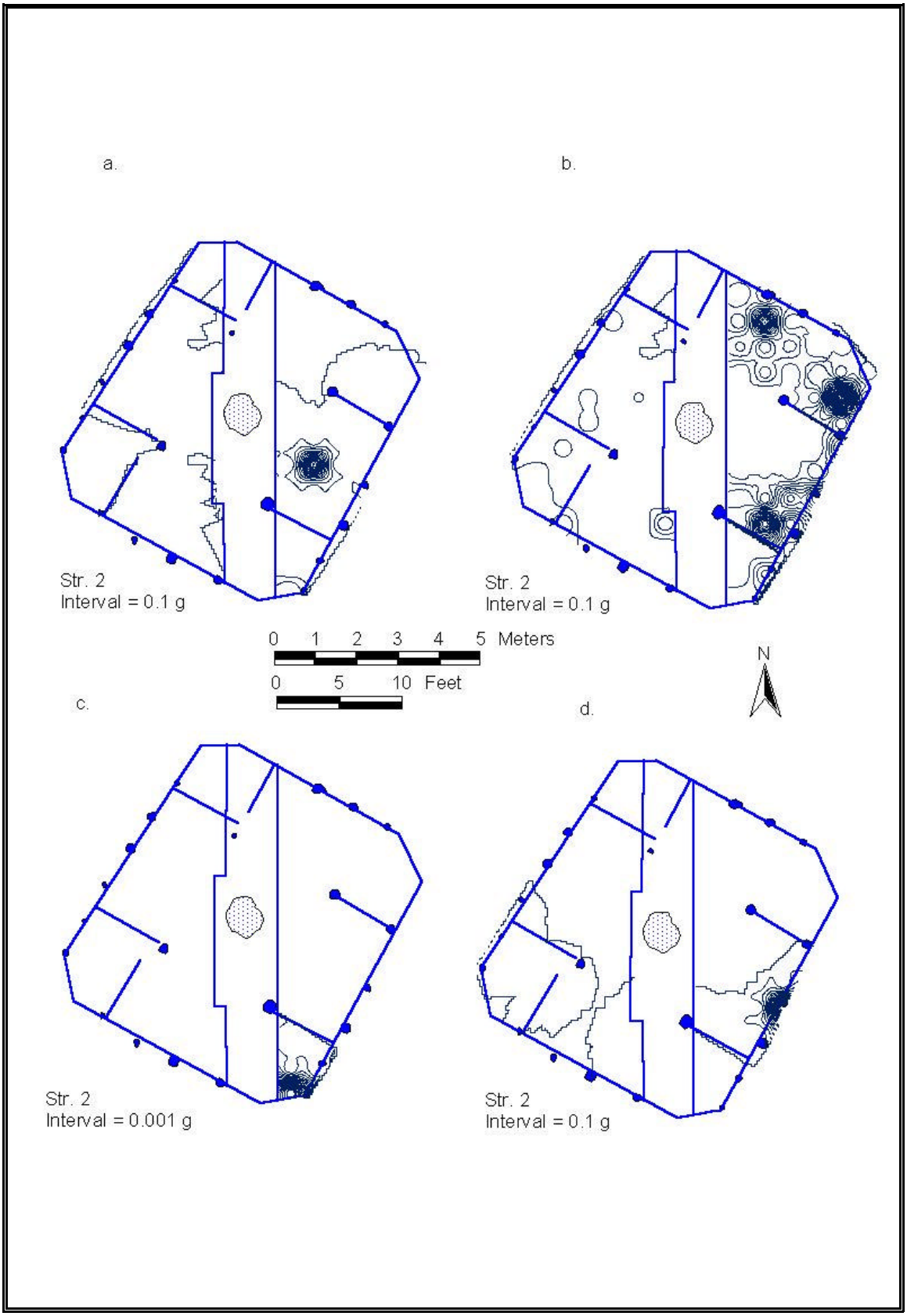


Figure 8.21 - Structure 2; a. identifiable mammal; b. turtle; c. bird; d. fish

Remains of several species of turtles were recovered from limited areas of Structure 2 (Fig. 8.21b). These include box, slider, map, painted, and unidentified turtles. The bulk of turtle elements were identified from the eastern half of the structure along exterior walls in the northeast sector, east corner, southeast compartment, and south corner. Scant amounts were found in comparable areas in the western half of Structure 2. A small concentration is also found south of the central hearth area.

Bird elements, including turkey, were identified from a flotation sample in the south corner (Fig. 8.21c). Fish, including catfish, redhorse sucker, freshwater drum, gar, and unidentifiable fish elements are found along the exterior wall of the southeast compartment (Fig. 8.21d). A small amount of bone from drum and redhorse (total weight < .5 g) was identified from a flotation sample in the east corner.

Poisonous and non-poisonous snake remains were identified in the southeast compartment and south corner, along the exterior wall (Fig. 8.22a). Aquatic shell is found in three areas of Structure 2: the southeast compartment, the southwest sector, and the south corner (Fig. 8.22b).

Unidentifiable mammal remains are found in flotation samples of much of the eastern half of Structure 2 (Fig. 8.22c). Other UID mammal elements are located in the northwest sector and west corner. Unidentifiable faunal remains were recovered from all areas of the floor with the exception of the north corner (Fig. 8.22d).

Structure 3

Ceramic Materials

As in the previous two structures, ceramic sherds are distributed across much of the floor of Structure 3 (Fig. 8.23a). The areas immediately around the central hearth are devoid of sherds, particularly to the north and south. Heavier concentrations of sherds were recovered from the southwest corner, south compartment, east compartment, and northeast corner. Sherds were also recovered in an area to the northwest of the central hearth area. Several partial vessels were recovered around the central hearth area, particularly along the

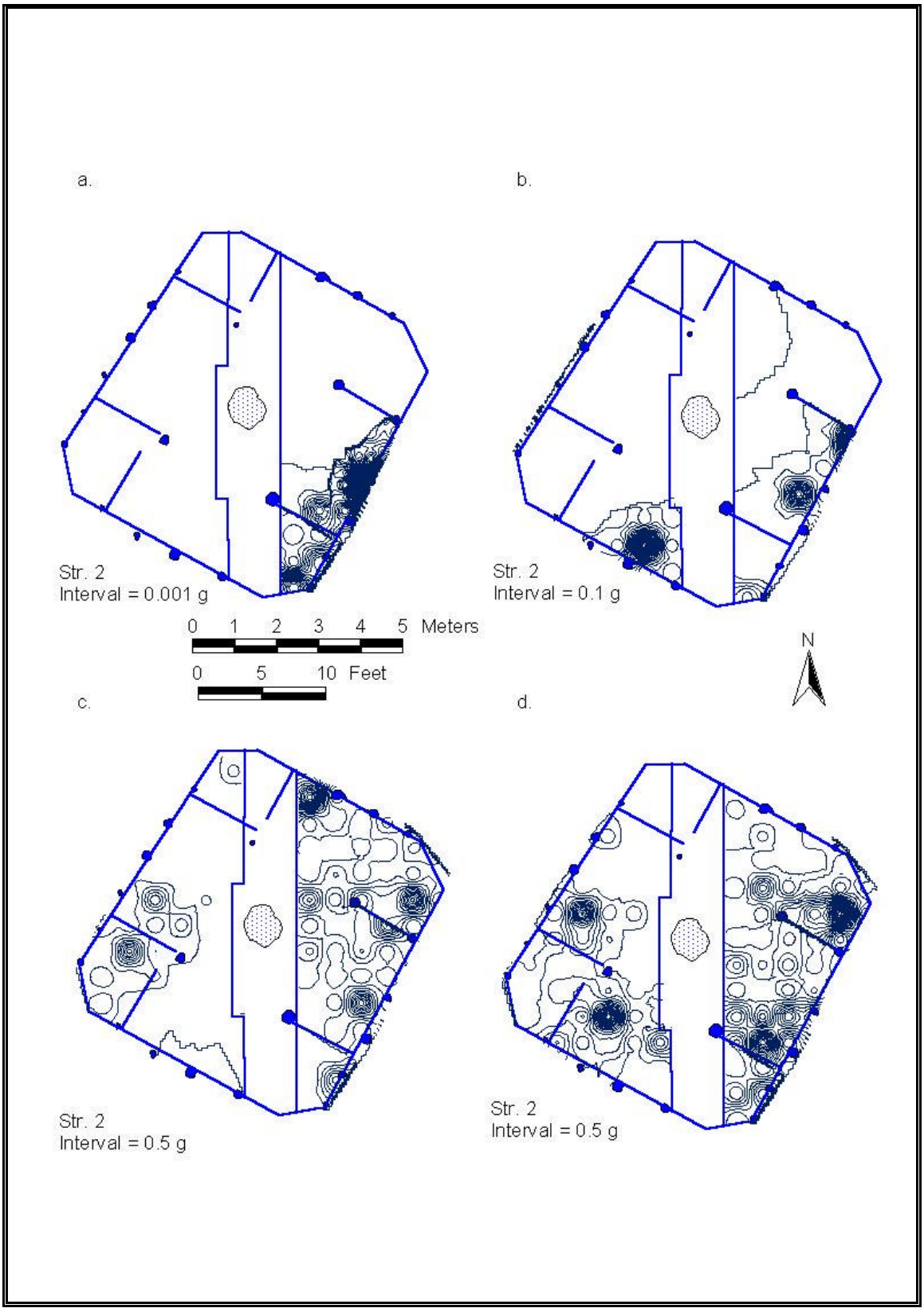


Figure 8.22 - Structure 2; a. snake; b. shell; c. unidentifiable mammal; d. unidentifiable bone

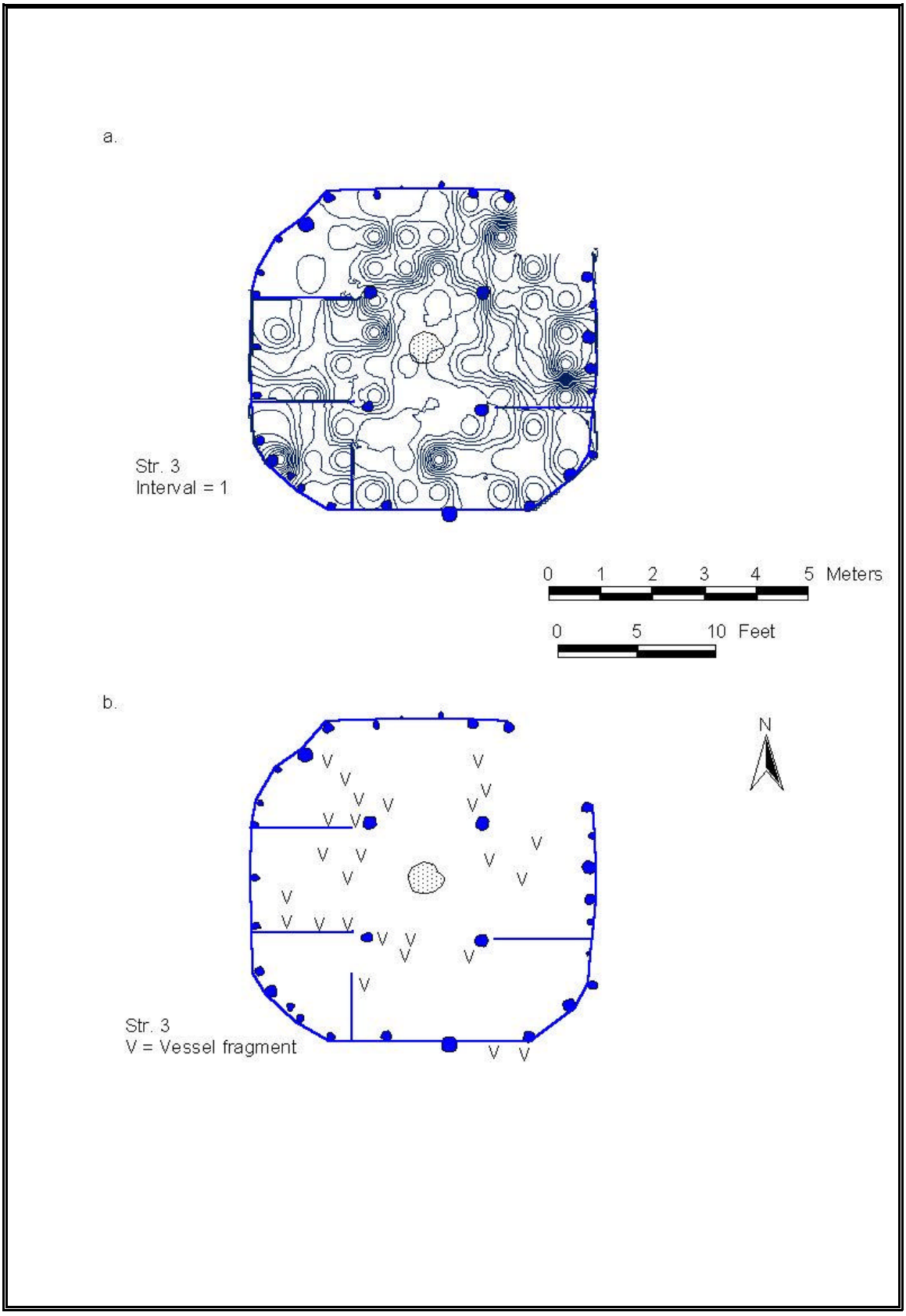


Figure 8.23 - Structure 3, ceramic distributions; a. sherds; b. partial vessels

western side (Fig. 8.23b). A few vessel fragments were identified in the north, east, and south compartments. The partial vessel assemblage is similar to those of Structures 1 and 2. The assemblage includes fragments of Dallas plain jars (n=2), Lamar incised carinated bowls (n=3, including 1 possibly outside structure), a Lamar carinated bowl with a pinched rim, Lamar pinched rim jars (n=4), and several Lamar complicated stamped partial vessels of unknown form. Most of these latter partial vessels are represented by only one or a few sherds. Two differences between the assemblage of Structure 3 and Structures 1 and 2 are the absence of any flaring rim bowls, and the absence of any complete vessels.

Ceramic discs (n=4) were recovered in the southeast and northwest corners, and the east compartment. Ceramic pipe fragments are located in the southwest and northwest corners, and the east compartment. A fourth fragment was found just south of Structure 3, but may have been in floor deposits as the flotation sample fell inside and outside the proposed structure wall alignment. Clay beads (n=3) were recovered from flotation samples in the southwest and southeast corners, and the east compartment near the exterior wall.

Worked Lithic Materials

Flaked stone is found over the entirety of the floor of Structure 3, with the exception of the central hearth area (Fig. 8.24a). Other than a small amount of flakes in the northeast corner, the area framed by the central support posts is largely devoid of lithic flakes. Heavier concentrations of flakes occur in the west, north, and east compartments, and at the interface of the south compartment and the southeast corner. It is not known whether a partition wall was located at this interface. The distribution of other artifact classes suggests that there was a wall similar to the partition wall at the interface of the south compartment and southwest corner. Flaked stone deposits extend far south of Structure 3, suggesting that some materials found in the southeast corner may be from the earlier structure (Structure 3B) (see Hally 1980:298-299), as is discussed above (Chapter 5).

The distribution of pp/k appears to heavily favor the southeast corner in the area of Feature 28, but this may not be completely accurate (Fig. 8.24b). The eight pp/k from lot

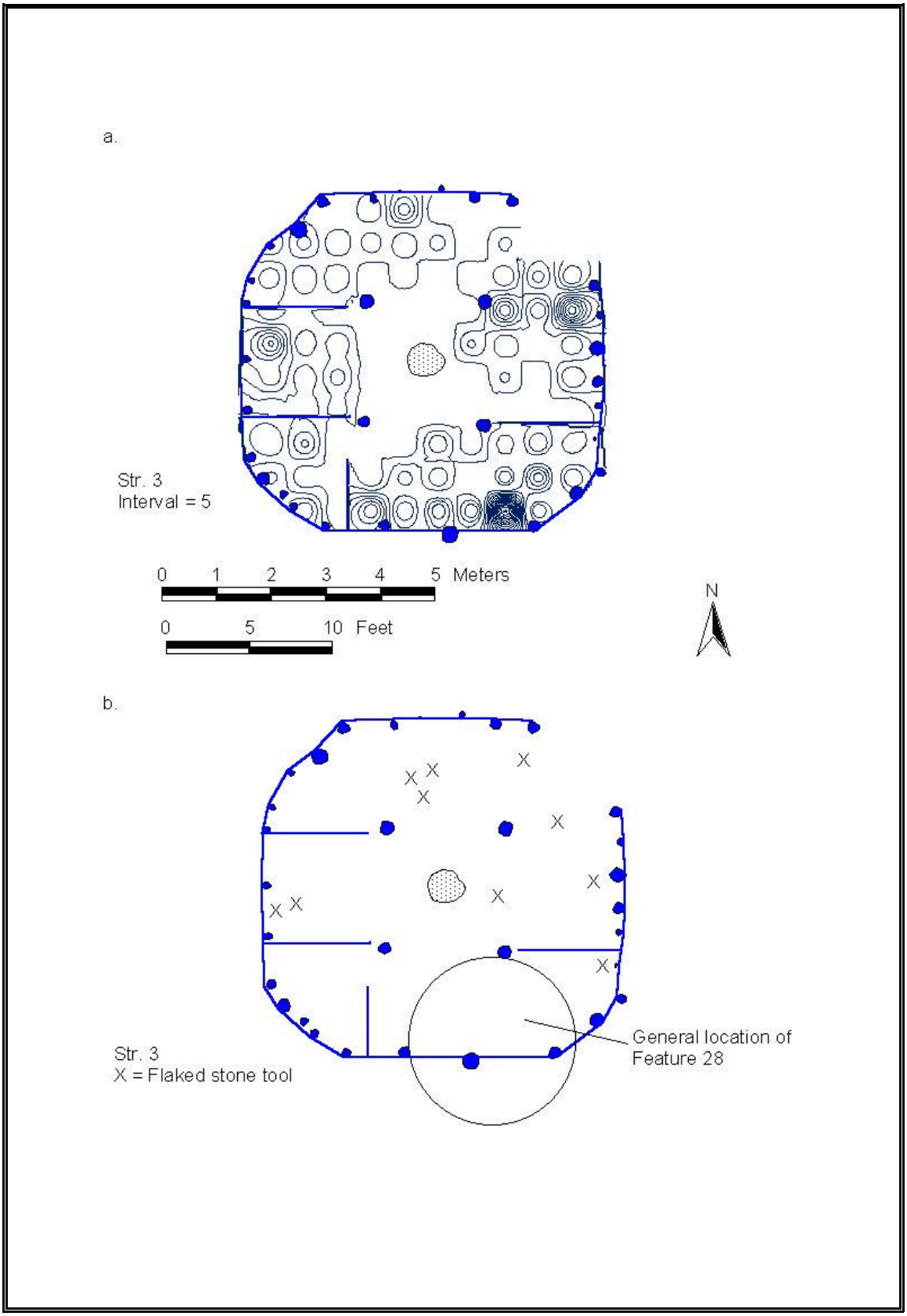


Figure 8.24 - Structure 3, lithic distributions; a. debitage; b. pp/k and other flaked tools

1989 are likely from Level B. There are also many pp/k and preforms from lots in the southeast corner and south compartment associated with Feature 28, and many more from lots south of the structure. Other lithic tools and preforms were recovered in squares crossed by the structure wall. Only three flaked tools were relocated in the collections for reanalysis. The pp/k were removed from the collections for a seminar on lithic analysis in 1976, during which time the provenience information was lost. The pp/k that were relocated include a black chert, Mississippian pp/k base (possibly a "leaf" form), a black chert, Mississippian "leaf"-shaped pp/k with a broken tip, and a gray chert, Mississippian pp/k (one face is an original fracture plane). Bifacial preforms were noted in the northeast corner and the east compartment. A third was found just east of the central hearth.

Grinding tools were identified in the southwest and southeast corners (Fig. 8.25a). A grinding tool was recovered from a unit against the north exterior wall in the north compartment, and another was found just west of the central hearth. Grinding tools were also recovered from the south and east compartments. Percussion tools were identified in the west compartment against the southern partition wall (Fig. 8.25b). Other percussion tools were recovered from the north, east, and south compartments, at the interface of the southeast corner and south compartment, and in the southwest corner.

Stone pipe fragments are found in the northwest corner and north compartment (Fig. 8.25c). Other stone pipe fragments were recovered from flotation samples in the east compartment near the northeast central support post, in the southwest corner, and in the west compartment. A stone disc was recovered in the west compartment against the southern partition wall.

Historic European Materials

Historic materials of European origin were identified from several squares within Structure 3 (Fig. 8.26). Historic glass beads were recovered from flotation samples in the southeast corner, south compartment, east compartment, and northwest corner. One Nueva Cadiz plain bead dated to the sixteenth century was recovered from the back-dirt of XU 5

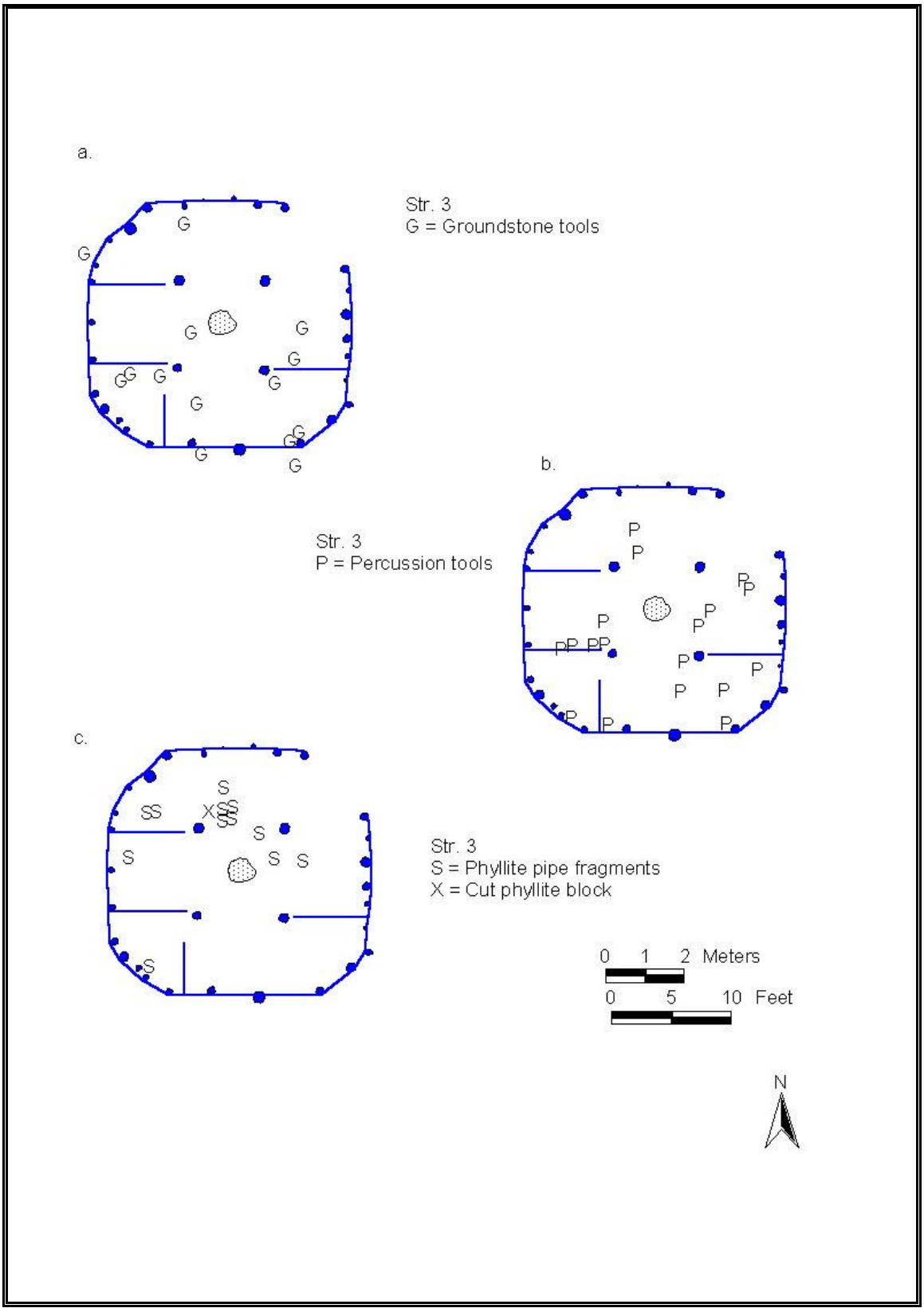


Figure 8.25 - Structure 3; a. groundstone tools; b. percussion tools; c. stone pipe fragments

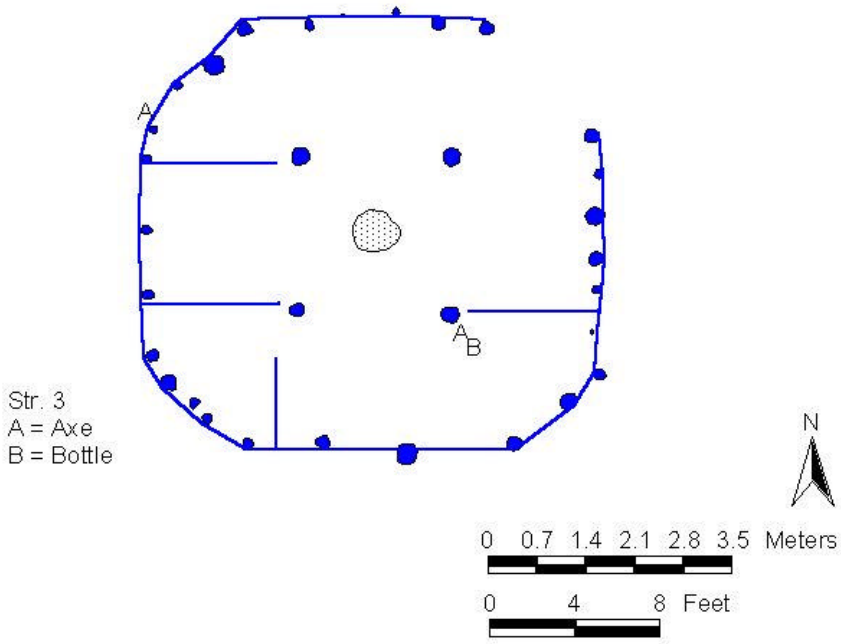


Figure 8.26 - Structure 3, historic artifacts

(Smith 1980:598). An axe blade and sherds of dark green bottle glass were also recovered from a unit within the boundaries of Structure 3. Both date to the seventeenth or eighteenth centuries (Smith 1980:598-600). Their proximity to a large milling stone (see Fig. 8.25a) found slightly on edge, as opposed to flat on a floor surface, suggests the objects may have been introduced as fill of an unobserved pit. Another axe blade or celt was recovered from XU 5 but is outside my proposed limits for Structure 3. As discussed in Chapter 5, it appears as though the historic artifacts recovered from XU 5 are from the basin fill above the floor of Structure 3, and should not be considered in the present analysis.

Botanical Materials

Corn kernels were recovered in several areas of the floor of Structure 3 (Fig. 8.27a). While small quantities are found in every compartment and corner, only two flotation samples had more than .05 g. These are located in the southwest corner and immediately northwest of the central hearth. Two other samples had .05 g of kernels. One is in the west compartment; the other is in the east compartment.

Concentrations of corn cob fragments are somewhat easier to identify (Fig. 8.27b). The largest quantities of cob fragments were recovered from the north and south compartments. A third concentration is found in the west compartment. A small piece (.1 g) was recovered from the east compartment.

As in Structures 1 and 2, hickory nut shell fragments recovered from flotation samples were sorted into four size classes: > 11.5 mm, 11.4 - 5.5 mm, 5.4 - 2.5 mm, and < 2.5 mm. Minute amounts of the largest size class (> 11.5 mm) were recovered only in the east compartment (Fig. 8.28a). No fragments of the second largest size class (11.4 - 5.5 mm) were recovered from the analyzed flotation samples. Fragments between 5.4 - 2.5 mm were identified in several areas of Structure 3 (Fig. 8.28b), again in small quantities. Concentrations are found in the northwest corner, north compartment, east compartment, southeast corner, south compartment, and southwest corner. Fragments less than 2.5 mm largely follow the pattern of distribution seen in the 5.4 - 2.5 mm size class, though in even

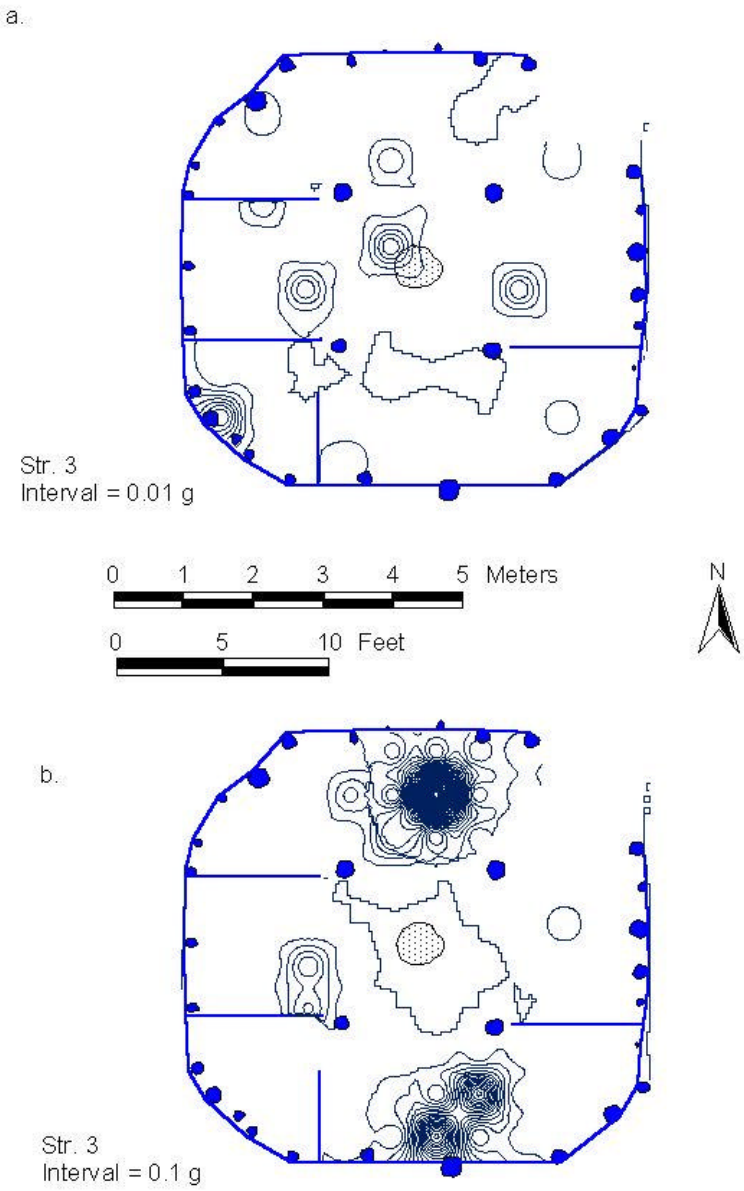


Figure 8.27 - Structure 3, maize distribution; a. kernels; b. cob fragments

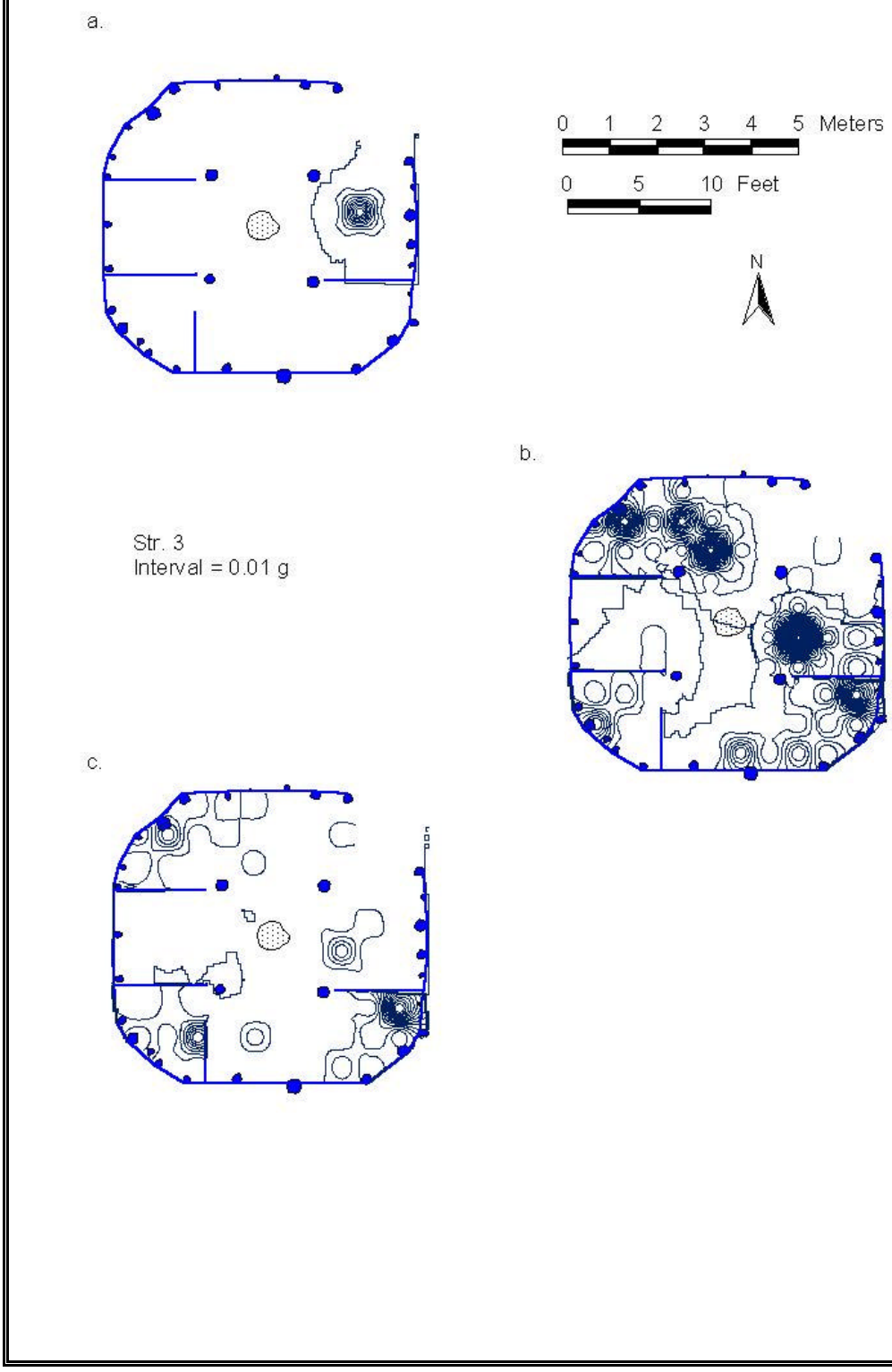


Figure 8.28 - Structure 3, hickory; a. > 11.5 mm; b. 5.4 - 2.5 mm; c. < 2.5 mm

lesser quantities (Fig. 8.28c). The largest concentrations are found in the northwest, southeast, and southwest corners. Another concentration is found in the east compartment.

Acorn shell fragments were recovered in the north compartment and south compartment (Fig. 8.29a). Negligible quantities were identified in the west compartment. Walnut and butternut shell fragments are found in the north and east compartments in small quantities (Fig. 8.29b). Smaller concentrations are found in the southeast corner, south compartment, northwest corner and immediately northwest of the hearth.

Seeds were identified from several different plant species but are combined here along with unidentified seeds for ease of distribution analysis. Species identified from samples within Structure 3 include muscadine, cane, smartweed, may pop, plum, and gourd. Concentrations of seeds are found in the northwest corner and north compartment, the southwest and southeast corners, and south compartment (Fig. 8.29c). Minute quantities of seeds were recovered from the west compartment. Squash remains recovered from flotation samples include rinds, seeds, and peduncles (Fig. 8.29d). The bulk of squash remains are rind and peduncle fragments. Squash remains were identified from the south compartment, southwest corner, and northwest corner. Smaller quantities are found in the west and north compartments. Only two squash seeds were identified in Structure 3; both are found in the east compartment. A gourd fragment was found in the west compartment.

Unidentifiable plant remains were recovered in flotation samples from the entirety of Structure 3, with the exception of the central hearth area.

Faunal Materials

Remains of white-tailed deer are found in many areas of Structure 3, however the light scattering of faunal materials seen in Structures 1 does not seem to be present (Fig. 8.30a). Large concentrations were identified in the northwest corner and north compartment, east compartment, the southeast corner – south compartment interface, the southwest corner, and west compartment along the south partition wall.

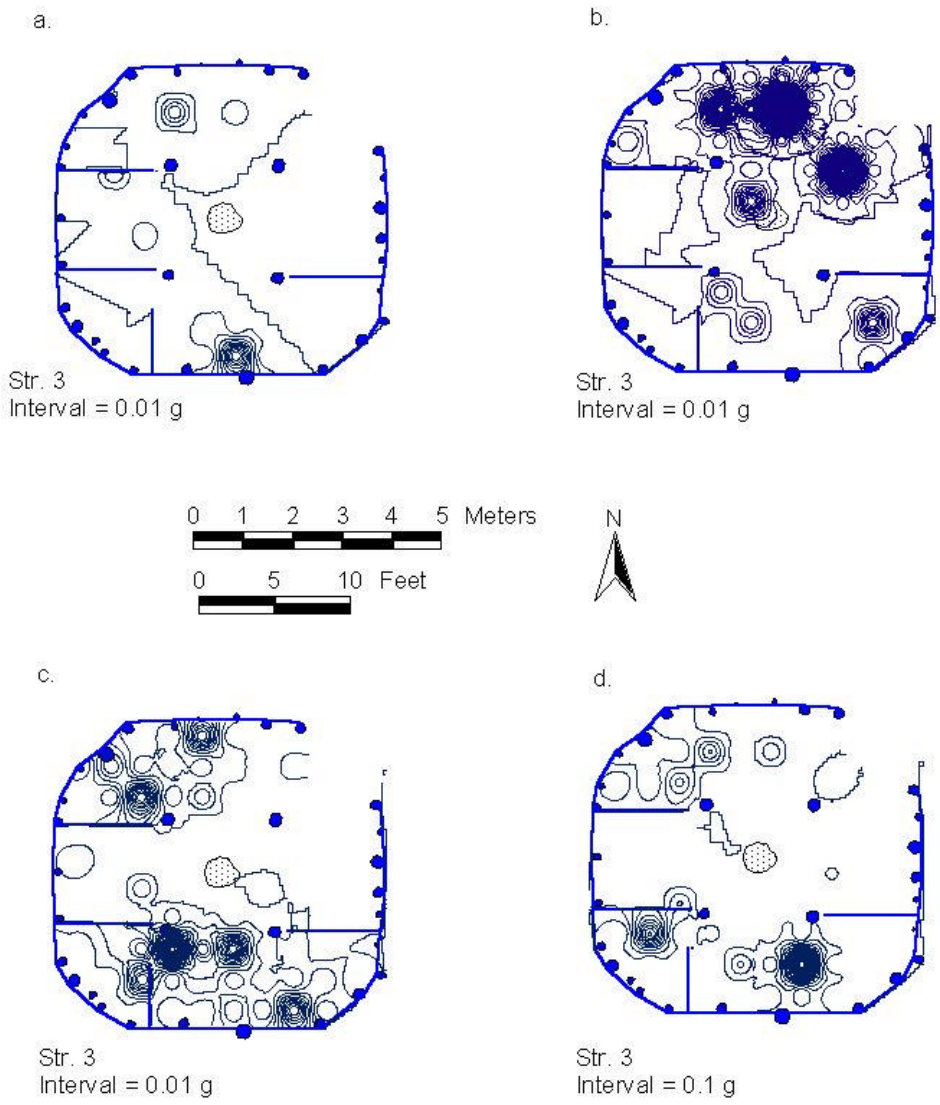


Figure 8.29 - Structure 3; a. acorn; b. walnut and butternut; c. seeds; d. squash

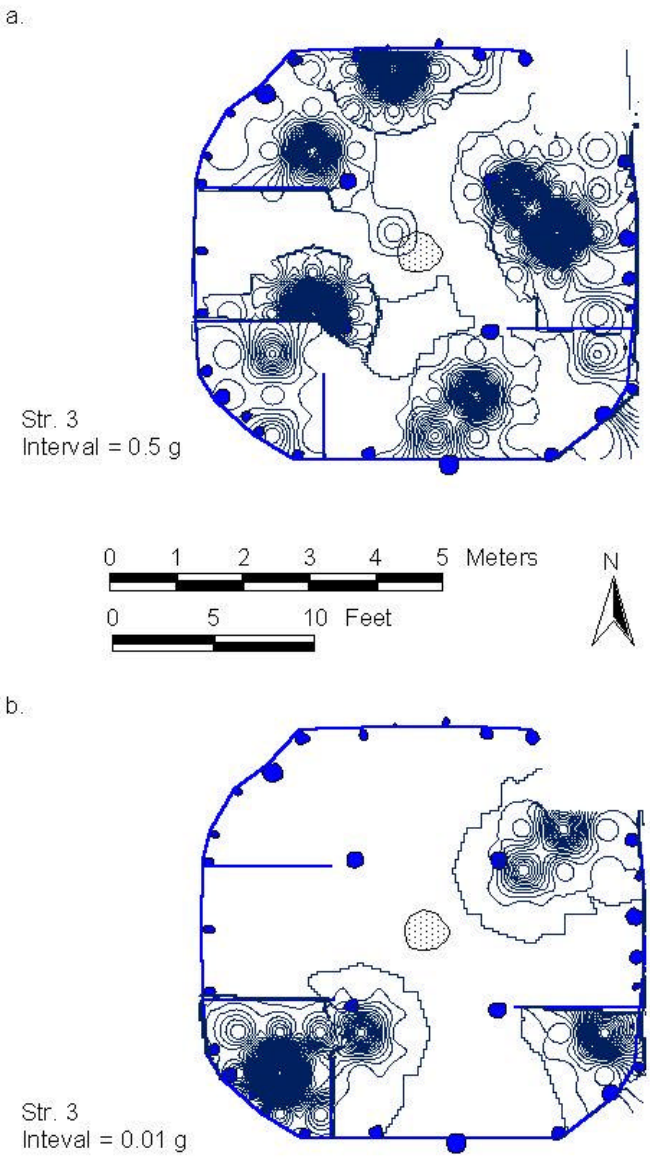


Figure 8.30 - Structure 3; a. deer; b. identifiable mammal

Identifiable mammal faunal remains also include raccoon, squirrel, cottontail rabbit, and a canine from a *Canis* species (Fig. 8.30b). Raccoon elements were recovered from flotation samples in the southwest corner. Squirrel was found in the east compartment and southeast corner. Cottontail rabbit was identified in the east compartment. The single canine tooth was found in a unit in the northwest corner. It may have come from inside or outside the structure wall. Other *Canis* remains from XU 5 clearly fall outside the proposed structure walls. Unidentifiable mammal remains were recovered in areas where deer and the identifiable mammal species are found.

Turtle remains from several species were identified in flotation samples from Structure 3 (Fig. 8.31a). These include slider, map, and painted turtles. Identifiable elements are found in the north compartment, east compartment, southeast corner, and west compartment. Smaller quantities are found in the southwest corner and south compartment.

Unidentified bird remains were recovered in the south compartment and east compartment (Fig. 8.31b). Fish remains, including those from sunfish and drum, were recovered from the east and west compartments, and the southwest corner in small amounts (Fig. 8.31c). Snake remains, both poisonous and non-poisonous species, were identified in flotation samples from the east compartment (Fig. 8.31d). Minute amounts ($x < .12$ g) were recovered in the north and south compartments. Unidentifiable aquatic shell is found in the southeast corner (Fig. 8.32a). Flotation samples along the outside of the structure near this southeastern corner also contain large amounts of shell. Some of these units are clearly outside Structure 3. The samples may be from an entranceway, or perhaps the shell is from another occupation level and is intrusive in Structure 3 deposits.

Unidentifiable faunal remains were recovered in all areas of the structure, with the exception of the central hearth area (Fig. 8.32b). This area, particularly to the west and north of the hearth, is largely devoid of faunal remains of any kind.

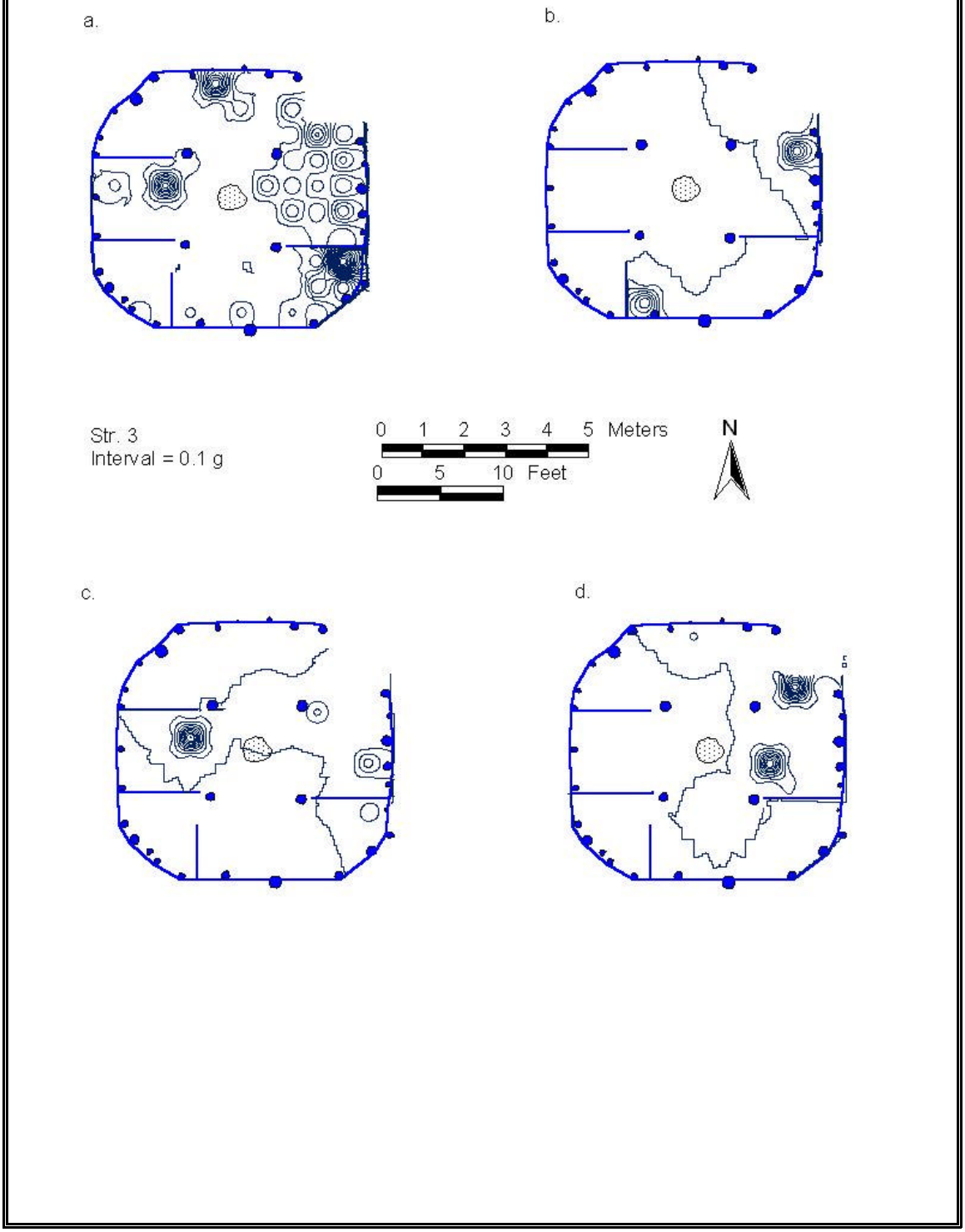


Figure 8.31 - Structure 3; a. turtle; b. bird; c. fish; d. snake

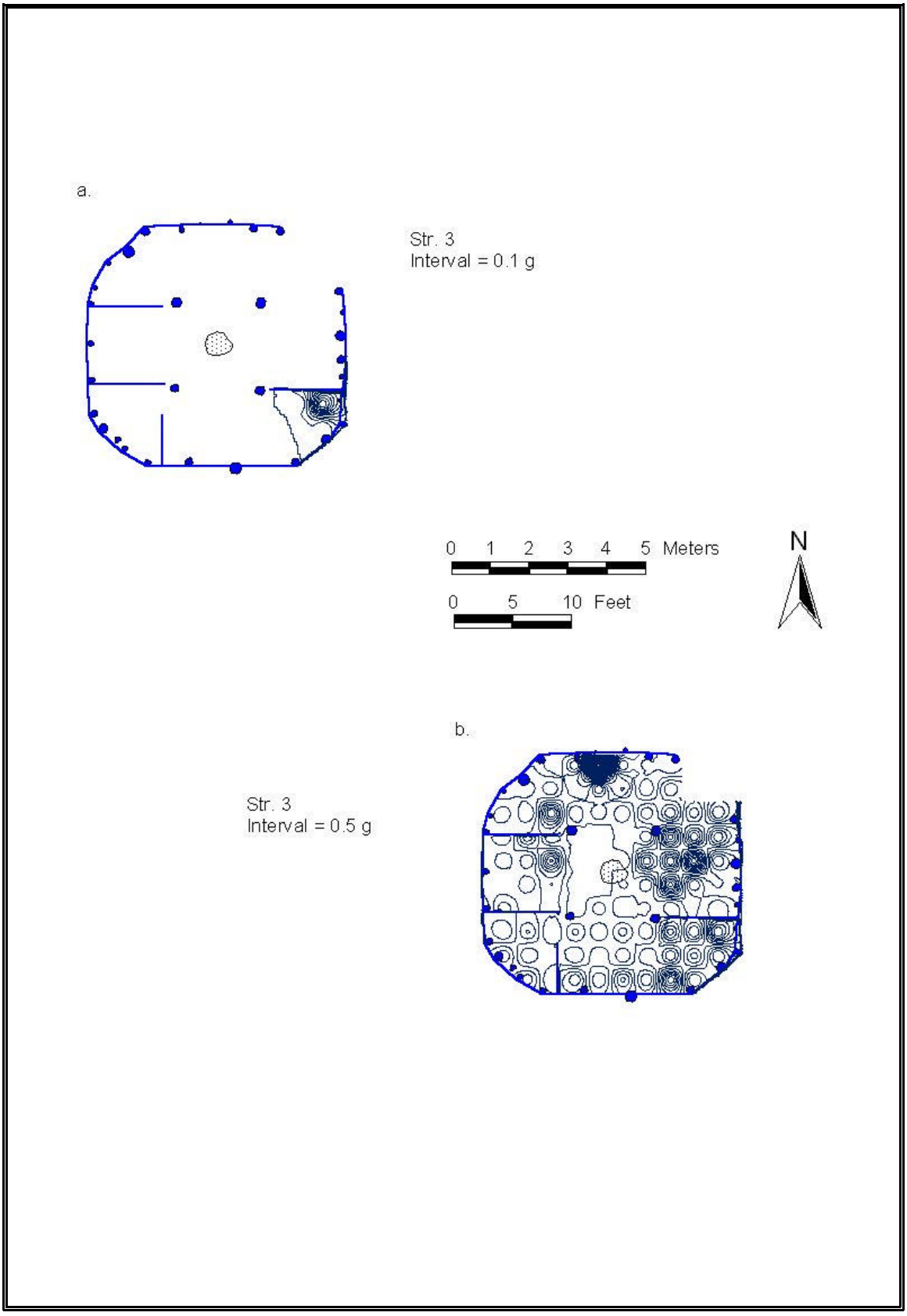


Figure 8.32 - Structure 3; a. shell; unidentifiable bone

Summary

In this chapter the distributions of artifacts from the floors of Structures 1, 2, and 3 were described. This cursory examination is based on a study of isopleth and grid-based maps of artifact distributions generated in ArcView. In the next chapter the results of correlation testing and intuitive analyses are combined with these artifact distribution examinations in order to propose discrete activity areas for each structure in the sample.

CHAPTER 9 – RESULTS

In this chapter the results and findings of statistical, GIS, and intuitive analyses are presented. For each structure the correlation tests by structure are described for some, but not all, artifact classes. Finally, my proposed activity areas are described. All artifacts found in these areas are listed (not just those related to the primary activities), and the rationale behind the conclusions for activities conducted in each area and the probable gender of the user of the area are also given.

Structure 1

Correlation Tests

The distributions of several classes of artifacts are strongly correlated in Structure 1. Nearly all of these are botanical or faunal materials. Somewhat unexpected is the significant correlations of the distributions of all but the smallest size class of hickory nut shell ($r > .7$, sig. .01), particularly if larger pieces of shell were reserved for use as fuel. Presumably fragments smaller than 5 mm would have been missed during hand-sorting of the shell fragments. The strong correlation of the distributions of the smallest and largest hickory nut shell sizes may indicate that large pieces of hickory nut shell were piled near the area(s) where they were produced, namely near processing areas. It is also possible that nuts were cracked over a mat, cloth, or hide, then all of the shell fragments dumped together in a pile without prior sorting by size. The distribution of cob fragments is also highly correlated ($r > .8$, sig. .01) with the distributions of the two largest size classes of hickory nut shell, supporting the idea that these types of debris were recognized as fuel sources and all flammable wastes were stored together. The distributions of other nut shells (acorn and walnut) are also significantly correlated ($r > .7$, sig. .01) with the distributions of the largest size classes of hickory nut shell

and cob fragments, suggesting these, too, were burned as fuel.

The distribution of the smallest size class of hickory nutshell (x < 2.5 mm) is not significantly correlated with any botanical remains other than the next smallest size class (x > 2.5 mm). This is unexpected, particularly if smaller fragments are created at the same time as larger classes of nutshell (hickory or otherwise) through percussive processing activities. Because hickory nut meat is difficult to separate from the shell, it is possible that the smallest fragments ended up in the nut meal, and did not reach floor deposits until eaten and expectorated (Hally 1981:731-732). This might account for the distribution of hickory shell fragments less than 2.5 mm in areas away from processing areas.

Maize kernels are not significantly correlated with any class of artifact. Many kernels were found with a ceramic vessel, suggesting that short-term storage or serving of maize occurred in the structure. It is possible that kernels were pounded in a wooden mortar outside of the structure (Swanton 1946) and are less likely to be associated with any tool classes within the structure, particularly if no other processing of the kernels occurred prior to cooking.

Activity Areas – Structure 1 (Figure 9.1)

Area 1: Encompasses the northern half of the northeast compartment, extending into the central hearth area to the north of the hearth.

Artifacts in Area 1:

1. Large quantities of cob fragments, some corn kernels.
2. Largest three size fractions of hickory nutshell, acorn, walnut, and seeds.
3. Several different types of grinding and percussion tools.
4. A few pp/k (both forms), quartz and chert flaked tools, curated Archaic pp/k.
5. Large cooking carinated bowl near hearth, another in the corner of the compartment, and smaller fragments of Dallas style vessels.
6. Pigment hematite along partition wall and back wall.
7. Faunal elements including shattered limb elements of bear and deer, a deer mandible, and other species.
8. A ceramic disc and several ceramic pipe fragments.

Conclusions, Area 1: Adult work area. Plant and animal foods were processed here. Tools, including flaked and non-flaked stone tools, were also produced and maintained here.

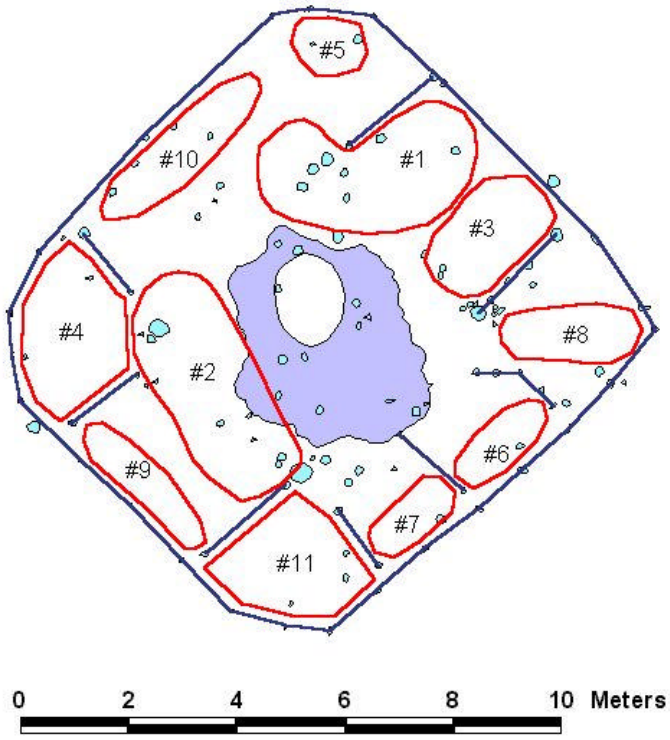


Figure 9.1 - Structure 1, activity areas

Several classes of percussion and grinding tools were found in this area with large quantities of nutshell (hickory, walnut, butternut, and acorn) and corn cobs, honey locust and persimmon seeds, and small quantities of grape seeds and corn kernels. The large quantities of nutshell and corn cobs are probable evidence that these wastes were being temporarily stored for later use as fuel, else they would have been cleared away. Their broad distribution further suggests they were processed in this area, and not outside of the structure. If they were processed outside, it is unlikely so much nutshell would have made it back into the house with the nut meat. If shells (and cobs) were saved for fuel and brought inside, one would expect a tighter distribution of shells, possibly in a corner or other out-of-the-way place. The largest concentrations of nut shell and corn cobs do occur along the partition wall, but also in rather large concentrations around the perimeter of the area. It is possible that nutshells, cobs, and other fuel sources were stored in woven bags or baskets and the collapsing of the roof scattered their contents across this large area. The small quantities of kernels may have been those that adhered to cob fragments. Plant foods were initially processed here after they were brought into the structure, then taken elsewhere for cooking and serving.

Some butchering may have occurred in this area, likely just prior to cooking only (i.e. not whole kills or initial processing of animals). After the west corner (Area 4), Area 1 contains the greatest quantities of deer, bear, turtle, and unidentifiable faunal materials. Broken fragments of finely flaked pp/k may have come from cuts of meat (i.e. the arrow broken off within the animal), or discards of production. Whole, reworked, and broken “leaf”-shaped pp/k were used to process animal and plant foods, and may have also been used in wood-working or other activities.

This area is similar in function to Polhemus’ (1998) warm weather/cold weather interface (Area I). Polhemus suggests heavy processing, lithic reduction, and plant food processing occurred in these areas. He speculates that the area was used by both males and females.

Evidence, Area 1: Presence of botanical remains in association with percussion and grinding tools commonly used to process seeds, nuts, and grains suggest plant food processing occurred in this area. The limb bones of deer and bear, in addition to the other faunal materials, point to either consumption or preparation, or perhaps both. The abundance of chert flakes in this area is the product of tool production and maintenance. The mass of chert flakes, tools, and debris along the southern edge of this activity area is likely evidence of a shared dumping area between Area 1 and Area 3.

Area 2: "Public" edge of southwest compartment, extending into central hearth area west of the hearth.

Artifacts in Area 2:

1. Whole and partial unsooted jars (Dallas style) and bowls (Lamar flaring rim bowls and carinated bowls).
2. Large number of sherds.
3. Kernels and seeds with little/no nutshells.
4. Assorted deer and bear limb bones, largely lower limb. Smaller species also present, including bird, snake, and some turtle.
5. A pinched rim jar fragment recycled as a griddle.
6. Quartz and chert pp/k and pp/k fragment, and a curated Archaic pp/k.
7. Pigments graphite and magnetite.

Conclusions, Area 2: Adult female work area. Food was cooked in this area. Some food, primarily botanical, was served here across the front of the compartment and temporarily stored along the partition walls. Faunal remains in the area are likely from some processing prior to cooking, although consumption cannot be ruled out. No tool production occurred here, but there may have been some tool maintenance.

Evidence, Area 2: Presence of botanical remains in association with whole, unsooted vessels and a general lack of any types of grinding or percussion tools suggests this area was used for storage or serving. Jars, flaring rim bowls, and unsooted carinated bowls are common in this compartment. The large quantity of persimmon seeds and corn kernels near the southern-most partition wall likely came from flaring rim bowls found in the same area. The quantity of limb bones recovered from this area points to storage or preparation rather than consumption. The

griddle may be indicative of cooking in this area, or the vessel was moved towards the central support post to clear it from the central hearth area. The quantities of sherds between the central floor area and this compartment may also indicate places where vessels were broken during use.

Area 3: Southern half of the northeast compartment, possibly extending into the central hearth area.

Artifacts in Area 3:

1. Graver, antler fragments, slate knife/tool, large flakes, and three pp/k fragments in a small cluster (assigned feature number 64 in field but not used in Hally 1980).
2. PP/K fragments at the interface of Areas 1 and 3. Several vessel fragments, tools and tool fragments, a stone pipe fragment, and faunal remains were also recovered from this area.
3. Faunal elements including deer and bear foot elements, deer cranium fragments, turtle, and bird remains.
4. Large quantity of flakes along the center and in the corner of the compartment.
5. Largest number of unmodified stones from any compartment or area.
6. Pigment graphite found in corner.

Conclusions, Area 3: Male work area. Flaked stone tools were produced here. It is possible that other items of wood or bone were also produced here but have not been preserved in the archaeological record. It is possible that this area is part of Area 1, and should be considered an extension of the coarse processing area. However, the large amounts of flake debitage, flaked and non-flaked stone tools, and natural rocks, suggests this half of the compartment was used primarily by males.

Evidence, Area 3: Large number of fragmented pp/k and flakes suggests tool manufacture rather than food production occurred here. Two whole finely flaked isosceles triangular pp/k and nine pp/k fragments may be evidence of flint-knapping, though the possibility that they are from arrows shot into game (and recovered during butchering) cannot be ruled out. More likely these fragments were arrows removed from foreshafts in order to fit new points into them, points like the two finely flaked isosceles triangular pp/k. Other flaked tools from the center of this area include a point reworked into a knife form and a unifacial retouched flake

tool. It is likely that much of the flake debris and some of the tools recovered from the interface of Areas 1 and 3 were produced here.

The items recovered in Feature 64 are suggestive of a specialized tool kit, in particular the graver and slate tool. The graver may have been used to work bone or wood. Other items from the feature include six large flakes and three pp/k fragments. The large number of unmodified rocks in this area may have been raw materials for stone tool production activities. The faunal elements include a number of foot and lower-limb elements, possibly raw materials for bone tools production. Murdock and Provost (1973) list stone working and working in wood and bone as masculine technological activities, and butchering as quasi-masculine activities. These activities seem to be the primary tasks performed in this area, therefore it has been identified as a male activity area separate but related to Area 1.

Area 4: West corner.

Artifacts in Area 4:

1. Unsooted effigy vessel along partition wall, in addition to fragments of four Dallas-style jars and one carinated bowl.
2. Deer and bear vertebrae.
3. Large amounts of turtle, with smaller quantities of bird, fish, snake, and unidentifiable faunal remains.
4. Largest size class of hickory nutshell only.
5. One large percussion tool.
6. Two modified gray chert pp/k.
7. Large number of piece-plotted sherds across entrance.
8. A ceramic pipe fragment.

Conclusions, Area 4: Storage area. Appears to have held many different types of faunal remains. The concentration of large pieces of hickory shell may have been saved for later use as fuel. Vessel fragments may have been in storage for later use as scoops, lids, or other tools. Evidence, Area 4: Area would have been poorly lit, so even though there are a few tools found in association with botanical and faunal remains, this was not a production area. Abundance of piece-plotted sherds across the entrance suggests this was not a frequently used area. Heavy traffic into this corner would have dispersed the materials that accumulated in front of it. The nearly complete deer and bear vertebral columns is good evidence that this

corner was used to store meat, at least temporarily.

Area 5: North corner.

Artifacts in Area 5:

1. Hammerstone, grinding stone disc, anvil.
2. No flakes or sherds.
3. Scapula fragment and antler are only faunal remains.
4. No botanical remains.
5. Large fragments of unworked limestone.

Conclusions, Area 5: Storage area.

Evidence, Area 5: The few tools in this area are possibly elements of a knapping kit. The only faunal elements have high utility potential as tools. Scapulae were used as hoes, and antlers served as pressure-flakers (see Chapter 7). Limestone was a potential source of white pigment. An adult associated with Area 10 likely used the area. There remains the possibility that this area was also a second entrance, one that would have provided direct access to the mound summit. The lack of a partition wall in the area argues against this possibility, although cane matting may have been suspended in front of the opening to block drafts.

Area 6: Northern-most southeast compartment.

Artifacts in Area 6:

1. Pigment graphite fragments.
2. Nut shell fragments, plum pit, and a few persimmon seeds.
3. Polishing stone disc in corner.
4. PP/K base along south partition wall.
5. Negligible amount of sherds and flakes.

Conclusions, Area 6: Sleeping or bench area, likely for one or more subadults. No major activities other than consumption of food occurred in this area. Pigment production is a possible minor activity.

Evidence, Area 6: Lack of tools, flakes, sherds, heavy concentrations of botanical or faunal remains, or any other artifacts suggests a bench was in this area. Benches were reportedly elevated above the floor, allowing sherds, flakes, and other debris to accumulate beneath it. Presumed to be a sleeping area for one or more children or subadults based on lack of

activities, lack of immediate access to storage areas, and the smaller size of the compartment (approximately 8 ft across at back wall).

Area 7: Southern-most southeast compartment.

Artifacts in Area 7:

1. Dallas jar fragments.
2. Negligible amount of flakes, primarily near opening.
3. Polishing stone disc and pp/k listed for Area 6 might have been from this area (items found near partition wall).
4. Minute amounts of hickory shell, persimmon seeds.
5. Fragment of deer foot element.
6. Turtle elements.

Conclusions, Area 7: Sleeping or bench area, possibly for adolescent female or child.

Evidence, Area 7: Lack of heavy concentrations of tools, flakes, sherds, botanical or faunal remains, or any other artifacts suggests a bench was in this area. Benches were reportedly elevated above the floor, allowing sherds, flakes, and other debris to accumulate beneath it. Presumed to be a bench area for an adolescent based on lack of activities and the smaller size of the compartment (approximately 8 ft across at back wall). The presence of vessel fragments, the proximity to Area 2, and access to a likely storage area in the south corner (Area 11) suggest this youth was adolescent female who may have assisted the female(s) working in Area 2.

Area 8: East corner.

Artifacts in Area 8:

1. Ceramic sherds and flake debris.
2. Two flaring rim bowl fragments.
3. Two ceramic discs.
4. Strangely angled partition wall.

Conclusions, Area 8: Entrance.

Evidence, Area 8: This is a somewhat tentative assignment, based primarily on the angled partition wall. Had this corner been a storage area one might expect more debris. The deposits of sherds and flakes appear to be in the corners, which may be an indication of a path

cutting through the center of the corner and foot traffic moving debris to the edges. However, this pattern may also be a result of sampling every other square, leaving those squares in the center of this corner unanalyzed.

Area 9: Back wall of southwest compartment.

Artifacts in Area 9:

1. Fragments of a bone hairpin.
2. Ceramic disc.
3. Small amounts of food remains, botanical and faunal.
4. No tools or vessels are located along the back wall.

Conclusions, Area 9: Adult female bench area. Bench likely extended 3 ft from the back wall. Some food consumption may also have occurred in this area.

Evidence, Area 9: Lack of tools, flakes, sherds, heavy concentrations of botanical or faunal remains, or any other artifacts suggests a bench was in this area. Benches were reportedly elevated above the floor, allowing sherds, flakes, and other debris to accumulate beneath it. Presumed to be a bench area for an adult female(s) because of its proximity to female work Area 2 and the fragments of bone hairpins.

Area 10: Back wall of northwest compartment.

Artifacts in Area 10:

1. Very few sherds.
2. Four or five ceramic pipe fragments.
3. Few flakes and a clear quartz pp/k fragment.
4. No grinding or percussion tools.
5. Little to no food remains in the southern-most end of this area.

Conclusions, Area 10: Adult sleeping or bench area. Some food consumption may have occurred in northern end of this area.

Evidence, Area 10: Lack of tools, flakes, sherds, heavy concentrations of botanical or faunal remains, or any other artifacts suggests a bench was in the southern end of this area. Benches were reportedly elevated above the floor, allowing sherds, flakes, and other debris to accumulate beneath it. This area is presumed to be a sleeping area for adults, although it is

not known whether couples slept in the same bed.

Area 11: South corner.

Artifacts in Area 11:

1. Negligible amounts of sherds and flakes.
2. One ceramic disc.
3. A limestone abrading disc.
4. A fragment of graphite pigment.
5. Negligible amounts of cob fragments, hickory shell, and other botanical remains.
6. Small amounts of deer, turtle, and unidentifiable faunal materials.

Conclusions, Area 11: Storage area.

Evidence, Area 11: Lack of tools, flakes, sherds, heavy concentrations of botanical or faunal remains, or any other artifacts suggests this area was used for storage and not for any production activities. As with Area 4, this corner would also have been very dimly lit.

Structure 2

Correlation Tests

The distributions of only a few classes of artifacts are strongly correlated in Structure 2. The distributions of bifacial tools are correlated with pp/k (r=.7, sig. .01) and cores (r= .7, sig. .01). A brief examination of the coefficients of determination (r^2) for these artifact classes reveals that only about 50 percent of the distributions of cores and pp/k are explained by the distribution of bifacial tools (r^2=.512 and .498 respectively). This is understandable, particularly if different tools were used in different areas of the structure, and also away from where they were originally produced. The distribution of flake debris is not strongly correlated with pp/k, bifacial tools, and cores, all correlations one would expect to find if flaked stone tool production occurred in the structure. Grinding and percussion tools are not strongly correlated with botanical remains of any kind. This may be a product of the bias introduced by combining categories of tools into general function classes. This may also be a product of the lack of preservation of much plant material, particularly as the structure did not burn.

The distribution of faunal remains of snake and fish (both unidentifiable and

identifiable categories of fish) are very strongly correlated (r>.9, sig. .01). This is likely a product of the small sample sizes of these species.

Activity Areas – Structure 2 (Figure 9.2)

Area 1: Southeast compartment, extending into central area northwest of hearth.

Artifacts in Area 1:

1. Pitted rollers and cobbles.
2. Ceramic pipe fragments.
3. Clay beads.
4. Ceramic disc.
5. Carinated bowl and jar fragments. One jar fragment was utilized as a griddle and cross-mends with sherds recovered from southwest compartment.
6. PP/K base and a “leaf”-form pp/k.
7. Several pp/k fragments, scrapers, knives, “leaf” pp/k, and curated pp/k in an area extending from the exterior wall towards the center of the structure.
8. Heavy concentration of flakes and flaked stone cores.
9. Cob fragments, particularly along centerline.
10. Deer elements, including limb and teeth fragments.
11. Fish remains, other identified and unidentified faunal remains.

Conclusions, Area 1: Adult work area. Stone tool production activities occurred in this area. Some plant food processing may have occurred in this area. This area is similar in function to Polhemus’ (1998) warm weather/cold weather interface (Area I). Polhemus suggests heavy processing, lithic reduction, and plant food processing occurred in these areas. He speculates that the area was used by both males and females.

Evidence, Area 1: Tools and vessels suggest this area was used primarily for heavy production activities, possibly including stone, wood, and bone materials. Stone artifacts recovered from this area of the compartment include: one “leaf’-shaped pp/k and two

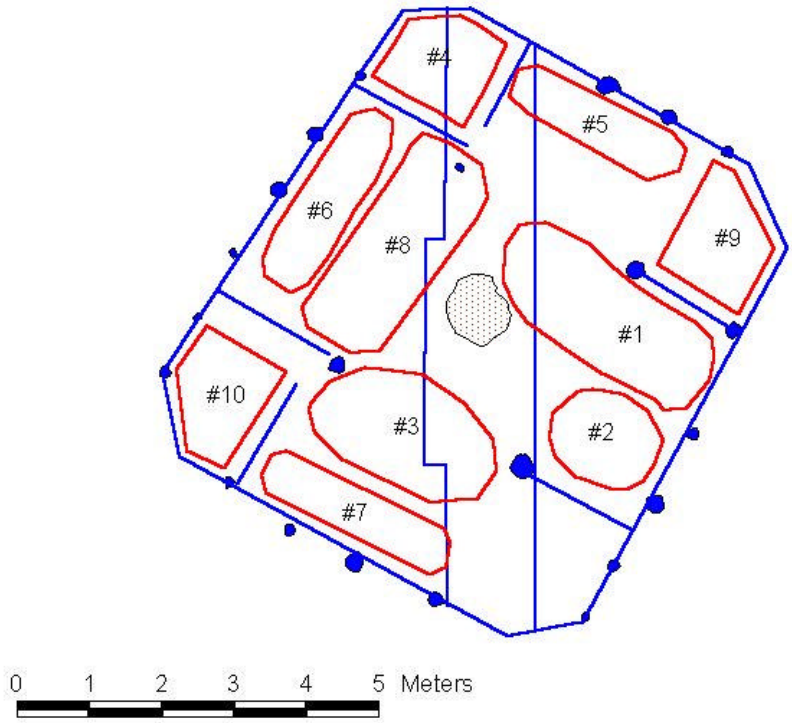


Figure 9.2 - Structure 2, activity areas

isosceles pp/k bases, a tablet with a ground channel (Pennington's Type 2), an abrader with ground hollows (Type 5), battered and pitted rollers (Types 9 and 26), a pitted cobble (Type 8), a hammerstone (Type 12), and numerous cores. The pitted cobble resembles a nutting stone on one side, but the other side is ground flat and also pitted.

The small amount of botanical and faunal materials recovered from flotation samples suggests that some initial processing of plant and animal foods also occurred in this area. The lack of more organic materials can be attributed to the fact that the structure did not burn. Some of the percussion and grinding tools may have been used to process plant materials, including a possible nutting stone, a battered roller with a ground flat facet, and a pitted cobble.

As in Structure 1 there appears to have been some trash and tools deposited between the southern and northern halves of the compartment. Much of this is related to flaked stone tool production, and was likely primarily from the southern half of the compartment (Area 2).

Area 2: Southern half of southeast compartment.

Artifacts in Area 2:

1. Heavy concentration of pp/k, preforms, flakes, and cores.
2. Polishing discs and tablets.
3. Deer teeth.
4. Turtle remains.
5. Corn kernels are only botanical remains.
6. Marvin Smith (1975) reports and has photos of two antler fragments that allegedly came from this area. These were not found for re-analysis or were from a different stratigraphic level.

Conclusions, Area 2: Adult male production area. This should be considered a part of Area 1, but contains enough evidence of one primary activity to warrant designation as a specialized activity area.

Evidence, Area 2: Heavy concentrations of lithic tools, raw materials, and related waste products point to a production area. Of 47 flaked stone tools analyzed from Structure 2 for this analysis, 44 are from Feature 98 and the flotation samples from the surrounding 2 ft squares. All manner of flaked stone tools, including re-touched or modified "leaf"-shaped and

isosceles pp/k, bifacial scrapers, curated pp/k, and preforms were recovered from the southern half of the compartment. Feature 98 also contained tools that may have been part of a flint-knapping kit, including a broken stone tablet, a reworked percussion/grinding tool, a small stone disc (6 cm diameter, < 2 cm thick), and a large stone disc (9 cm diameter, 3.5 cm thick). The massive amount of flakes recovered from this compartment further establishes that flaked stone tools were produced here.

Some of the modified flaked stone tools and non-flaked stone tools point to other activities that may have been performed in this area, possibly including arrow shaft production, bone and/or wood working, and non-flaked stone tool production. Non-flaked stone tools recovered from this area include several types of abraders, a celt, and polishing discs, all of which might have been used to shape stone, bone, or wood. Modified flaked stone tools include several re-touched pp/k with notches along one edge that might have been used to shave wooden shafts for arrows or shape antler or bone pieces for tools or ornaments. The small jar and partial vessel fragment were recovered near the south support post and may be related to consumption. Murdock and Provost (1973) list stone working and working in wood and bone as masculine technological activities. These activities seem to be the primary tasks performed in this area, therefore it has been identified as a male activity area separate but related to Area 1.

Area 3: Interface of southwest compartment and central hearth area, extending into fired hearth apron southwest of the central hearth.

Artifacts in Area 3:

1. Three jars (two are Dallas-style) on fired apron area, a complete jar in the compartment, and fragments of flaring rim bowls, jars, carinated bowls.
2. A clay bead and pottery tablet fragment.
3. Archaic pp/k.
4. Flakes and three cores in western corner.
5. Three pp/k fragments in eastern corner.
6. Two celts, several percussion tools.
7. Kernels and cob fragments in western corner.
8. Nut, seed, and plant remains extend into hearth area.
9. No substantial faunal remains, but some shell.

Conclusions, Area 3: Female work area. Cooking and serving of foods was probably the main activity. Some tool production and maintenance occurred in western half of the compartment. Evidence, Area 3: Presence of several vessels and vessel fragments in association with botanical remains points to this area as a location for cooking and probably serving food. Botanical materials recovered from this area include minute amounts of corn kernels near some cob fragments, hickory nut shell, acorn shell, walnut, and unidentified plant material. It is likely the kernels had adhered to cob fragments that were being temporarily stored for use as fuel. What little faunal material was recovered in this area may be from food consumption activities. Some food processing may have also occurred in this area, as suggested by the presence of a few percussion tools (battered and ground rollers, one convex edge percussion tool) and two celts. Only three non-tool rocks were found in this compartment, suggesting that stone tool production was not a major activity in this area.

The gender assignment for this area is tentatively based on the presence of cooking and serving vessels, particularly the jars found to the south of the hearth on the fired hearth apron. Murdock and Provost (1973) list cooking as a quasi-feminine activity. This activity area may have overlapped with Area 8, with the two areas representing the activities of two (or more) females. Tools related to wood or stone working activities (e.g. two celts), in addition to the concentration of flakes and three cores in the western end of the compartment, suggests some tool production and maintenance activities were performed by women, or that Structure 2 had two production areas similar to Areas 1 and 2.

Area 4: North corner.

Artifacts in Area 4:

1. Clay bead.
2. No flakes.
3. Small number of sherds.
4. PP/K fragment.
5. Small amount of cob fragments.
6. Negligible amount of faunal remains.

Conclusions, Area 4: Storage area.

Evidence, Area 4: This area likely served a similar function as Area 4, Structure 1. Trash was placed in this area as evidenced by the presence of cob fragments. These cobs would have to have been burned prior to deposition as Structure 2 did not burn. Any unburned botanical materials would not likely have survived centuries of decaying processes. Females likely used the area, although this is a weak proposal based on the botanical and faunal materials, and its proximity to a female work/sleeping area.

Area 5: Back wall of northeast compartment.

Artifacts in Area 5:

1. Sherd disc (could be associated with Area 1 as it was found in a flotation sample bisected by a proposed partition wall).
2. Ceramic pipe fragment.
3. Few flakes, two pp/k bases.
4. Hammerstone and abrading tool fragment against wall.
5. Small amounts of hickory, corn kernels, corn cobs, and nut remains.
6. Faunal remains, including deer teeth and astragalus fragment, bear teeth, and turtle.

Conclusions, Area 5: Adult sleeping/bench area.

Evidence, Area 5: Food remains have no associated processing or cooking tools, and are therefore more indicative of food consumption than production. No other activities seem to have occurred in this area. Area fits pattern seen in other proposed bench areas, including general light scattering of smaller debris under presumed elevated bench and spent or fragmented tools along walls. Again, as in Structure 1, the sleeping patterns of male and female household heads are not known. It is presumed that couples occupied the same sleeping quarters, hence the neutral gender assignment for this area.

Area 6: Back wall of northwest compartment.

Artifacts in Area 6:

1. PP/K and flakes.
2. Small amounts of botanical remains (nuts, kernels, and UID).
3. Ceramic pipe fragment.
4. Juvenile burial (#22) with no associated grave goods.

Conclusions, Area 6: Female sleeping/bench area.

Evidence, Area 6: Area fits pattern seen in other proposed bench areas, including general light scattering of smaller debris under presumed elevated bench and spent or fragmented tools along walls. Based on the presence of a juvenile burial in this area it is possible that a juvenile female lived and worked in this area of the structure. In the central hearth area near Area 8 are two additional burials, both children. This might imply that children and adolescents of either sex used Area 6. A more likely possibility is that their mother used this area.

Area 7: Back wall of southwest compartment.

Artifacts in Area 7:

1. Pottery tablet.
2. Clay bead (could be associated with Area 3).
3. Archaic pp/k.
4. Food remains in corners, including nut shells and corn cobs and kernels.
5. Shell.

Conclusions, Area 7: Female sleeping/bench area.

Evidence, Area 7: Primary evidence is light scattering of debris along back few feet of the compartment, with no large vessels or tools reported. Bench was evidently elevated and debris was swept beneath it. Some food consumption may have occurred here. Association with female work Area 3 is basis for gender assignment. However, this is a tentative assignment given the problems with clearly identifying the primary activities in Area 3..

Area 8: “Public” edge of northwest compartment, extending into the central floor area, particularly near west support post.

Artifacts in Area 8:

1. Flaring rim bowl, large cooking carinated bowl, jar fragments (each half is at an end of the area), assorted Dallas jar fragments, sherd concentrations.
2. Two ceramic discs.
3. Relatively small number of flakes in southern half of area. One larger concentration in front of bench (Area 6).
4. Percussion tools near central support post.

Conclusions, Area 8: Female food production and serving area.

Evidence, Area 8: Vessels against the north partition wall likely held botanical and possibly other food materials before cooking. These include two whole vessels and three partial vessels. One of the whole vessels is a small bowl, and the other is a larger carinated bowl. It is possible that the vessel fragments were used as lids, covers, griddles, scoops, and other tools. Vessels near the support post include a large carinated vessel and a vessel fragment.

There may have been some faunal processing near the north central support post. Pennington reports one of the percussion tools had a "greasy" feel to it that was removable by scrubbing (Hally 1980:292). The other percussion tools in this area include two flat milling stones and a pitted roller. No lithic debris, including a near absence of flakes, suggests the tools were not used for any lithic production activities.

The gender assignment for this area is based on the evidence of food production activities. Further, in the central hearth area are two additional burials, both children. As suggested in the description of Area 6, it is likely that an adult female (the mother of the deceased children buried here) worked in this area of the structure.

Area 9: East corner.

Artifacts in Area 9:

1. Ceramic sherds, but no vessels or vessel fragments.
2. Light scattering of flakes.
3. Corn kernels near support post and against northeast wall. Cob fragments found in middle of area and along northeast wall in negligible amounts.
4. Some hickory, acorn, and walnut shell.
5. Small amounts of deer, turtle, fish, rodent, unidentifiable mammal and faunal materials.

Conclusions, Area 9: Storage area.

Evidence, Area 9: Trash was placed in this area as evidenced by the presence of cob fragments, kernels, shell fragments, and mixture of faunal elements from several species. Cobs and shell may have been in temporary storage for use as fuel, but the small quantities relative

to other areas (Area 3 and 7) suggest otherwise. Area would have been poorly lit, so this was not a production area.

Area 10: West corner.

Artifacts in Area 10:

1. Small number of sherds.
2. Moderate concentration of flake debris.
3. Small amount of cob fragments.
4. Nine deer teeth fragments, small amount of enamel fragments, and deer metacarpal shaft fragments recovered near the opening of the corner, near support post.
5. Small amount of unidentifiable mammal material.

Conclusions, Area 10: Possible entrance.

Evidence, Area 5: The near absence of any materials, tools, or vessels in this corner suggests the entrance to Structure 2 was located here.

Structure 3

Correlation Tests

The distributions of very few classes of artifacts are strongly correlated in Structure 3. As in Structure 1, walnut and cob fragments are somewhat strongly correlated in their distributions (r=.7, sig. .01), but the coefficient of determination (r^2=.5) suggests only about half of the distribution of walnut can be accounted for by the co-occurrence of cob fragments. The distribution of shell is weakly correlated with the faunal remains of birds, turtle, and fish (r=.6, .7, .6 respectively, sig. .01), but this is likely a product of the small amounts of shell, birds, and fish recovered from the flotation samples. The higher correlations of the distributions of these items may suggest that small fauna and shell were processed, stored, or discarded in the same areas.

Structure 3 - Activity areas (Figure 9.3)

Area 1: East compartment.

Artifacts in Area 1:

1. Sherds, primarily along back wall.
2. Two fragmented vessels with cross-mends.

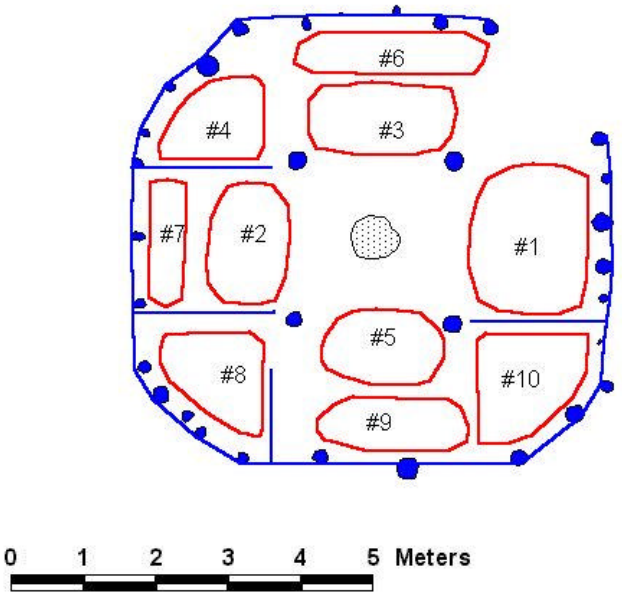


Figure 9.3 - Structure 3, activity areas

3. Clay bead.
4. Pottery disc.
5. Ceramic pipe fragment.
6. Flakes along the back wall and northern-most partition.
7. UID pp/k and a preform.
8. Irregular milling stone and a grinding stone.
9. Minute fragment of pigment hematite.
10. A nutting/abrading tool, a mano/nutting tool, and two anvils.
11. Historic glass beads near central support posts and back wall.
12. Small amount of kernels, negligible amount of cob fragments, only concentration of largest class of hickory nut shell, walnut, two squash seeds, and some squash rind fragments.
13. Deer elements in northern half, cottontail rabbit, bird, sunfish and drum, UID fish, and snake remains.

Conclusions, Area 1: Adult work area. Botanical and faunal processing, in addition to flaked stone tool production likely occurred here.

Evidence, Area 1: The presence of charred plant and animal remains in association with vessel fragments, and mostly spent percussion and grinding tools suggests this was an adult work area similar to those seen in Structures 1 and 2. No serviceable or intact vessels or tools were recovered from this area. Unlike Structures 1 and 2, there is no major knapping in the southern half of the compartment. The flakes that are present in this compartment extend into the central hearth area in the northeast corner. The area of debris seen in the corresponding compartments of Structures 1 and 2 was probably cleaned prior to the household moving into the summer quarters. Gender assignment is based on the activities likely performed in the area, in addition to the similarities of structure layout and function seen in Structures 1 and 2.

Area 2: West compartment.

Artifacts in Area 2:

1. Pinched rim jar, carinated bowl, and sherds from four Lamar complicated stamped or pinched rim vessels.
2. Stone disc, several pitted cobbles and rollers, and a hammerstone and anvil along the southern-most partition wall (could be associated with Area 7 or 8 as they were recovered from flotation samples that spanned both areas).
3. Flakes and two preforms.

4. Irregular milling stone at the edge of the central hearth area.
5. Stone pipe fragments.
6. Kernels in several areas, cobs only along southern-most partition.
7. Acorn, smaller size classes of hickory, gourd fragment, and a plum pit.
8. Squash rinds and peduncles along both partition walls.
9. Small amounts of faunal materials, including deer and fish.

Conclusions, Area 2: Female work area. Preparation and cooking of botanical and faunal foods. May also have some tool production and maintenance in this area.

Evidence, Area 2: Work area was deduced from abundance of vessel fragments, in association with wide variety of plant remains. Fragments of pinched-rim jars and carinated bowls were probably tools. A pattern of vessel fragment tools located along partition walls was noted in Structures 1 and 2. Preforms (unable to relocate for reanalysis, see Chapter 5) and flakes suggest some flaked stone tool production or maintenance occurred in this area. The presence of several pecked and pitted stone percussion tools and a stone disc along the south partition wall is not wholly understood if the interpretation of the area is correct. It is possible that some or all of these tools came from the southeast corner (Area 8), as these flotation samples are bisected by the partition wall. Several other stone tools were recovered from Area 8, suggesting it was used as a storage area. Gender assignment based on association with food production activities, listed by Murdock and Provost (1973) as feminine technological activities.

Area 3: North compartment.

Artifacts in Area 3:

1. Ceramic pipe fragment (could be associated with Area 4).
2. Negligible amount of flakes.
3. Scraper and two UID pp/k (one of which may be associated with Area 4 as this flotation sample is crossed by the partition wall).
4. Two large anvils.
5. Stone pipe fragments (6 of 11 in structure).
6. Large piece of unworked phyllite.

Conclusions, Area 3: Male work area. Phyllite pipe production.

Evidence, Area 3: Several fragments of phyllite pipes in various stages of production, a large

piece of unworked phyllite, and possible anvils. No other tools were recovered from this area, so it is unclear what was used to drill holes into pipe stems and bowls. Clear scrape marks on the exterior of the pipe stems suggest a bladed tool was used during production. The gender assignment is based on evidence of stone working, listed by Murdock and Provost (1973) as a masculine activity.

Area 4: Northwest corner.

Artifacts in Area 4:

1. Small cluster of sherds and partial vessels.
2. Ceramic disc.
3. Ceramic pipe fragment (could be from Area 3 as it is from a flotation sample near the partition wall).
4. UID pp/k (could be from Area 3, see above).
5. Stone pipe fragments (n=2).
6. Minute amounts of kernels, hickory shell fragments, seeds, squash rind and peduncle fragments.
7. Deer tibia fragment.

Conclusions, Area 4: Storage, possibly for food, trash, and/or laterally cycled vessel fragments.

Evidence, Area 4: Minimal amounts of remains of any kind. Area would have been poorly lit, and lack of tools or complete vessels suggests that the corner was not locus of production activities. The vessel fragments were probably in storage for future use as tools.

Area 5: South compartment.

Artifacts in Area 5:

1. Cross-mended sherds, a Dallas-style vessel.
2. Percussion tools and anvil.
3. Cob fragments, honey locust seeds, large concentration of squash rind.
4. Some deer and raccoon faunal remains.

Conclusions, Area 5: Female work area for food production.

Evidence, Area 5: While vessels, tools, and other remains are somewhat scant, enough were recovered to suggest this was a food production area. This area also had access to the storage area in southwest corner (Area 8) and the presumed entrance at the southeast corner.

Area 6: Back wall of north compartment.

Artifacts in Area 6:

1. Negligible number of sherds.
2. Few flakes.
3. Irregular milling stone.
4. Cob fragments, other small botanical remains.
5. Deer and other faunal remains.

Conclusions, Area 6: Adult bench or sleeping area.

Evidence, Area 6: A lack of any evidence of production activities of any kind suggests this was a bench or sleeping area. Faunal and botanical remains may be from consumption activities. A neutral gender assignment is suggested based on the pattern observed in Structures 1 and 2.

Area 7: Back wall of west compartment.

Artifacts in Area 7:

1. Few sherds.
2. Clay bead, stone disc (may be from Area 2 or 8 as this flotation sample spans the three areas).
3. Some flakes, two pp/k, two preforms (unable to relocate, see Chapter 5).
4. Stone pipe fragment.
5. Cane seeds.
6. Small amounts of faunal and botanical remains.

Conclusions, Area 7: Female bench or sleeping area.

Evidence, Area 7: Association with female work Area 2 and general lack of evidence of production suggests this was a sleeping or bench area. Faunal and botanical materials may be from consumption activities, or were swept under the bench from Area 2.

Area 8: Southwest corner.

Artifacts in Area 8:

1. Stone pipe fragment.
2. Clay bead, stone disc (may be from Area 2 or 7 as the flotation square spans all three areas).
3. Sherds along exterior wall.
4. Ceramic pipe fragment.
5. Kernels, hickory shell, seeds, squash fragments.

6. Deer and raccoon remains.

Conclusions, Area 8: Storage.

Evidence, Area 8: General scattering of broken items and food remains, and possible line of tools along the partition wall suggests this was a storage area. This corner would have been poorly lit, making production activities unlikely. The tools are not overly-worn, suggesting they were in storage for later use and not just piled against the partition wall and forgotten.

Area 9: Back wall of south compartment.

Artifacts in Area 9:

1. Few sherds.
2. Utilized celt.
3. Multiple function abrading-percussion tool.
4. Few kernels, cobs, nut remains.
5. Little faunal material.

Conclusions, Area 9: Female bench or sleeping area.

Evidence, Area 9: Association with female work Area 5, in addition to conformity to pattern observed in other structures are main basis for interpretation. Small amounts of botanical and faunal remains may be from consumption or were swept under bench from Area 5. The percussion tool may be spent, as evidenced by the several types of surfaces observed, including a ground face, two pecked ends, and a worn notch along one edge. It may have been tossed under the bench when a replacement tool was introduced.

Area 10: Southeast corner.

Artifacts in Area 10:

1. Few sherds.
2. A pottery disc.
3. Flakes, pp/k, and other chert debitage (possibly from Feature 28, see below and Chapter 5).
4. Two stone tablets (Pennington's Type 3).
5. A few percussion tools (Types 8, 11, 13).
6. Small amounts of hickory and walnut shell, and unidentifiable plant materials.
7. Small amounts of faunal materials, including deer, turtle, squirrel, fish, and unidentifiable materials.

Conclusions, Area 10: Possible entrance.

Evidence, Area 10: The difficulty of identifying the origin and extent of Feature 28 (see Chapter 5) calls other artifact classes recovered from this area into question. If the assortment of small quantities of several artifact classes is from Floor A, then it is possible that this corner was used for storage. However, if entrances are typically located along the southern wall of structures (see Chapter 5), then this corner is a better candidate than the very well defined southwest corner. The southwest corner has closely spaced postholes that do not seem to allow for an entrance. Two gaps in the posthole alignment of the southeast corner may indicate possible entrances, though this is admittedly weak evidence by itself.

Summary

Discrete activity areas have been identified through a combination of correlation statistical analysis and intuitive visual inspections of artifact distributions. This latter technique was simplified through the use of ArcView. Activity areas have been proposed for Structures 1, 2, and 3, and the evidence and rationale for each designation was also presented.

Structure 1 is in many respects the ideal type of domestic house to analyze. The structure is a single building stage, and appears to have been occupied at the time that it unexpectedly burned. We can presume many of the materials found on the house floor were left where they were last used or placed. Furthermore, the collapsed remains of the house were covered with soil, perhaps as fill for another mound stage, and do not appear to have been greatly disturbed by later activities and construction on the mound terrace (Hally 1980:121). Eleven activity areas were identified within Structure 1. These include one female work area (Area 2), a male work area (Area 3), a shared activity area (Area 1), three storage areas (Areas 4, 5, and 11), four sleeping/bench areas (Areas 6, 7, 9, and 10), and a possible entrance (Area 8).

The identification of activity areas within Structure 2 was made more difficult by the fact that the structure did not burn prior to abandonment. Hence a number of types of evidence present in Structures 1 and 3 were not recovered in this structure. In spite of the

short-comings of the sample, ten activity areas were identified within Structure 2. These include two female work areas (Areas 3 and 8), a male work area (Area 2), a shared activity area (Area 1), two storage areas (Areas 4 and 9), and three sleeping/bench areas (Areas 5, 6, and 7).

Analyzing Structure 3 also proved to be an interesting and difficult challenge. This structure does not appear to have been occupied at the time that it burned. Instead, household activities were likely being performed outside of the domicile. The structure also appears to have been rather thoroughly cleaned prior to the household's move to summer quarters. Tools, food, and other materials were probably not inside the structure when it was destroyed. Identification of activity areas was further hampered by problems with the excavation of the structure. Feature 28, spanning nearly the entirety of the southeast corner (Area 10), yielded many artifacts. The exact orientation, depth, and over-all extent of the feature, however, call into question the origin of artifacts recovered from this corner. In spite of these difficulties, ten activity areas were identified within Structure 3. These include two female work areas (Areas 2 and 5), a male work area (Area 3), a shared activity area (Area 1), two storage areas (Area 4 and 8), three sleeping areas (Areas 6, 7, and 9), and a possible entrance (Area 10).

CHAPTER 10 – DISCUSSION

The purpose of this dissertation is to examine two specific aspects of household activity areas in Mississippian domestic structures. Is there evidence for discrete, discernable activity areas within domestic structures, and, if so, is there evidence that can be used to determine separate, gender-specific activity areas? I have used a combination of statistical analysis, GIS, and intuitive techniques to address both of these questions.

The topics of household archaeology, activity area analysis, and gender research are an invaluable means of exploring production at the household level. Late Mississippian households in the southeast United States were comprised of men, women, and children, performing activities within their domestic structures. Outside of the much-debated realm of specialized production of elite or status items, the majority of activities that occurred at the household level were arguably involved in production for domestic needs and consumption. However, it has been argued that looking at households as "black boxes" hides the contributions of individuals within them (Wilk 1990). It becomes important then, when discussing household production, to examine the role of the individual. One way that this can be accomplished is through an examination of activity areas and the division of labor by gender.

The analysis of activity areas is an integral part of household production studies. Households are activity groups comprised of individuals, and it follows that archaeologists excavate the remains of their activities and the loci of activities (Chapter 2). The analysis of activity areas can contribute to studies of household production, consumption, craft specialization, and the gender division of activities and space, to name but a few.

What follows is a discussion of my study, the nature of gender-division of labor, the structuring of activity areas in Little Egypt households, and a comparison of the three households. These findings are compared to our present understanding of Late Mississippian households in east Tennessee and a model is suggested for Late Mississippian households in northwest Georgia.

Household Activities at Little Egypt

Food preparation activities are the most common for which there is evidence in domestic contexts at Little Egypt. These activities are comprised of several stages from procurement through consumption. There is ample evidence to suggest that some initial processing of plant materials occurred in the houses. Evidence of these types of activities takes many forms. All sizes of nutshell, burned or charred kernels, cob fragments, and other botanical remains are the products of activities to remove nutmeats and grains from shells and husks through the use of percussive, abrading, and grinding tools. Some wastes (e.g. large fragments of nutshell and corncobs) may have been reserved for use as fuel (Hally 1981). Tools for removing kernels from cobs include deer mandibles (Brown 1964), and other corn cobs. Other tools used to process plant foods include nutting stones, hammerstones, manos, and milling stones. Vessels exhibiting wear from leaching corn with lye and different types of storage vessels are also indicators of plant processing activities that occurred within domestic structures. The smallest sizes of hickory nutshell may have been expectorated during consumption (Hally 1981).

Evidence for some possible butchering activities can be found in domestic structures at Little Egypt. These include faunal remains found in association with flaked stone tools (scrapers, blades, pp/k) and some percussion tools. Flesh may have been removed from bone, and then the bones broken up for grease production or marrow extraction. Analysis of butchering or cut marks was not conducted given the difficulty of distinguishing marks generated by skinning an animal from marks made when de-boning cuts of meat. Similarly, distinguishing between bones shattered for grease and marrow extraction and bones broken

during consumption, butchering, disposal, and other activities is equally beyond the scope of this dissertation, though it should be attempted in the future.

Cooking food was accomplished in several ways. Stews, soups, gruels, and other forms of boiling plant and animal foods were common in the prehistoric Southeast (Hally 1984; Hudson 1976; Swanton 1946). Other techniques included roasting, frying, and, to a lesser degree, baking. Evidence for each of these types of cooking techniques takes different forms. Stews and similarly boiled foods required a large-mouthed vessel capable of being placed in or near the direct heat of a fire (Hally 1984). Soot deposits on carinated bowls and jars are strong evidence for this type of cooking.

Roasting of meats and plant foods can be inferred from scorched or burned food remains. Carbonized whole kernels and cob fragments may be indicators of corn lost in the fire during parching. However, as cobs may also have been retained for use as fuel, their distribution (and that of any adhering kernels) within structures cannot immediately be thought of as the results of cooking activities. Meat lost during roasting may prove to be more difficult to identify. Burned bones may also be the result of wastes disposed of in the central hearth, or through the destruction of the house by fire, or other activities, such as consumption.

In addition to activities related to food preparation are those activities associated with production and maintenance of flaked-stone tools. Evidence for these types of activities includes concentrations of debitage, retouch flakes, pp/k in various stages of production (preforms through reworked pp/k), generalized percussion tools, and specialized stone working kits. Flint-knapping kits often include specialized pressure-flakers of antler tines, round hammerstones, abrading discs for preparing edges prior to flake removal, cores, and preforms.

Pigment use was also carried out in domestic contexts. In Structure 1 fragments of minerals commonly used as pigment were found in adult female and male activity areas, and even in subadult areas. Magnetite is a black shiny iron oxide, and is very hard and quite heavy.

Several fragments of magnetite were recovered around the south central support post. These may have been in a container or common location and were scattered when the structure burned and collapsed. One fragment resembles the small end of a groundstone celt. Graphite, a black carbon, is very soft and is still commonly used in pencils and dyes. Graphite fragments were recovered from Structure 1 in the male work area (Area 3), a female work area (Area 2), and in an area likely utilized by subadults (Area 6). Another graphite fragment was recovered from the south corner. Hematite is another iron oxide. It can appear as black crystals, but is more commonly found in soft, granular masses ("red ochre"). Hematite was recovered from Structure 1 in an adult activity area (Area 1). Other unidentified materials that may have been used for pigments in Structure 1 include a white/gray chalky disc found in the south corner, and large fragments of a similar chalky stone recovered in the north corner between Areas 5 and 10. With the exception of one minute speck of hematite recovered from Structure 3, no other pigment minerals or materials were recovered from the other excavated domestic structures at Little Egypt.

Tools used to process the pigments likely included various tablets, palettes, and grinding stones. These were found in all three domestic structures in an assortment of shapes, sizes, and raw materials, but none exhibit any clear direct evidence of having been used as a pigment palette.

Other activities for which there is evidence of having occurred within domestic structures at Little Egypt include hide-working, and stone-pipe production. Evidence of possible hide-working activities includes specialized tools and particular faunal elements found in Structure 1 (see Chapter 7). Several partial deer skulls were recovered from Area 2. The antlers were removed from the skulls. One skull exhibits an unusual wear pattern that may be the result of rubbing on deer hides during the tanning process. Stone-pipe production in Structure 3 is evidenced by the presence of unworked phyllite and fragments of stone-pipe bowl and stems broken in mid-production (see Chapter 7).

Gender and Space in Household Activity Analysis

The distribution of artifacts across areas of the housefloors suggests that different activities were carried out in different areas of the structures. The pattern seen in the three structures excavated at Little Egypt suggest there was a cultural template or norm for where certain people worked. By extension, this also influenced where particular activities were performed, given the division of labor by gender that existed in prehistoric Southeastern Indian societies. In this way it is particularly difficult to make the argument for discrete activity areas without also discussing the issue of gender division of labor.

The central hearth area was the focus of many household activities, primarily those requiring heat, but also any requiring light. This area was kept clean of debris, and we can assume that any large vessel fragments and tools recovered in this area were in use at the time of the abandonment of the structures. This being the case, the central hearth area was not a discrete activity area, *per se*, but a temporary extension of peripheral work areas located at the openings of the compartments. One can imagine most pedestrian traffic within the structure passed through this central area, thereby making permanent work areas and their associated materials, tools, and trash a hindrance or hazard, and incongruent with the movement of people.

Evidence for division of household space can be found in the construction of the structures themselves. Domestic winter structures were physically divided into compartments through the use of partition walls. Partition walls at Little Egypt are represented by posthole alignments extending from the exterior walls toward the center, sometimes with adjacent concentrations of fired daub. Partition walls for which there is no direct evidence can be inferred through analysis of artifact distribution. Walls prohibited the even distribution of artifacts across the floor of the structure. Tools, vessels, and refuse also would have likely been deliberately placed or eventually come to rest along walls. Linear clusters of artifacts in areas that lack direct evidence of structural elements (e.g. postholes) are probable indicators of partition walls. Most of the partition walls proposed for the structures at Little Egypt were

inferred in this manner.

Support for the identification of discrete activity areas by gender can be found within single large compartments. There is evidence to suggest that when two or more individuals of different gender shared a compartment, the division of activity areas was still practiced. In both Structures 1 and 2 a compartment to the right of the entrance appears to have been utilized by a female and a male, perhaps simultaneously. Food waste, raw materials, broken ceramic vessels, tools in various stages of completeness, and other items that might have interfered with the activity being performed were deposited between the two activity areas. This demarcation of a "no-man's land" with refuse demonstrates that the two activity areas were viewed as being separate from each other. If activity areas were not separate, we would likely observe refuse deposits along walls and partitions exclusively, and not in a pattern resembling a partition wall of trash in the center of a large compartment. Where compartments were the locus of single activities or multiple activities performed by a single person, no deposits of refuse are observed in potentially usable space. Here wastes are pushed to the edges of activity areas, along walls, and under benches.

It is argued here that partition walls served to delineate some male and female areas within Late Mississippian domestic structures. Other gender specific areas many not have been marked by actual physical barriers like partition walls, but were instead known to be men's or women's areas by the individuals who commonly used them (e.g. women preparing food by the central hearth). Upon entering a domestic structure at Little Egypt visitors would almost assuredly know which areas were used by males and which areas were used by females.

In her study of late prehistoric Siouan communities in the western Piedmont of North Carolina, Jane Eastman (2001:58) proposes that women "experienced more profound changes in their gender roles and identities as they aged than did men." She argues that these changes are marked in many ways, including expectations in behavior, specific dress, and in the division of labor. These changes may be evident in burials through the presence of tools

associated with gender-specific tasks, and items of dress or decoration. I suggest that these changes in gender role and identity through a life cycle would also be seen in the spaces individuals occupied in domestic structures. Children occupied a shared area or sleeping bench while adults occupied another. However, as girls and boys matured and their responsibilities changed, the areas where they worked and lived also changed. For females this might culminate in the establishment of her own household.

Large compartments that were utilized by one gender usually have evidence of several activities within them, though most of these activities relate to the completion of a larger task. For example, a female activity area in Structure 1 (Area 2) contains whole and partial vessels, a few percussion and grinding stone tools, flaked pp/k, evidence of foodstuffs (e.g. deer and bear elements, and persimmon seeds and maize kernels), and pigment mineral fragments. Most of these artifacts are related to various stages of food production or serving. However, the presence of pigments suggests that other activities may have also occurred in this same area. All of these activities were performed by a woman in a space that was considered to be a female activity area.

The presence of multiple types of activities within a single gender-specific activity area is likely an indication of the age of the person utilizing the space. Adults undertook more types of activities than subadults or children (Eastman 2001). Subadults were taught specific skills by adults, likely within or near adult activity areas. We might expect to see activity areas with evidence of fewer types of activities within them separate from more complex adult activity areas. These latter spaces can be interpreted as activity areas of older subadults performing the additional duties and gender roles that came with changes in age.

Household Production at Little Egypt

What does the exploration of activity areas and gender contribute to the examination of Late Mississippian household production?

Females and Household Production

Gero (1991:170) states that women are portrayed as the most visible in household contexts, perhaps even "disproportionately represented" in household midden. This appears to be the case at Little Egypt. In all three structures women's activities dominate the assemblages and occupy the most space. This stands to reason. Upon examination of the lists of activities commonly performed by women in Southeastern Indian societies one can see that the majority of them take place within or near domestic structures. Men's activities commonly occurred outside of structures, or away from village settings entirely (Spain 1992). A brief discussion of females' and males' activities follows.

Murdock and Provost (1973) list food preparation activities, namely cooking and preparation of vegetal foods, as quasi-feminine activities. Smith (1978) refined their list by using ethnohistoric accounts from Swanton (1946) and finds food preparation activities to be primarily a feminine activity. Food preparation activities are the most common for which there is evidence in domestic contexts at Little Egypt. Whole vessels that functioned as cooking pots and storage containers are found in female activity areas. Partial vessels are also located in these areas, and indicate that they functioned as tools (e.g. lids, scoops, and griddles) (Hally 1983a). Other tools, plant parts, and faunal remains are also found primarily in female activity areas. Plant and animal remains found outside of female activity areas are arguably the products of consumption of food, as they are not found in association with storage or cooking vessels, or processing tools (Hally 1981). It can be argued that activities related to the production of food for domestic consumption occupied not only the bulk of female activity areas, but also occupied the majority of women's time.

Certain evidence exists that can be used to infer the possibility that a stage of hide-tanning activities occurred within domestic structures, and it appears that this activity was also performed by females. Women were responsible for at least a portion of the work producing finished hides as evidenced by artifacts in a female work area (Area 2) in Structure 1. This evidence is not particularly strong. The recovery of several deer skulls from Area 2

may indicate that brain matter was brought back for tanning activities. However, this is a rather pungent activity that requires a lot of space for stretching the hides, and was likely best performed out of doors. Two explanations can account for how the skulls came to remain in the structure once the brains were removed for tanning. Either they were valued as potential tools (i.e. the antlers, mandibles, or some other portion of the skulls), or they were in the structure not long before it was destroyed, before they could be removed for disposal elsewhere. The wear patterns on one skull suggests they were retained for a time after the antlers and mandibles were removed. The remnants of the antler bases are worn quite smooth, and may have been used to break the fibers of a hide. This skull and the tanning process are described in more detail Chapter 7.

Another result of this re-analysis of Little Egypt households is the identification of lithic production and/or maintenance activities within female areas of the structures. I propose that women produced and maintained some of the flaked stone tools found in domestic structures. The evidence for this includes the presence of chert and quartz debris in female work areas, often in association with percussion tools. The notion of female production of flaked stone tools has been addressed in recent decades, most notably by Gero. She states that it is "inconceivable that they (women) sat and waited for a flake to be produced, or that they set out each time to borrow one" (Gero 1991:170). Flaked stone tools recovered from female work areas at Little Egypt include formal scrapers in several forms and pp/k that have been reworked into specialized scraping and cutting tools.

The user of a tool is the best judge of the adequacy of the tool for a particular task (Gero 1991:170). It stands to reason that if females were making a variety of vessel forms to suit particular needs, so too would female require points that suited tasks not performed by male knappers. Whether females produced the original tools they later altered through use and re-sharpening cannot be stated with much certainty. All of the Mississippian point forms are found in male and female areas of the domestic structures at Little Egypt, particularly in the shared production area (Area 1 in all three structures). Male knappers sharing this area may

have produced the generalized cutting “leaf”-shaped tools along with the more finely flaked Mississippian pp/k used for projectiles, knives, and even exchange. It is possible that women also produced these “leaf”-shaped points while working in these heavy processing areas adjacent to male knapping areas. Males and females may have flaked stone with a general understanding or template of the shape the tool should eventually take. This would make distinguishing the points of male and female knappers as difficult as identifying the works of different female potters (Gougeon 2000).

It is interesting to note that curated pp/k from earlier Archaic and Woodland periods are found primarily in female and shared activity areas (4 of 5 from Structures 1 and 2. The fifth curated point was recovered in the debitage deposits between Areas 1 and 3 in Structure 1.). In some cases these points appear to have been re-worked, perhaps by the last Mississippian period users of the tools. The fact that curated points do not often occur in male activity areas may be a reflection of different cultural attitudes toward flaked tool production by each gender. Males used points not only for hunting and warfare, but also as objects of exchange with other males (Matthiesen 1994:90, 92). Like males, females used points for specific cutting and scraping activities, but do not appear to have exchanged them in the same ways that males did. That is to say, if women were exchanging pp/k, it was then used as a tool by the woman who received it. Finely flaked Mississippian pp/k traded between men are found in male burials, suggesting that they were exchanged for social and not functional reasons (Matthiesen 1994). Women may have viewed Archaic, Woodland, isosceles triangular Mississippian pp/k, and “leaf”-shaped pp/k as tools, and not as points that could potentially be identified as being their products. Certainly males and females recognized some finely flaked pp/k as culturally loaded items that symbolized relationships or alliances between men. The exchange of points may have been the act that separated these pp/k from nearly indistinguishable copies found in fragments or re-touched into new forms in domestic activity areas.

Males and Household Production

Stone working is listed by Murdock and Provost (1973) and further verified by Smith (1978) to be a masculine activity. The durability of stone makes it one of the most commonly recovered materials from archaeological sites, the absence of which is quickly noticed (Williams and Jones 2001). As such, debitage, flakes, and complete and partial tools of many different types are widely dispersed throughout domestic structures at Little Egypt.

Evidence for male activity areas in domestic structures at Little Egypt is very sparse. A flint-working area containing debris from the production of flaked stone tools is found in Structures 1 and 2, but is not as evident in the final stage of Structure 3. In both Structures 1 and 2, males apparently shared a compartment to the right of the entrance with females. As previously discussed, a line of debris divides the two work areas within these single large compartments. Flint-knapping kits or tools commonly associated with them are found in these male activity areas. These smaller activity areas are located away from the shared adult bench area and might reflect the users' desire to keep sharp and hazardous flakes out of sleeping areas. This behavior has been noted in an ethnoarchaeological study of refuse disposal among the Lacandon Maya of Chiapas, Mexico (Clark 1991). There, knappers worked into a cloth to prevent debris from scattering across other living spaces, usually the kitchen. The debris was collected and removed to out-of-the-way places. All surveyed knappers cited the importance of keeping sharp flakes away from bare feet.

The near-absence of a large flint-working area in Structure 3 may be a product of extensive cleaning activities prior to the household's move to a summer structure. The paucity of artifacts in Structure 2 at Dog River (9DO45) is also believed to be the product of cleaning before abandonment (Poplin 1990). In this instance, however, the remaining artifacts appear to have been left in a more random distribution. The patterned distribution of artifacts observed in Structure 3 at Little Egypt is perhaps a result of the intended reuse of the structure during the next winter. Additionally, more artifacts were left in Structure 3 than

what was recovered from Dog River Structure 2, suggesting only items that were needed were brought out to the summer structure and outdoor work areas.

The close proximity of a stone working area and an initial food processing area in winter structures at Little Egypt is somewhat unexpected. However, if the foodstuffs coarsely processed in the shared activity area were taken across the structure to a female activity area for cooking and consumption, the hazards of flake debris becoming incorporated into food may have been somewhat mitigated.

As noted above, evidence of several activities are often found within the activity area of single gender. In these flint-working areas is also found possible evidence of non-flaked stone tool production, and wood or bone working. Abraders in several forms, percussion tools like celts and pitted cobbles, in addition to a wide variety of flaked stone points, blades, scrapers, and gravers, are all evidence of working materials other than just chert.

Males in some Little Egypt households may also have been involved in the production of stone pipes. An obvious activity area was found in Structure 3, as evidenced by several broken fragments of phyllite pipes in various stages of production, and a large piece of unworked phyllite. No tools were recovered from this area, so it is unclear what was used to drill holes into pipe stems and bowls. Because the structure was not occupied at the time it was destroyed these tools may have been removed for use outside, leaving only the broken wastes of previous efforts behind. It is also possible that the tools were organic and did not survive in the archaeological record.

Status and Households

Analysis of the three structures reveals two primary differences that may be related to the statuses of the households that inhabited them. First, the location of Structure 1 on a platform attached to Mound A is likely an indication of higher status. Chiefs, their families, and related elite are believed to have occupied domestic structures located on and near mounds (Hally 1996; Lewis et al 1998; Milner 1998). Architecture, domestic or otherwise,

placed atop mounds served as a visual reminder that a difference in status separated those who lived on the mound from those who lived in the village (Lewis et al 1998).

Second, the size of Structure 1 is twice that of Structures 2 and 3, which may also imply differences in status between the three households. The structuring of activity areas, living spaces, the central hearth area, and storage areas within Structure 1 are remarkably similar to those of Structures 2 and 3. Likewise, the physical structure itself was constructed like those in village contexts. In spite of the greater size of Structure 1, it appears as though the same cultural template was used to order activity areas and living spaces, as well as the basic construction plan of the dwelling.

This resembles what Richard Wilk (1983:113) refers to as a "closed" village economy. In closed village economies, social differences based on differential access to resources are concealed. Houses can vary in size, but not in quality, floor plan, or basic furnishings. In his case study with the Kekchi Maya, Wilk (1983) finds that houses are a symbol of village solidarity and equality. While I would not argue that all of the households of Little Egypt were social equals, the importance of maintaining or promoting a "united front" or group identity cannot be underestimated. Kay Sykes (1989) similarly suggests that status differences between the ruling elite and commoners of the sixteenth century Peruvian polity of Canta were masked in part by the use of a common dwelling form. The single house style promoted an "ideology of community interests" that disguised the unequal power relationships between the elite and the commoners (Sykes 1989:500).

Because of the size and location of Structure 1, I assumed there would be some differences in the activities of this presumed elite or higher status household when compared with the two structures from the village area. The provisioning of foodstuffs to chiefly elite has been discussed in literature on Mississippian chiefdoms (Hudson 1997; Muller 1997; Rees 1997; Welch 1996). If provisioning of the household in Structure 1 did occur, I would expect to find fewer activities related to the production of foodstuffs in Structure 1. Instead, my findings show remarkable similarities between the activities and structuring of activity areas

of all three households. Each household performed the same basic household production tasks. Activity areas with pottery, tools, and food remains are found in all three structures, and exhibit evidence of all stages of food production.

Status at Little Egypt may have been expressed in ways other than those of activity types and activity area structuring. For example, if provisioning of the chiefly elite had occurred, I would anticipate finding evidence of more (in quantity and quality) foodstuffs in Structure 1. Hally (1981) found no significant differences in the botanical samples from the three structures, suggesting a portion of the diets of elite and commoner households were similar. However, Janet Roth (1980) found some differences in the faunal materials recovered from the three structures. Higher quality cuts of deer, meat-bearing portions of bear, and a paucity of smaller taxa including fish from Structure 1 may be evidence of provisioning of elites, or perhaps reflects what food-types were considered proper for elite and commoner households (Rees 1997).

Absent from the three structures excavated at Little Egypt is any evidence of activities related to the production of status items. These items might include shell gorgets, beads, or engraved cups, chert swords or other finely flaked items, finely ground axes or celts, or finely made pottery, to name but a few. It is possible that households did produce these items at Little Egypt but were not uncovered during excavations.

The presence of pigment minerals in Structure 1 may be an indication of the higher status of the household. As is discussed above, pigments were found in male and female adult activity areas. The near-absence of pigment materials in the other structures suggests that perhaps the household in Structure 1 had more opportunities for the use of body-paints. If this household were closely related to the chief, as is presumed, it is possible they would have had more opportunities to participate in rituals or other public displays for which body painting and other symbolic decorations were required. Swanton (1946:528) mentions that men in particular painted themselves for “all official or semi-official occasions.” Different colors also

seem to have had different uses. For instance, red was used by warriors going into battle, while black was more commonly associated with mourning and death (Swanton 1946).

Models of Late Mississippian Household Activity Areas

Several studies have provided models of Late Mississippian household activities and are reviewed briefly here. In Hally's (1980) analysis of housefloors at Little Egypt he suggested that areas of the structures were used for specific activities, including storage, flaked tool production, and food preparation (Chapter 7). Gender assignments for particular activities were made based on ethnohistoric accounts. No attempt was made, however, to present a formal model of households for the site, region, or time period.

Through his work at the Toqua site Richard Polhemus (1987, 1990) devised a model of Dallas phase household activity structure. In this model the domestic structure was divided into public and private areas. A central hearth demarcated a public area where a number of activities took place, including preparation of food and activities requiring light from the fire. Private areas consisted of beds and storage areas. Beds were located along the walls. Corners were used for storage, with foodstuffs commonly found in the southeast corner; "non-food" in the northwest corner, and "general" storage in the northeast and southwest corners. Ethnographic accounts report individuals were buried near the bed they used in life. Polhemus used burial placements and associations between genders and specific activities to support claims for engendered areas of the structures. He suggested females were most often associated with the north and south walls, and males were associated with the west wall.

Polhemus (1998) revised this model in his doctoral dissertation, based on analysis of the Loy site (Figure 10.1). In the new model adult males are associated with the wall opposite the entrance. Adult females utilized the bed and area to the left of the entrance, and subadults were associated with the bed opposite the adult females. Storage areas are assigned to each gender in this refined model. Males utilized the storage area in the right rear corner of the structure, and females used the left rear corner. Food was stored in the

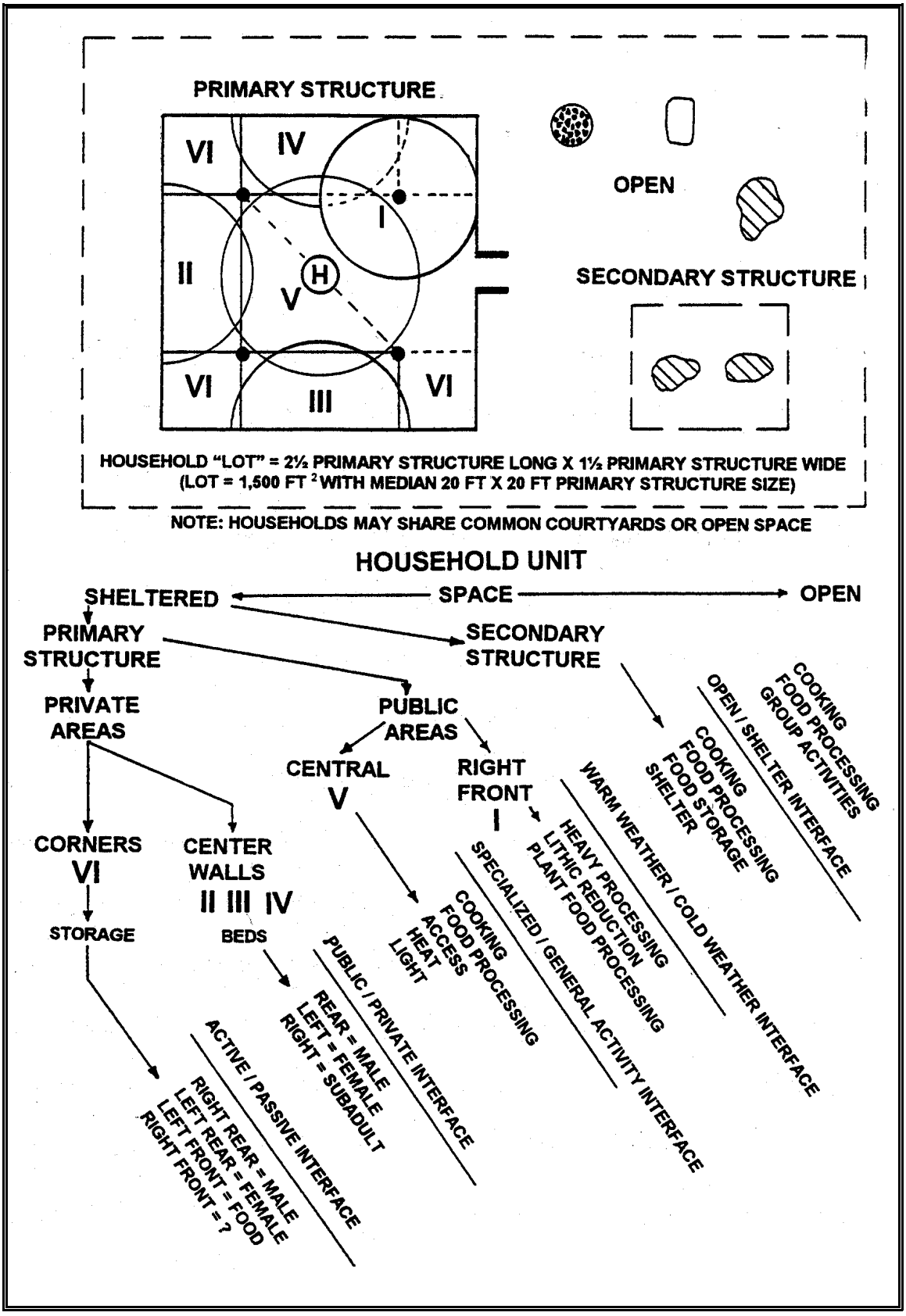


Figure 10.1 - Dallas phase household unit model (after Polhemus 1998)

front left corner. The right front corner was used for lithic reduction, plant food processing, and other "heavy" or initial coarse processing.

The model of Barnett phase household activity structure suggested by my reanalysis of Little Egypt households is similar to Polhemus' model (Figure 10.2). In the diagram of the Barnett phase household model presented here I have utilized some of the terminology presented by Polhemus to facilitate comparisons. As in the model of Dallas phase households, the Barnett phase domestic structure is divided into public and private areas. The area enclosed by the four central roof support posts and containing the central hearth (Area VI) demarcates a public area where a number of activities took place, including preparation of food and activities requiring light or heat from the fire. Private areas consist of those areas along the outer walls containing benches (Areas I, II, III, IV) and storage areas (Area V).

In the Barnett phase model the compartment immediately to the right of the entrance (Area I) contains both male and female activity areas. In Structures 1 and 2 evidence suggests males used a portion of the area immediately adjacent to the entrance, while females and males used the far end of the compartment. In Structure 3 this same compartment appears to have been cleaned prior to the fire that destroyed it, and evidence for these separate areas is sparse. The compartment across from the shared compartment is a female activity area (Area II), as seen in all three structures. It is possible that this female activity area was utilized by older subadult females, perhaps an older daughter of the female head of the household.

The compartment to the rear and right of the entrance is a shared bench area, likely utilized by the adult male and female heads of the household (Area III). While this area was likely the loci of some activities (ex. phyllite pipe production in Structure 3), it appears as though the primary activities were eating and presumably sleeping. In the model the compartment to the immediate left of the entrance is associated with subadults (Area IV). Storage areas (Area V) are found in those corners not used as entrances. These corners

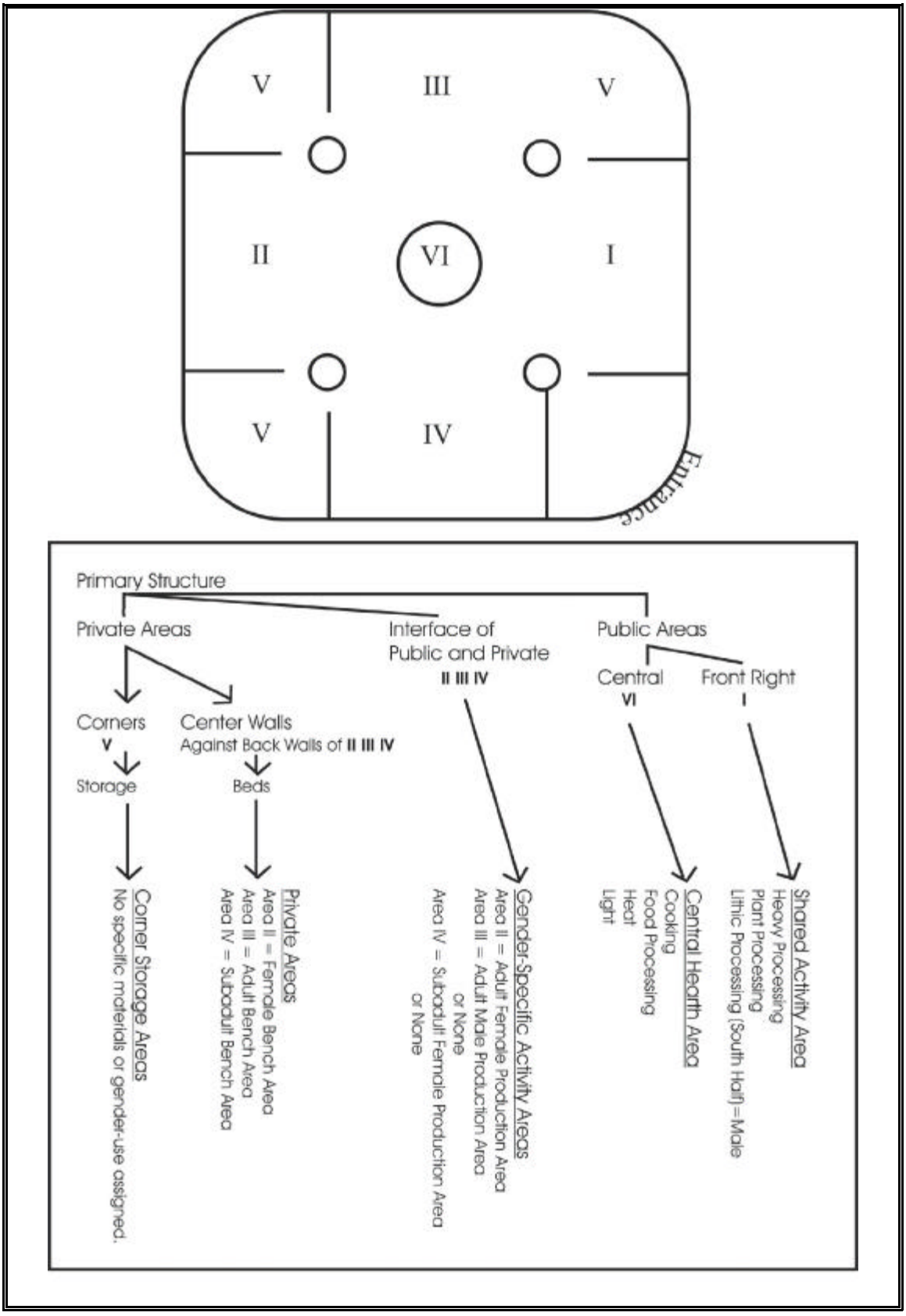


Figure 10.2 - Barnett phase household model

appear to have been used to store food items, vessels and vessel fragments (i.e. potential tools), non-flaked stone tools, and were also areas where trash accumulated.

Slight differences between Little Egypt households and the model are likely reflections of different household compositions. In Structure 1 the compartment to the immediate left of the entrance was divided into two smaller rooms by a partition wall. These areas might have been utilized by subadults of different genders, or by subadults of substantially different ages. No activities related to household production appear to have occurred in either of these smaller rooms. In Structures 2 and 3 this compartment is open but marked by evidence of female activities, suggesting that older female subadults utilized this area. If changes in age and status were also marked by changes in location within domestic structures, it is likely that the compartments to the left and rear-left of the entrance (Areas IV and II respectively) were flexible in their function. Occupants of these areas changed throughout the use-life of the structure (ex. older daughter occupying compartment to rear-left of entrance as other children are born and utilize area to the left of the entrance), or the activities that occurred within them changed with the added responsibilities of the occupants.

A comparison of Polhemus' and my model suggests substantial similarities between Dallas and Barnett cultures. For example, Polhemus (1998:300) identifies a large area just inside the entrance as a heavy processing area used by both males and females. This type of activity area is also seen in Structures 1 and 2 at Little Egypt. Minor differences include where adult female, adult male, and subadult activity areas are located. This appears to be influenced by the placement of the entrance (i.e. mid-wall at Toqua and Loy, and at the corner at Little Egypt). The designation of separate areas for household members based on gender, however, is more significant than their specific locations within the structures.

It is also interesting to note that in spite of the small differences in the physical layout of Dallas and Barnett phase structures, the layout and structuring of female activity areas and male activity areas are similar in both models. This is likely a reflection of exogamous marriage structuring, matrilineal and matrilocal principles, the division of labor by gender, and

the ubiquity and importance of female activities in households in the Late Mississippian Southeast.

In the Late Mississippian Southeast rules of exogamy dictated that individuals married outside of their lineage (Hudson 1976). Matrilineal practices likely included a matrilocal post-marital residence pattern, dictating that the husband move into his wife's household. Apart from the young unmarried sons of the households, adult males were "outsiders" to the lineages. Females attached to the household, including unmarried daughters, grandmothers, and the female head, were all related and part of the matrilineage that gave the household its identity. Females did not marry out of the household. Rather, they formed new households attached to their mother's, resulting in a pattern of household clusters centered on a common patio-like area (Hally and Kelly 1998; Kelly 1988; Polhemus 1987). As discussed earlier, females may have occupied several areas of the domestic structure as they matured and took on new roles. Unmarried males likely occupied only one area within their mother's household, and upon moving into their wife's household immediately occupied those areas utilized by the adult male head of the household.

Evaluation of Previous Studies

One goal of this dissertation was to produce maps of activity area structuring domestic structures at Little Egypt that are much richer than those from earlier studies (Hally 1980, Smith 1975). These studies have been reviewed in Chapter 5. As suggested above, my analysis shows a much more complex pattern of activity area structuring by the three households. For instance, Hally (Figure 5.9) identifies only three clusters of artifacts in Structure 1. These include an eating/work area (Concentration 1), a butchering and meat storage area (Concentration 2), and a plant food processing and storage area (Concentration 3). In general these concentrations correspond to similarly identified activity areas in the present analysis (Figure 9.1, areas 1, 2, and 4). Hally's analysis did not consider, however, the physical structure itself (ex. partition walls), nor did he suggest any other activities or concentrations of artifacts that might have indicated activities of other household members.

Smith's and Hally's analysis of Structure 2 are somewhat more complex than Hally's suggested activity areas for Structure 1. However, as discussed in Chapter 5, these concentrations are considered only as the loci of single activities. Interestingly, Hally also identifies two concentrations of artifacts along the southeast wall of Structure 2, which corresponds with the proposed activity areas 1 and 2 in this analysis (Figure 9.2). Hally's other concentrations roughly fall along the edges of proposed female activity areas suggested here.

Smith's analysis of Structure 2 also bears some similarities to the present analysis. First, the proposed separate activity areas along the southeast wall are also separated in Smith's diagram (Figure 5.11). Smith's eating and food preparation areas generally conform to parts of the shared adult activity area (Area 1) suggested here, though the broad area he suggests also encompasses the central hearth area. I find no evidence to support Smith's suggested sleeping and storage areas, particularly as they encompass large areas of the structure that are divided by partition walls. If single activities did occur along the entire southwest and northwest walls, we would not expect to see these areas subdivided with barriers.

Two-dimensional Analysis of a Three-dimensional World

One shortcoming of this analysis is the lack of ability to discern whether some materials originated above the floor. Presumably households in the Late Mississippian Southeast would have hung food, tools, and other materials from the rafters to keep them safe from dogs, vermin, and children, and also simply for storage. Nets, ropes, baskets, and bags may have been used to store and suspend items above the floor. It is possible that hooks and shelves were also located around the structures, although no archaeological evidence of these features have been identified in Southeastern domestic structures to my knowledge. Unfortunately, I am unable to address these possibilities using material evidence, as the structures were not excavated at that level of detail. Debris from the collapsed superstructures was not removed in such a way as to notice whether artifacts could have been sitting on or

suspended from the rafters. Other architectural features like hooks, suspension ropes, baskets, or shelves may not have been preserved in the archaeological record.

The possibility of materials originating above the floor has several implications for the analysis of distributions of artifacts from within the domestic structures. The first implication is obvious – not all materials recovered from the floors of the structures originated there. This calls into question some of the interpretations of the distributions of artifacts discussed here.

Second, if materials were stored above the floor, there is a possibility that they did not fall straight down. If a wall or rafter collapsed sideways, materials from different contexts may have been mixed. For example, stored items hung from a rafter may have been mixed with tools and debris from an activity that occurred on the floor of a compartment. Similarly, artifacts could have been deposited in an area where no activities regularly occurred, thereby complicating the actual pattern of activities in the structure.

Kids, Dogs, and Other Sources of Variation

A second shortcoming of this analysis is the inability to account for variation introduced to the distributions of artifacts by children and animals (domestic or otherwise). A rather commonsense approach to recognizing activity assemblages created by children is to look for artifacts that appear "out of place." That is to say, children may combine artifacts not normally used together in everyday tasks. One problem with this approach is that children in many cultures around the world often "play" by imitating adults. This may include mimicking domestic activities, which can potentially create assemblages identical to those created by adults actually performing the tasks.

The lives of children are little understood in the prehistoric Southeast. Ethnographic accounts provide us only brief glimpses into the activities and experiences of children in Indian societies. Often these accounts reflect the bias of the European or Euro-American observer. Early explorers and chroniclers of Southeastern Indian communities came with a patriarchal view of domestic relationships, in which women and children were very much under the control of the husband (Coontz 1992). Depending on the wealth of the family, the

wife and children may also have been heavily involved in production at the household level. As such, Swanton (1946) contains several references to children working alongside their parents. Young girls began helping their mothers at a rather early age (accounts vary, but suggest anytime between five and ten years of age), while young boys were soon taught the skills associated with manhood by their uncles, fathers, and grandfathers (Swanton 1946:710, 714-715, 718).

In addition to the unaccountable activities of children are impacts on the assemblage by dogs and vermin. The impacts of carnivores on zooarchaeological assemblages is well-understood (Reitz and Wing 1999:115, 133-135), and the impacts of rodents and other commensal animals on botanical assemblages has been lightly explored at Little Egypt (Hally 1981). Undoubtedly some scavenging of bones and plant materials occurred within these three domestic structures. Evidence of scavenging by dogs and vermin include obvious gnawed bones, but may also include materials packed into corners, rafters, under benches, or in other inaccessible places during the construction of nests. These latter types of evidence would be extremely difficult to detect, given that most of the scavenged materials are organic.

What influences children's play and animal scavenging may have had on the overall assemblage used to determine activity area patterning, however, are likely minimal. Overwhelming evidence of patterned activities overcomes the unaccounted for activities of kids and dogs. The repeated use of an area for a limited number of activities creates an accumulated trace of the materials commonly processed or used there. The repeated association of the artifacts in discrete activity areas can also be used to recognize when artifacts seem "out of place."

General Anthropological Significance of Study

There are several points to this dissertation research that are of some larger significance to anthropological archaeology. First, my research attempts to open the "black box" of Late Mississippian households. Households are not faceless groups of people working in concert to achieve common goals. My research attempts to examine who was doing what and where within domestic structures. This analysis considers resource flows within households as well as contributions of individuals to household production activities.

Second, a great deal of research in recent decades has emphasized the nature of chiefdom-level polities and the elites that lead them (Earle 1997; Muller 1997; Pauketat 1994; Scarry 1996), practically to the point of considering the village or polity as a "black box." My research begins to examine some of the questions pertaining to the society-at-large, not just the leaders. Who were these households presumably lead by the chiefly elite? How did they operate? What evidence is there for more direct involvement in chiefly activities, namely provisioning or production of status items? What kinds of interactions were there between households within a chiefdom? When we better understand variation between households, we can move beyond these smaller social units and begin to look at larger social structures and processes. This dissertation is but a small step in that process.

A thorough examination of activities within domestic structures also has applications to the analysis of outdoor activity areas. Activity areas within structures are identified by the co-occurrence of tools and materials used in particular tasks. Presumably some of these same activities occurred outdoors as well, although the lack of physical barriers may allow the materials to become more dispersed. At a minimum, this research demonstrates that males and females often worked in separate areas. I predict this structuring of activity areas will be observable in outdoor domestic contexts as well.

Summary and Conclusions

To summarize, through the use of statistical analysis, GIS, and intuitive pattern recognition techniques I have demonstrated that there is evidence of discrete activity areas.

By further examining the activities commonly performed by each gender in Southeastern Indian societies and discerning the tools, materials, processes, and expected artifacts for each activity, I have identified these activity areas to specific genders.

My findings at Little Egypt were used to develop a model of activity area structuring for Barnett phase households. This model is very comparable to Polhemus' models of Dallas phase households in east Tennessee, and suggests a wider pattern of activity area structuring may have been in place in other regions during the Late Mississippian period.

Opening the "black box" of Late Mississippian households has important implications for the study of production within chiefdom-level societies. As seen in this analysis of housefloors at Little Egypt nearly all of the activities that occurred within domestic winter structures were involved in production for domestic needs and consumption. The evidence suggests that many artifacts recovered from house floors are associated primarily with activities performed by females, namely those involved with food production. My research on activity areas paints a picture of individuals performing very different tasks for the common good of the household. Within domestic structures, however, it appears that females were the dominant forces behind production.

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APPENDIX A - SPECIES LISTS

SPECIES LISTS

Botanical species list:

corn (*Zea maize*)
hickory nut (*Carya* sp.)
acorn (*Quercus* sp.)
walnut (*Juglans nigra*)
butternut (*Juglans cinerea*)
plum (*Prunus* sp.)
passion flower (*Passiflora uvedalia*)
grape (*Vitus* sp.)
bean (*Phaseolus vulgaris*)
pokeweed (*Phytolacca americana*)
honey locust (*Gleditsia triacanthos*)
persimmon (*Diospyrus virginiana*)
bear's foot (*Polymnia uvedalia*)
muscadine (*Vitus rotndifolia*)
cane (*Arundaria* sp.)
smartweed (*Polygonum* sp.)
may pop (*Passiflora incarnata*)
gourd (*Lagenaria siceraria*)
squash (*Cucurbita pepo*)

Faunal species list:

white-tailed deer (*Odocoileus virginianus*)
Bear (*Ursus americanus*)
opossum (*Didelphis marsupialis*)
raccoon (*Procyon lotor*)
river otter (*Lontra canadensis*)
squirrel (*Sciurus* sp.)
cottontail rabbit (*Sylvilagus* sp.)
common cotton rat (*Sigmodon hispidus*)
beaver (*Castor canadensis*)
bobcat (*Lynx rufus*)
canine (*Canis* sp.)
rodent (Order Rodentia)
box turtle (*Terrapene carolina*)
slider turtle (*Pseudemys*)
map turtle (*Graptemys*)
painted turtle (*Chrysemys*)
catfish (*Ictalurus* sp.)
freshwater drum (*Aplodinotus grunniens*)
gar (*Lepisosteus* sp.)
sunfish (*Lepomis* sp.)
redhorse sucker (*Moxostoma carinatum*)
non-poisonous snake (Family Colubridae)
poisonous snake (Subfamily Crotalinae)
wild turkey (*Meleagris gallopavo*)

APPENDIX B - DATA BY STRUCTURE

APPENDIX B - DATA BY STRUCTURE

The following tables contain data used in this dissertation. All botanical and faunal materials are listed by weight in grams. Other artifact classes are simply counts. The figures for each structure are based on Hally (1980).

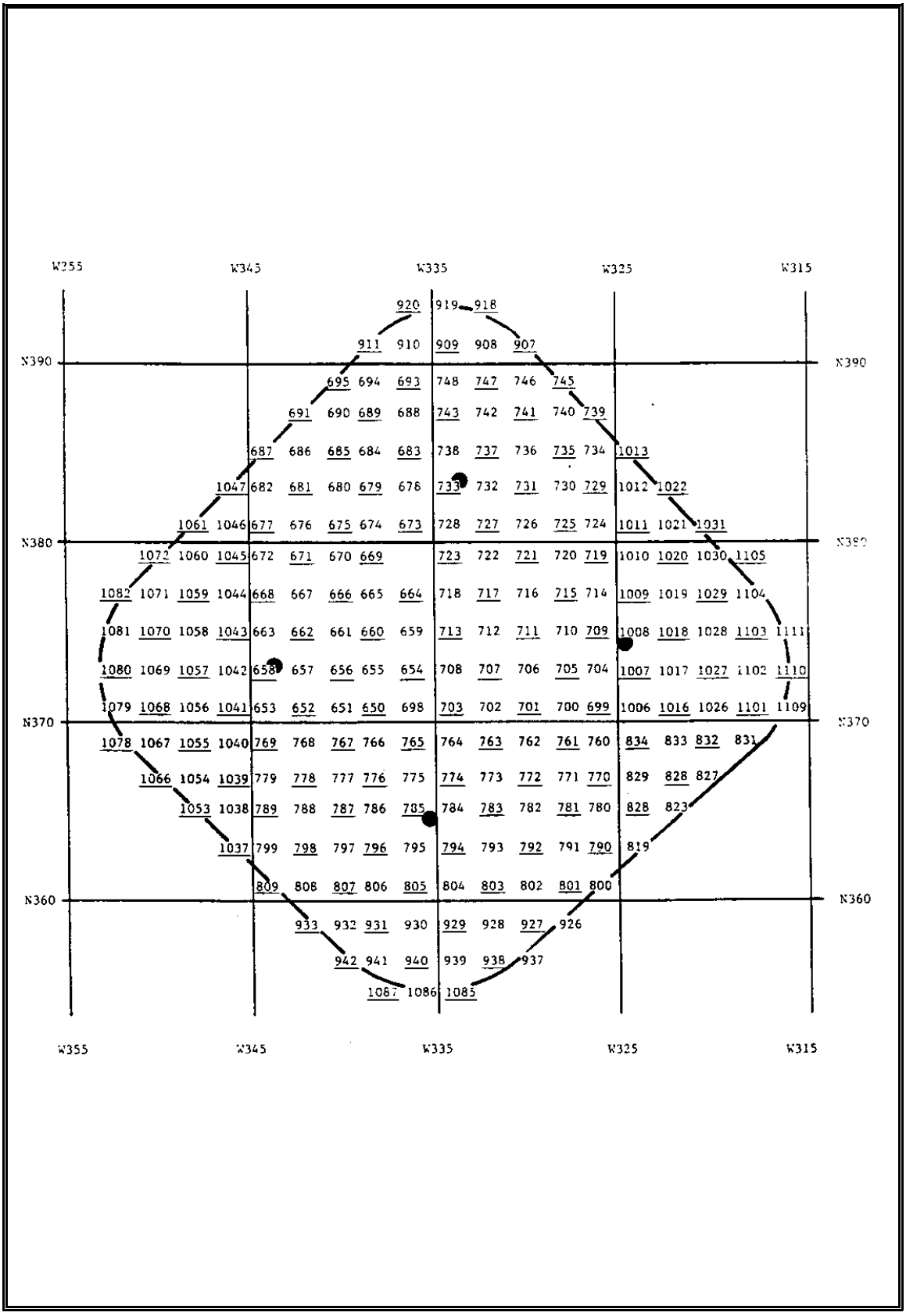

Figure B.1 - Structure 1, 2-ft. square flotation lots (after Hally 1980)

Lot #	Sherds	Discs	Cer. Pipe	Stone Pipe	Misc.		Lot #	Sherds	Discs	Cer. Pipe	Stone Pipe	Misc.
654	2											
656	18						736	1				
658	4						737	2				
660	1						738	9				
661	17				1		739	5				
662	1						740	1				
663	4						741	1				
665	9						742	14	1		1	
667	2						743	12				
668	3						747	3				
669	4						748	4				
671					1		760	2				
672	4						762	2				
673	4						763	1				
674	6						765	1				
678	4						766	2				
679	1						767	7				
680	2						769	6				
681	1		1				771	1				
682	1				1		773	1				
683	2		2				774	1				
684	2						775	1				
685	3						776	3				1
686	3		1				777	2				
687	6						779	2				1
689	1						780	8				
693	3						782	3				
695	2						783	6				
699	1				1		784	3				
700	2						785	6				
704	3						786	7				
707	1						788	4				
709	3						790	2				
714	1						791	3				
716	1						792	7				
717	1						793	3				
718	6						795	2				
719	1						797	4				1
720	4						798	5	1			1
721	1						799	2				
722	1						800	4				
723	6						801	4				
724	12						809	5				
725	4						819	1				
726	2						823	3				
727	3						824	1				
728	4						827	1				
729	9		1				828	8				
730	4						829	6				
732	9						831	7				
733	4		1				832	1				

734	7						833	3				
735	3						834	2				

Lot #	Sherds	Discs	Cer. Pipe	Stone Pipe	Misc.		Lot #	Sherds	Discs	Cer. Pipe	Stone Pipe	Misc.
907	4						1058	5				
908	3						1059	3				
909	1						1060	1				
910	1						1061					1
918	1						1066	5				
919	5						1067	1				
920	3						1068	2				
926	2						1069	25		1		
927	1						1070	1				
928			1				1071	1				
929	6						1072	3				
930	5						1078	6				
931	2						1079	11				
932	1						1080	2				
933	5						1081	3				
937	2						1085	5				
938	4	1					1087	3				
939	9						1101	12				
941	7						1102	2				
942	3						1103	14		1		
1006	1						1104	2				
1007	3						1105	1				
1009	1						1109	3				
1010	3						1110	1				
1011	14						1111	10				
1012	18											
1016	10		1									
1017	3											
1019	1											
1020	5											
1021	4											
1022	7											
1026	5											
1027	4											
1028	3											
1029	4	1										
1030	4											
1031	1											
1037	2											
1038	3											
1040	2											
1042	2											
1043	8											
1044	12											
1045	2											
1046	1											
1047	1											
1053	22											
1054	2											

1055	1											
1056	10											
1057	1											

Lot #	Flakes	PP/K	Bifacial	Core	Grinding	Perc.	Misc.
658	1			1			
660	1						
662	3						
663					1		
669	2						
671	2						
673	2						
678	4						
679		1	1				
680	1						
682	1						
684	2				1		
687	6						
689					1	1	
695	1						
700	2						
701	1						
703	2						
704	2						
709	2						
719	5	1		1		2	
720	2						
721	2			1			
723	1						
724	119	3	2	3	2	1	
725	5						
726	4	1			1	1	
727	6					1	
728	4						
729	73	4					
730	17		1	2	1		
731	2					1	
732	2				1		
733	2						
734	227		1	1			
735	18	1			1	2	
736					1	1	1
737			1				2
738	2						
739	12						
740					1		
741	1				2	2	
742	1						
747	2						
763							1
764	1						
770	1						
771	3						
776	4					1	
777	1						

778	1						
780	3	1					
783	3						
Lot #	Flakes	PP/K	Bifacial	Core	Grinding	Perc.	Misc.
784	1				1		
785	1						
786	2		1				
788	4						
790	2						
792	1						
793	1						
795	1						
797	2	1					
798	1						
800	1						
801	1						
805		1					
809	1						
819	1						
824						1	
829	3						
831	3						
832	1						
833	1						
908	1						
910	1						
911	1						
919	1						
920	1						
926	2						
928	1						
930	1						
933	1					1	
937	2						
938	1						
939	2					1	
942	1		1				
1007	3						
1009	1						
1010	3						
1011	3			1	1	5	
1012	22	2		1			
1013	1				1		
1019				1			
1020	3						
1022	18				1	2	
1027	1						
1028	3						
1029	1						
1030	86						
1039	1						
1040	1						
1041					1		
1042	2						

1043		1					
1044		1					
1047	1	1					
Lot #	Flakes	PP/K	Bifacial	Core	Grinding	Perc.	Misc.
1054	2						
1056	1						
1057	2						
1058	4						
1060	1						
1061	1						
1066	2						
1069	2					1	
1087	1						
1102	1						
1103	4						
1109	1						
1111	2						

Lot #	Kernals	Cob Frag.	Hickory	Hickory	Hickory	Hickory	Acorn	Walnut	Seeds
			> 11.5 mm	> 5.5 mm	> 2.5 mm	< 2.5 mm			
656		0.12							0.57
658		1.22	0.3	0.1	0.62	0.01			0.02
660		0.1							0.04
662					0.06				0.01
664									0.02
666			0.27	0.2	0.13				0.06
668		0.01			0.02				
669		0.01			0.07	0.06			
671									0.13
673	0.03	5.28	7.92	7.47	20.48	2.46		0.18	0.44
675					0.02				0.02
677				0.05	0.04	0.06			
679				0.2	0.63	0.03			
681					0.03	0.01			
683		4.22	5.13	5.56	9.65	0.15	0.2	0.03	1.03
685		0.03		0.42	0.19			0.04	
687		0.08	0.3				0.03		
695	0.01	0.11		0.15	0.3				0.13
699		1.07	1.8	0.62	0.64	0.02			0.05
701	0.08	0.07							
703		0.02							
709			0.2				0.06		0.17
713		0.06							
715		0.02	0.79						0.27
717	0.05	0.03	0.2	0.09	0.01			0.12	
719		3.39	11.82	3.26	6.03	0.27	0.28		1.01
721	0.16	3.52							0.16
723		0.02							
725	0.01	0.69	0.47	0.03	0.52	0.02		1.02	0.02
727		0.44			0.07				
729	0.02	2.75	3.1	0.63	1.18	0.01			0.36
731	0.51	3.18	9.27	2.3	0.69	0.01			1.12
733	0.09	4.57	8.27	4.58	6.01	0.06	0.38		1.13
735	0.3	11.12	13.84	7.93	9.99	0.07	0.93	3.41	1.43
737	0.12	4.64	0.95	0.46	0.37				0.31
739		8.88	7.67	3.04	1.66	0.02	0.2	1.28	0.05
741		0.01	0.21	0.57	0.39		0.06		0.15
743	0.32	1.2	2.58	0.57	0.96				0.34
747			0.26	0.32	0.05		0.11		
767									3.29
770	0.1		0.2				0.06		0.12
774				0.12					0.61
776			1.02	0.14	0.08				1.07
778				0.3					0.59
781							0.01		0.01
783				0.1					0.17
785	0.07			0.1	0.16				0.44
787			1.66	0.13	0.08	0.01			3.15
790									0.03
792					0.17				0.03
794		0.13			0.13			0.08	
796	3.11	0.21		0.05					0.06

Lot #	Kernals	Cob Frag.	Hickory > 11.5 mm	Hickory > 5.5 mm	Hickory > 2.5 mm	Hickory < 2.5 mm	Acorn	Walnut	Seeds
798	0.08								0.08
801									0.14
803				0.26	0.19	0.01			0.19
805		0.05							
807		0.01							
809		0.02							
824		0.01	1.57		0.09		0.37		
828					0.04				
829									0.03
909		0.07							0.05
911		0.03							
918	0.09								
920		0.02							
927			0.23	0.12	0.19				
929									0.01
931	0.02	0.22		0.38	0.37				
933		0.01							
938	0.05	0.01							
940		0.12	0.23		0.06	0.01			
942	0.08			0.06	0.04				
1007		0.01							0.06
1009		0.05		0.33	0.15				0.01
1011							0.04	0.08	0.09
1022				0.09					0.08
1027									0.02
1037					0.07				0.01
1039		0.76		0.06	0.06	0.02			0.04
1041	0.16	0.25		0.1	0.04	0.01			
1043	0.08	0.02		0.48	0.22	0.01			
1045	0.01	0.03	0.23				0.02		
1053	0.11		0.31						0.05
1057		0.1						0.08	
1059	0.07								
1061		0.02			0.05				
1066	0.04	0.02							
1068			4.23		0.02				
1070	0.18	0.06		0.12	0.08	0.02			
1072	0.09				0.04				
1080		0.01							
1082					0.32				0.02
1085			1.54	0.14	0.24				
1101									0.07
1103		0.01							
1110		0.41	0.08	0.17	0.15				0.12

Lot #	Odo. virg.	ursus	ID Mammal	UID Mammal	Bird	Turtle	Snake	ID Fish	Shell	UID
650				0.01						0.04
654		8.7								2.02
656	21.3			2.38						0.6
658	10.36	19.48					0.1		0.64	7.75
660						0.1				0.01
662				1.75	0.03		0.15			2.55
666	4.64									1.32
668				0.1						6.76
673	48.68	12.56		9.61	0.06	0.56				14.2
677										1.14
679				0.94	0.36					1.74
681	7.48	2.61		0.62						
683				8.54						5.2
685										0.8
687										0.45
689							0.01	0.01		2.7
691										0.16
693						1.1				3.62
695				0.86						0.44
699				3.97	0.38	0.6				1.38
701										1.64
703										1.46
707										1.63
709				1.6						0.94
711										0.3
715				2.13						4.16
717				9.87		0.4				
719	67.32	7.87		0.01		0.45				27.65
721	1.74									1.08
723						0.2				0.38
725				6.26						1.15
727	5.4		0.9							0.83
729				1.23		2.41				5.97
731	10.93			1.14						0.42
733		1.95		3.2						1.28
735	37.69	10.18		16.29		0.3				13.36
737		0.91								
739	4.21									3.67
741	1.1			1.95						3.08
743				3.96		0.24				1.69
747	14.51			1.19						3.1
763										0.68
765										1.45
767		17.07								1.16
769				0.03						
770						0.17		0.02		0.82
774	14.52									1.1
776				7.6		0.47				0.91
778										1.52
781				4.61		0.71				2.7
783						1.56				1
787	19.26									
785	12.73		0.01						1.02	3.91

Lot #	Odo. virg.	ursus	ID Mammal	UID Mammal	Bird	Turtle	Snake	ID Fish	Shell	UID
790	0.13									1.26
792	5.66					0.23				1.75
798	10.47			7.53						
801	1.14			8		1.63				0.52
803						0.13				1.17
805						0.05				0.26
807				1.6		0.3				1.45
809	0.22					1.24			0.25	1.07
824										0.08
828						0.22				0.25
829				1.98						
832										0.12
834										0.92
907	14.88									
909										0.2
911										0.57
927										0.3
929	9.75									
931										0.05
933						0.96				0.66
938						0.57				0.77
940										1
942	2.94					1.27				3.77
1007										2.05
1009	0.93									1.58
1011	3	3.61								6.99
1016										0.07
1020				0.67		0.61				3.4
1022		8.05		3.61		0.15				
1027	0.9			1.67		0.26				
1029				1.14						
1037										0.72
1039										2.44
1043	37.92	25.7								2.46
1045						0.08				0.9
1047				0.38						0.5
1055						0.3				
1057	9.97	3.63		1.25		12.8				9.14
1059	13.61				1.64			2.37		3.82
1061										0.53
1066										0.56
1068	0.37			6.8						1.67
1070	0.31			0.04						1.14
1072						0.32				1.05
1080						0.12	0.14			0.57
1082				5						
1085						0.36				0.72
1087										0.35
1101				1.54						1.5
1103	11.2					0.12				2.27

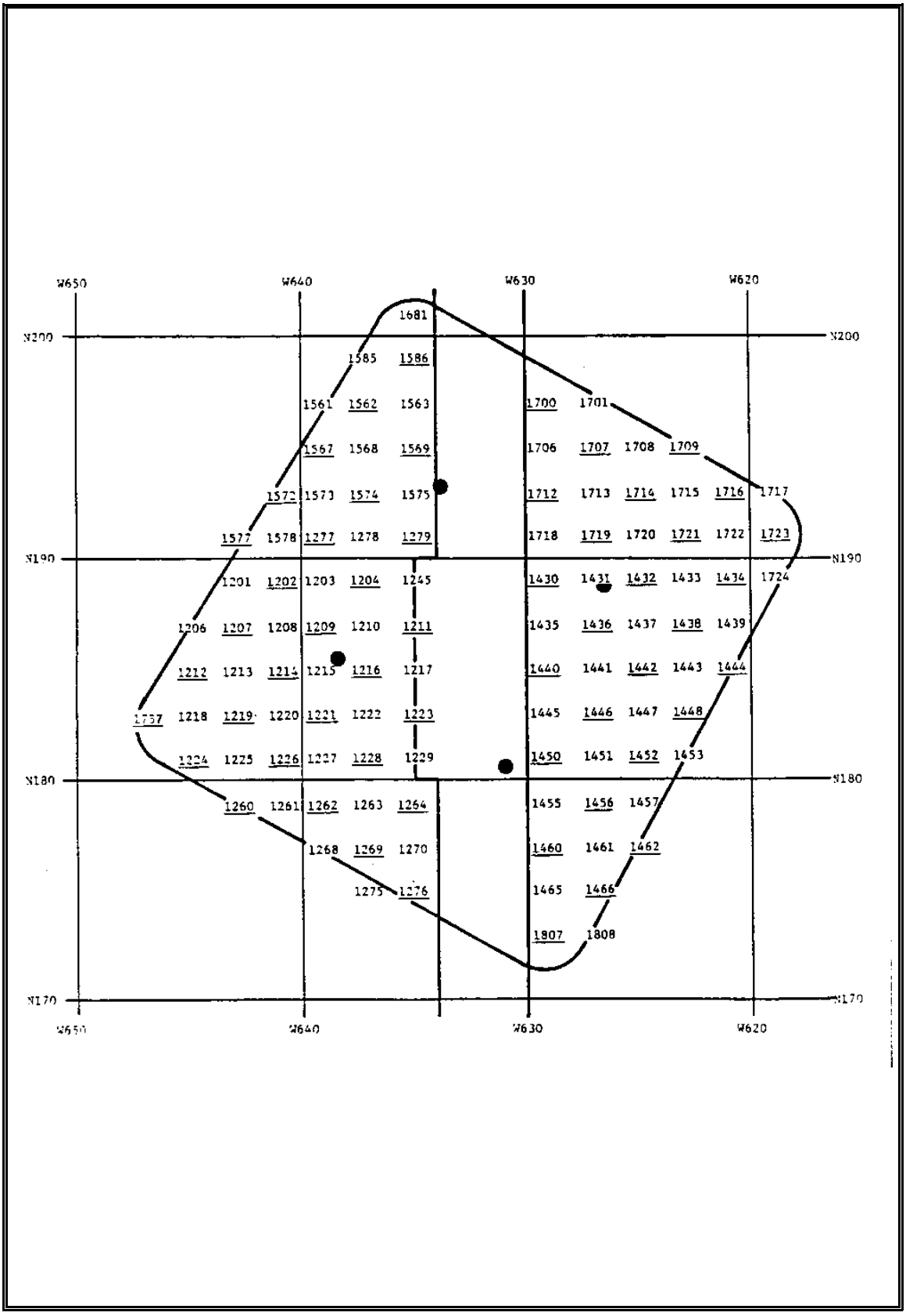

Figure B.2 - Structure 2, 2-ft. square flotation lots (after Hally 1980)

Lot #	Sherds	Discs	Cer. Pipe	Ornament		Lot #	Sherds	Discs	Cer. Pipe	Ornament
1200	7					1451	7			
1202	22					1452	36			1
1204	20					1455	15		1	
1207	6					1456	52			
1208		1				1457	16			
1209	7					1460	13			
1211	3					1461	19			
1212	14					1462	21			
1214	21					1465	13			
1216	4					1466	7			
1218	23					1561	13			
1219	15					1562	11			
1221	9					1563	16			1
1223	10					1567	1			
1224	10					1569	6			
1225	14					1572	16			
1226	9					1573	9			
1227	15					1574	16			
1228	3			1		1575		2		
1229	17					1577	26			
1260	18					1586	7			1
1261	13					1700	10			
1262	4					1707	23			
1263	6					1709	18			
1264	13					1712	20			
1265	48					1714	22		1	
1267	12					1716	18			
1269	6			1		1718		1		
1275	5					1719	27			
1276	2					1721	19			
1277	25					1723	29			
1278	2					1757	10			
1279	8					1807	10			
1430	40									
1431	43									
1432	32									
1433	29									
1434	23									
1435	1									
1436	39									
1437	49		1							
1438	16									
1439	13									
1440	29									
1441	52		1							
1442	51									
1443	25									
1444	10									
1445	23									
1446	56									
1447	22			1						
1448	31									
1450	25									

Lot #	Flakes	PP/K	Bifacial	Core	Grinding	Percussion	Misc.
1200	8						
1202	57	1					
1204	16			1			
1207	7						
1209	8			1			
1211	5						
1212	36						
1214	11						
1216	6						
1218	5						
1219	39						
1221	39						
1223	15						
1224	28						
1225	8						
1226	174						
1227	6			3			1
1228	5						1
1229	3						
1260	27						
1262	17						1
1263	2						1
1264	47	2			1		
1265	37						
1267	27						
1269	10	1					
1276	11	1					
1277	3						
1279	1						
1430	11				1	1	
1431	11						
1432	17			1	1		
1433	2						
1434	21						
1436	9						
1437	5			1		1	
1438	8						
1439	4						
1440	73						
1441	23	3					
1442	150						
1443	22	1				1	
1444	8	1				1	
1445	2						
1446	210	1		1			
1447	90	4					
1448	301	1		2			
1450	123						1
1451	21	2		1	1		
1452	478	6	7	3	1		1
1453	18	7	3	1	2		
1455	1				1	2	
1456	56	1		2			

Lot #	Flakes	PP/K	Bifacial	Core	Grinding	Percussion	Misc.
1457	111	4	6	5			
1460	8		2	1			
1461	33	2					
1462	19						
1465	3			1			
1466	20						
1562	3						
1563	4						
1567	7						
1569	5						
1572	3						
1573			1				
1574	4						
1577	4						
1585		1					
1586	1						
1700	4						
1701					1		
1707	4	1					
1709	11					1	
1712	8						
1714	2						
1715		1					
1716	14						
1719	18						
1721	9						
1723	10						
1757	37						
1807	66						1

Lot #	Kernals	Cob Frag.	Hickory > 5.5 mm	Hickory > 2.5 mm	Hickory < 2.5 mm	Acorn	Walnut	Seeds	UID Plant
1202		0.2		0.17	0.52				
1204		0.01		0.12	0.2	0.05			
1207	0.03	0.07		0.21	0.65	0.05			
1209	0.01	0.02		0.09	0.14				
1211		0.01					0.33		
1212	0.01	0.05							
1214			0.05	0.01					
1216			0.1	0.23				0.08	0.1
1219		0.03							
1221	0.02			0.05	0.17	0.05			
1226	0.01	0.05		0.01	0.13	0.05			0.14
1228		0.03		0.02					
1260	0.08	0.23		0.32	1.06	0.05			0.57
1262		0.02		0.2	0.13	0.05			0.17
1264	0.02	0.01		0.12	0.2	0.05	0.05		
1267	0.09	0.04		0.08	0.15				
1276			0.08						
1277	0.07					0.05	0.05		
1430		0.02		0.02					
1432	0.1	0.01					0.05		0.36
1434		0.04		0.01	0.04	0.05			0.07
1438	0.01								
1440	0.07			0.02					
1442	0.01	0.03		0.09	0.08	0.05			
1443				0.28	0.22				
1444	0.02	0.05		0.08	0.02				
1446	0.01	0.1		0.1	0.12				
1450		0.06		0.17	0.05	0.05			
1452		0.12	0.07	0.4	0.53		0.05		0.42
1456	0.17	0.01			0.03				0.23
1460		0.01		0.04					
1462				0.05					
1466		0.01	0.09	0.29	0.06				0.05
1562		0.08		0.03	0.02				
1567					0.04				
1572		0.02							
1700	0.06	0.03		0.05	0.01		0.05		
1707					0.01				
1709		0.03	0.09	0.15	0.04				
1712	0.07	0.01		0.23	0.02				
1714		0.01		0.08		0.05	0.05		
1716	0.04	0.03		0.05	0.01				
1719	0.01	0.01		0.24	0.27	0.05			0.22
1721	0.02	0.02		0.2	0.1	0.05			0.15
1723				0.04	0.02				
1757	0.02	0.02							
1807	0.05	0.02		0.1	0.09		0.05		0.08

Lot #	Odo. virg.	ursus	ID Mammal	UID Mammal	Bird	Turtle	Snake	ID Fish	Fish	Shell	UID
1200			0.01			0.04					0.68
1202	0.16		0.02	2.98		0.16					6.66
1203	0.21										
1204	0.04		0.03	0.57		0.12		0.01			1.47
1206									0.01		0.01
1207											0.12
1208	0.07					0.16					2.8
1209				1.85		0.02					0.45
1210			0.01	0.04				0.01			0.36
1212	0.17			0.5		0.03					0.44
1213	0.11			4.69		0.15					1.45
1214				0.49							1.1
1215				0.78							0.38
1216	0.32			0.47							0.26
1217				0.01							0.13
1218						0.16					0.6
1219	0.89			0.65							1.9
1220	19.39			1.08		0.04			0.01		2.23
1221	0.07										0.92
1222											0.08
1223	0.06					0.06					0.67
1224	0.09			1.48		0.17					0.73
1225				0.01		0.06		0.01			1.27
1226											0.43
1227			0.01								8.9
1228				0.01		0.1					
1229				0.01							
1260						0.3		0.01			3.04
1261											0.58
1262			0.01			0.01					1.92
1264	0.01					0.4		0.01	0.01		3.36
1265	3.97		0.02	0.53		0.24		0.01			3.97
1267	0.11		0.01	0.63		0.24		0.02			3.23
1268						0.08					0.78
1269	0.03					0.03				2.51	0.1
1270											0.08
1276						0.08					0.24
1279											0.06
1430				3.61							0.91
1431											0.03
1432	0.09			3.51		0.02					3.94
1433			0.01	2.02							5.9
1434	0.47			6.23		2.48		0.14			10.88
1436	0.03			1.31							
1437	0.13			1.58		0.04					1.74
1438	10.21	9.3	0.01	5.07							0.17
1439											0.22
1440	5.66		0.01	2.12		0.04		0.01			2.68
1441											0.36
1442	4.69			2.05		0.04		0.02			2.46
1443											0.05
1444	18.33			1.19		0.64				1.67	1.3
1445	0.16			1.33		0.07					0.54

Lot #	Odo. virg.	ursus	ID Mammal	UID Mammal	Bird	Turtle	Snake	ID Fish	Fish	Shell	UID
1446			1.52			0.09		0.03			1.29
1448											0.4
1450				0.87		0.37					4.4
1451	0.03										0.25
1452	0.19		0.01	5.34		0.85				1.37	5.47
1453			0.14	0.77		1.06	0.1	8.64	0.19		4.86
1455				0.5		0.4		0.01			0.83
1456	0.04			1.41		1.7	0.01	0.01	0.01		8.33
1460											1.76
1462											0.02
1466	0.43			3.18		0.43	0.01	0.01			4.36
1562											0.47
1567			0.01	0.21		0.17					1.3
1569				0.45							
1572	11.41	15.2		0.29							0.18
1574											0.1
1577				0.99						0.45	0.05
1586				1.15							
1681				0.66							0.39
1700	0.06			9.37							0.6
1707	6.26	1.39		1.33		1.41					1.2
1709		0.8		1.67							0.99
1712						0.43		0.05		0.05	0.76
1714				0.6		0.35					0.15
1716	0.69			1.63		0.03					1.17
1719	10.05			1.55		0.37		0.01			3.83
1721				0.65		0.38					1.06
1723	9.36			0.87							0.21
1757				0.43		0.14					1.52
1807	0.1		0.3	0.04	0.02	0.15	0.02			0.54	3.43

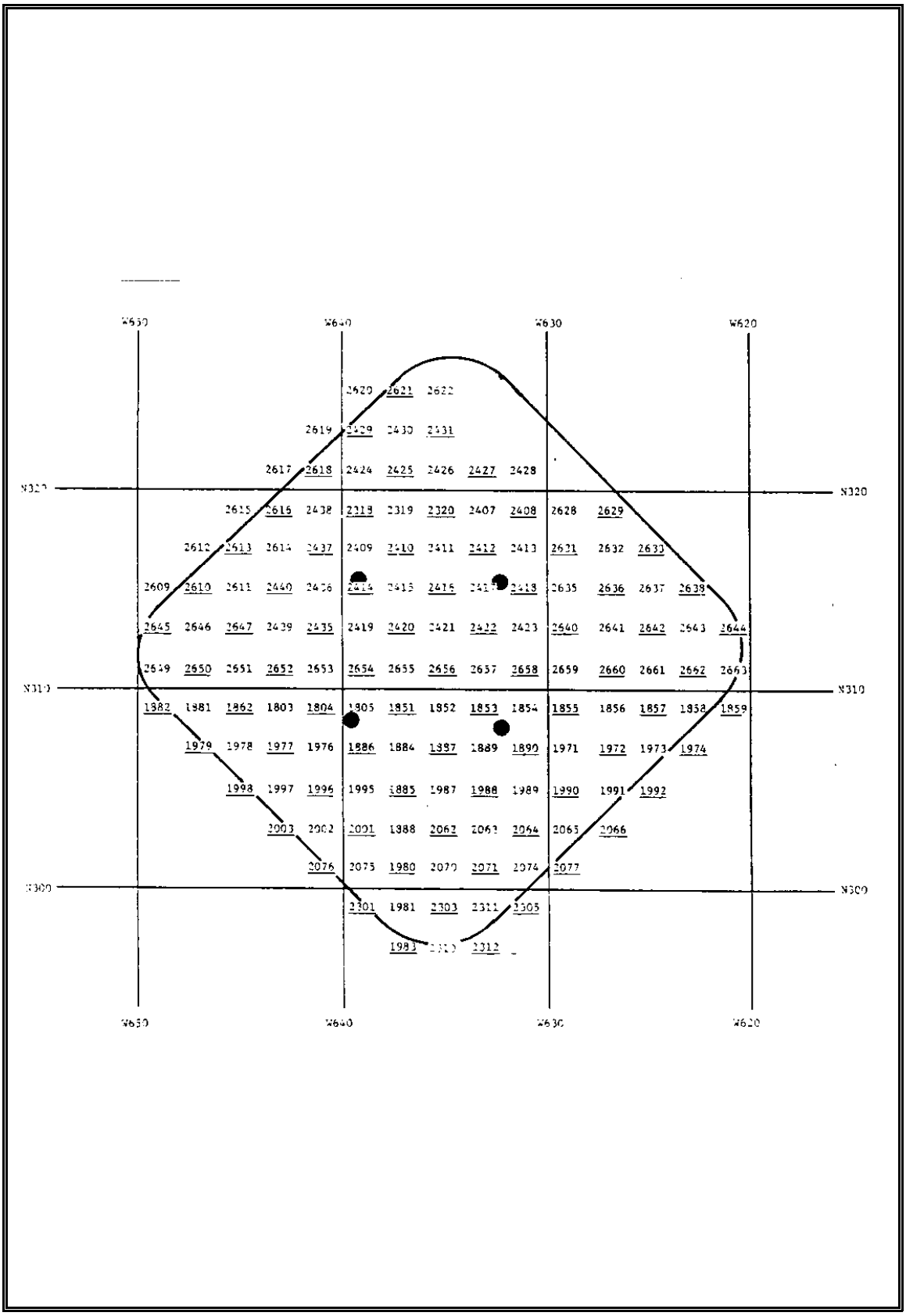

Figure B.3 - Structure 3, 2-ft. square flotation lots (after Hally 1980)

Lot #	Sherds	Discs	Cer. Pipe	Stone Pipe	Ornament	Hist. Beads
1803	11					1
1804	4					
1805	6					
1851	1					1
1852	1					
1853	1					2
1854	1					6
1856	1					1
1857	2					
1858	4					
1859	7					
1860	1					
1862	1				1	
1881	9					
1882	7					
1887	1					1
1888						1
1889						2
1890	3					2
1971	9					1
1972	3					1
1973	7					
1974	5					
1975	1					
1977	5				1	
1978	9					
1979	6					
1980	4					
1981	42					
1983	2					
1984	19					1
1985	6					
1987	11					4
1988	2					6
1989	7					3
1990	7					1
1991	2	1				1
1992	6					
1993	6					
1994	1					
1995	1					
1996	5					
1997	3		1			
1998	14					
1999	7					
2001	6					
2002	1					
2003	2			1		
2004	14					
2062						2
2063	5					1
2064	2					1
2065	9					

Lot #	Sherds	Discs	Cer. Pipe	Stone Pipe	Ornament	Hist. Beads
2066	6				1	
2067	2					
2070	8					
2071	2		1			
2074	3					
2075	11					
2076	6					
2077	2	1				
2079	14					
2080	8					
2301	17				1	
2302	7					
2303	11		1		2	
2304	7					
2305	8					
2306	4					
2307	2					
2308	6					
2310	9					
2313	1					
2314	5					
2315	4					
2316	7					
2318	1					
2319	11			1		1
2320	1					
2407	4					1
2408	16					
2409	9		1			4
2410	1			4		3
2411						1
2412	6					1
2413	11					
2414	1					
2415	1					
2416				1		
2417	1					1
2418	11					3
2419	11					
2420	1					
2421	1					
2422	2			1		1
2423	6			1		
2424	7					
2425	6					
2426	8					
2427	2					
2428	1					
2429	5					
2430	11					
2431	6					
2435	8					
2436	5					2

Lot #	Sherds	Discs	Cer. Pipe	Stone Pipe	Ornament	Hist. Beads
2437	3					1
2438	3					7
2439	5					
2440	4					
2609	1					
2610	4					
2611	2					1
2612	2					
2613	5					3
2614	3			2		4
2615	4					
2616	5					2
2617	3					
2618	6	1				
2619	13					
2620	3					
2621	1			1		
2622	11					
2628	8					
2629	8					
2631	5					
2632	11					
2633	13					
2635	13					
2636	8					1
2637	11					
2638	4					
2640	1		1			
2641	18					
2642	19	1			1	1
2643	6					
2644	12		1			
2645	1					
2646	16					
2647				1		1
2648	15					
2649	12					
2650	4					
2651	6					
2652	2					
2653	2					
2654	1					
2656	3					
2657	6					
2658	8					2
2659	9					
2660	19					3
2661	14					
2663	1					
2664	4					
2668	3					

Lot #	Flakes	PP/K	Bifacial	Grinding	Perc.	Misc.		Lot #	Flakes	PP/K	Bifacial	Grinding	Perc.	Misc.
1803					2			2422	16					
1804	13				2			2424				1		
1851	1							2425	28					
1857	5							2427	2					
1859	1							2429	16	1				
1862	1							2431	36					
1882	16							2435	15					
1885	17							2437	15					
1886	4							2440	5					
1887	2							2610	16					
1890	24			1				2612				1		
1972	23							2613	18					
1974	3							2616	17					
1977	21			2				2618	1					
1979	25							2621	8					
1980	235	1				1		2629	1					
1981		5						2631	27	1				
1983	13							2633	5					
1988	19				1			2636	53					
1989		8						2638	7					
1990	43	1			1			2640	7				1	
1992	7							2641			1			
1998	16							2642	19					
2001	39				1			2644	13	1				
2003	24							2645	23					
2062	34							2647	36					
2064	96							2648	18					
2065		1	1	2				2650	18	1				
2066	6	1						2651		1				
2068	8							2652	18					
2071		4	14					2653					1	
2076	31							2654				1		
2077	54							2656	1					
2301	87							2657			1			
2302								2658	11				1	
2303	19	5	1					2660	2					
2305	12	1		1				2662	14					
2307	2							2663		1				
2308	2							2664	5					
2310		2						2668		1				
2314	7													
2315	11													
2317	7													
2318	13	1												
2319			1		1									
2320	12													
2408	11		1											
2409														
2410	9	1			1									
2412	9													
2414	2													

2418	34													
2420	1													

Lot #	Kernals	Cob Frag.	Hickory > 11.5 mm	Hickory > 5.5 mm	Hickory > 2.5 mm	Hickory < 2.5 mm	Acorn	Walnut	Seeds	Squash	ID Bot.	UID Bot.
1804	0.01	0.42			0.02		0.01			0.31	0.01	0.1
1851									0.01	0.07		
1853										0.02		0.06
1857	0.02								0.04			
1859	0.02	0.09			0.17	0.04	0.01	0.05				0.09
1862	0.01	0.01							0.01	0.03		0.17
1882	0.02	0.03						0.04	0.03			0.01
1885		0.2				0.03	0.02	0.05	0.03	0.32		0.57
1886		0.06				0	0.01	0.05	0.21	0.12		0.03
1887						0.01			0.12	0.02		0.07
1890		0.04			0.03				0.02			0.22
1972		0.07			0.18	0.15			0.01	0.02		0.2
1974	0.01	0.05		0.1		0.1	0.02		0.01			0.13
1977		0.01			0.04	0.01			0.02	1.02		0.13
1979	0.07	0.1			0.07	0.06		0.01	0.03			0.05
1980	0.02	0.15			0.09	0.04	0.01			0.07		
1983	0.03	0.05			0.14	0.01					0.05	0.2
1985	0.02	0.03			0.09	0.03			0.04			0.03
1988		1.43				0.01						0.01
1990	0.02	0.01			0.05	0.03		0.1	0.03			0.13
1992	0.02	0.01			0.04	0.02	0.01		0.01			0.1
1994		0.03			0.01	0.02			0.01			0.02
1996		0.04				0.08			0.09			0.25
1998	0.08	0.03			0.08	0.03			0.01			0.22
2001	0.02	0.02								0.01		0.04
2003												0.05
2062	0.01	1.73			0.07		0.11		0.04			0.01
2064		0.01			0.06	0.03		0.01	0.11	0.01		0.27
2066	0.02	0.03			0.08	0.03	0.01		0.01			0.03
2068	0.01	0.01			0.01				0.01			0.02
2076	0.01	0.01			0.03	0.03	0.01		0.02	0.01		0.07
2077	0.02	0.12			0.13	0.03			0.02			0.06
2301	0.01	0.01				0.02			0.07	0.04		
2303	0.03	0.03			0.08		0.01		0.03			0.01
2305	0.04	0.12		0.09	0.14	0.03		0.02	0.02	0.02		0.1
2307		0.03			0.01	0.05			0.01			0.07
2308					0.21	0.04	0.01		0.03			0.03
2314	0.01	0.02				0.02	0.01					0.02
2315	0.06	0.14			0.13	0.12	0.03				0.02	0.09
2317		0.03				0.01	0.02					0.1
2318		0.34			0.14	0.02	0.05	0.2		0.51		0.05
2320		4.22			0.02		0.02	0.63	0.02	0.29	0.01	0.05
2408					0.01	0.02			0.02			0.06
2410	0.03	0.59			0.21	0.02	0.01	0.06	0.04			0.3
2412									0.01			0.07
2414									0.01			0.02
2416	0.01				0.02				0.01	0.05		0.03
2418	0.01	0.01			0.02	0.01		0.34	0.01			0.05
2420	0.06							0.11				0.04
2422						0.01				0.01		0.05

Lot #	Kernals	Cob Frag.	Hickory > 11.5 mm	Hickory > 5.5 mm	Hickory > 2.5 mm	Hickory < 2.5 mm	Acorn	Walnut	Seeds	Squash	ID Bot.	UID Bot.
2425	0.01	0.04			0.01	0.02		0.03	0.1			0.1
2427						0.01						
2429	0.07	0.02				0.2		0.22	0.15			0.02
2431	0.01	0.04			0.04	0.04						0.04
2435						0.01						0.09
2437									0.12	0.43		0.11
2440	0.03	0.03					0.03			0.08		0.2
2610	0.01	0.05			0.09	0.03	0.01		0.01			0.1
2613		0.06			0.06	0.03		0.04	0.01	0.3		0.6
2616	0.02	0.01			0.16	0.06			0.06	0.05		0.14
2618	0.01				0.05	0.03			0.01	0.17		0.1
2621	0.04	0.06			0.09	0.05						0.26
2629									0.07	0.05		0.1
2631	0.02	0.03			0.02							0.08
2633	0.02	0.11				0.02		0.04				0.03
2636	0.01	0.02			0.01	0.01			0.01			0.02
2638	0.02	0.05		0.19	0.23	0.01	0.02					0.15
2640		0.2	0.1		0.02	0.02			0.01	0.07		0.27
2644												0.03
2645	0.05	0.04			0.03	0.03		0.02	0.06			0.07
2647	0.01	0.01				0.01		0.01	0.02			0.02
2648		0.05			0.14	0.15						
2650		0.01							0.01			0.01
2652	0.05	0.5			0.02		0.02		0.03	0.04	0.01	0.27
2654	0.02											0.03
2656	0.01					0.01						0.01
2658	0.05				0.37	0.05				0.12		0.15
2660		0.01			0.06	0.01						0.06
2662	0.03	0.03			0.07	0.02						0.05
2664	0.03	0.03			0.06	0.04			0.02			0.11

Lot #	Odo. virg.	ursus	ID Mam.	UID Mam.	Bird	Turtle	Snake	Rep./Amph.	ID Fish	Fish	Shell	UID
1803												0.81
1804	35											1.39
1851						0.06						1.29
1853												0.4
1857	0.17		0.03	3.6	0.73	2.06				0.28	1.52	2.99
1859	3.14			3.97	5.89	8.02	0.1			0.55		4.41
1862				2.45		0.09						1.8
1882	2.37	62.9		0.04		0.15						7.37
1885				11.26								1.41
1886			0.17									1.61
1887				0.54			0.04					1.69
1890				0.45		0.03						3.72
1972	3.62		0.24		0.05	1.89				0.14	1.18	5.46
1974	0.64		0.06	7.2	0.06	1.52	0.2			0.25		2.29
1977	6.23			0.12								2.04
1979	0.38					0.13	0.02					1.91
1980	1.31			0.61		0.79			0.06			6.02
1983	0.1		2.43	0.01								1.97
1985	25.73					0.1						3.17
1988	12.83			0.5								1.92
1990				1.3		0.5						3.18
1992	5.46		0.03	2.99	1.16	1.69			1	0.48	1.69	7.57
1993	9.92											0.11
1994	3.75											1.5
1996			0.11			0.06						0.5
1998	0.06			0.29								2.32
2001	0.05			3.96	0.68	0.11						2.83
2003	3.9			1.09		0.19						2.24
2062	6.7			8.63		0.23						3.11
2064	0.02			1.13	0.05	0.21						5.36
2066	0.53			4.01		2.44	0.07				0.63	5.66
2068	33.18		0.17			1.5				0.07		2.39
2076	1.1			0.52		0.34						1.82
2077	4.61	2.19	0.31	7.78	0.48	5.95	0.11	0.07	0.04	0.16	4.46	9.92
2301	0.05	1.1				0.13						3.07
2303	0.23			2.37		0.4	0.09			0.16		5.68
2305	4.96			2.22	0.04	0.91	0.77	0.03		1.01	2.55	5.65
2307				5.79	1.12	0.12				0.01		1.26
2308			0.08	5.05	0.11	0.39						3.27
2314	3.22			5.04	3.77	0.41	0.05			0.37		4.96
2315	0.03			0.78	0.21							1.98
2317				1.07		0.08				0.05		1.15
2318						0.06						1.95
2320	0.1			0.63		0.26						2.53
2408	0.16			0.02	0.03	0.4	0.01					2.45
2410				2.34								1.38
2412	1.09											2.41
2414	1.04					0.14						0.14
2416						0.09				0.03		0.77
2418	14.68		0.11	8.28		0.3	0.01			0.22		5.31
2420	1.93			0.37								0.28
2422				1.16		0.38						3.87
2425	26.74			5.26		0.99	0.11					14.31

Lot #	Odo. virg.	ursus	ID Mam.	UID Mam.	Bird	Turtle	Snake	Rep./Amph.	ID Fish	Fish	Shell	UID
2427	2.08			0.66								0.28
2429	1.6					0.09						3.26
2431	3.68											4.14
2435	0.45			1.7		0.97				1.01		4.1
2437	13.94			3.46								4.51
2440	0.63			2.29								2.84
2610	0.01					0.13		0.03				1.97
2613				0.26		0.06						1.18
2616	0.05											0.26
2618	0.14			0.02								1.77
2621	1.8			2.09						0.02		1.37
2629				0.86								0.42
2631	0.24		0.17	4.06		0.72	1.06					3.28
2633				1.8		0.36				0.03		2.64
2636	0.07			3.71	0.78	0.53						4.43
2638	4.85		0.18	0.04		0.7		0.07		0.06		5.78
2640	25.96			6.21		0.35						6.85
2642	0.8		0.05	6.4		1.48			0.28			6.76
2644				0.28	0.04	0.98				0.26	0.01	5.6
2645	0.6			0.5		0.12						2.15
2647	0.05			0.58		0.23						1.17
2648	0.11			0.89		0.38						1.95
2650				4.1		0.1						0.91
2652				1.17		0.06						1.51
2654												0.36
2656				1								1.1
2658	0.14					0.38	0.9					5.22
2660	3.87			4.02		0.58	0.01			0.34		1.52
2662			0.14	2.06		1.92				0.45	0.5	3.73
2664			0.02	1.91	0.53	0.27				0.65		2.19