

Socializing the Shell Mound Archaic:
Changes in Human-Animal Relationships During the Middle and Late Archaic Periods
in the Lower Tennessee River Valley

A Dissertation Presented For The
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

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August 2025

DEDICATION

My Father, Jimmy Ellis Brown and my Mother, Patricia Ann Brown,

Who passed away in the fall of 2024.

ACKNOWLEDGEMENTS

I would like to thank my wife Audrey for her patience during the completion of this dissertation. Her support and encouragement was instrumental during the writing process. I would also like to thank my three children, Emmett, Ava, and Connor for their patience and understanding as I sat at the kitchen table and wrote each chapter. Throughout my archaeological career I have had the great fortune of working with the leading archaeologists of my generation and this project was no different. I would like to recognize my committee, Dr. David Anderson, Dr. Barbara Heath, Dr. Ellen Lofaro, and Dr. Aleydis Van de Mortel. I carry a deep respect for all and will always be indebted to their direction throughout this process. I would like to thank David Anderson for taking me as a student. Prior to the University of Tennessee PhD program, I had very little understanding of hunter-gatherers, both past and present. Dr. Anderson showed me the wonderful world of hunter-gatherer archaeology and as a result my love for archaeology was reinvigorated.

I would also like to thank Barbara Heath for being a committee member and the eventual committee chair following the retirement of Dr. Anderson. Her attention to the process kept my progress on track. Dr. Ellen Lofaro imparted her wisdom on the sensitivity of Native American tribes to modern archaeological research. Dr. Lofaro's position as an arbitrator between Native American Nations and the archaeological community is commendable. I would like to thank Dr. Aleydis Van de Mortel for taking time out of her busy schedule to attend each defense and offering comments on each draft. I would also like to thank Eric Adams of North Wind for help with the GIS figures.

ABSTRACT

This dissertation examines how hunter-gatherers used human-animal relationships to shape Archaic society at shell mound and shell bearing sites in the lower Tennessee River Valley circa 8900 cal yr B.P. to 3200 cal yr B.P. Research suggests that Middle and Late Archaic hunter-gatherers used shell mound sites as places to organize their social and cultural organizations as well as places for cultural renewal and cultural continuity. While these investigations link social organization (for example tribes, corporate groups, ritually complex groups) with site type, burial patterns, artifact types, and shell mound construction, very little effort has been afforded to understanding Archaic lifeways through their relationships with wild and domesticated animals. Human-animal relationships provide another line of evidence to interpret shell mound and shell bearing sites. This dissertation uses the concept of Animal Bone Grouping (ABG) to go beyond subsistence patterns and to historize and socialize Archaic hunter-gatherer lifeways through their relationships with animals.

New radiocarbon dating by Bissett (2014) now makes available a temporal context for exploring the connections between Archaic human-animal relationships and Archaic social organizations. This research used ABGs to examine how hunter-gatherers utilized the domesticated dog, the introduction of food taboos, changes in feasting patterns, changes in gender roles and changes in meat provisioning at shell mound sites to affect changes in social organization through the Middle and Late Archaic periods.

Archaeologists are developing excellent cases studies of specific shell mound cultures to re-interpret Archaic hunter-gatherer social organization and social change. The dissertation research shows that Archaic hunter-gatherers employed different human-animal relationships at different times in the lower Tennessee River Valley. Evidence in the form of articulated dog ABGs and

disarticulated mammal ABGs indicate that hunter-gatherers used transegalitarian organizations at the Big Sandy and Eva sites circa 8900–8200 cal yr B. P., that shifted to more egalitarian organizations circa 8200–6300 cal yr B.P. that was centered on ceremonial use of human-animal relationships. By the late Middle Archaic period into the Late Archaic period, circa 5600– 3200 cal yr B.P., hunter-gatherers practiced a transegalitarian social structure.

FOREWORD AND DISCLAIMER AND CONSULTATION

No photographs of human or animal remains appear in what is produced here, and no forms of destructive analyses took place. The data for this research was taken from published sources.

This dissertation included consultation with the University of Tennessee and the Coushatta Tribe of Louisiana; Eastern Band of Cherokee Indians; The Chickasaw Nation; The Muscogee (Creek) Nation; The Osage Nation; The Seminole Nation of Oklahoma; Thlopthlocco Tribal Town; and the United Keetoowah Band of Cherokee Indians. The tribal coordination began in February 2022. The PhD proposal was mailed to each tribe giving each tribe 30 days to make comments or suggestions concerning the proposal and the project. The entire dissertation was sent to each tribe on March 6th, 2025, for their comments prior to the public defense and final revision.

The consultation included a series of meetings where the content of the proposal was discussed. The Chickasaw hold both human and dog burials as sacred components of their belief system and stress cooperation between their community and any research involving these sacred components. The author consulted with the University of Tennessee and the Chickasaw Nation throughout the writing of the dissertation.

A summary of the tribal consultation is presented in Appendix I.

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CHAPTER I

INTRODUCTION

The hunting-gathering-fishing (i.e., “hunter-gatherer”) or foraging lifestyle represents almost 99% of the human past. However, research on hunter-gatherer social organization in Southeastern archaeology in the United States has received less attention than the level of research devoted to understanding the emergence of social complexity in late precontact and early contact-era Mississippian societies (Sassaman 2010:5). What emerged (at least in the Southeastern archaeological community) was an inert model that persistently framed shell mound cultures as various shades of “egalitarian,” especially when compared to the later “complex” and “dynamic” chiefdoms that appeared in the major river valleys. In actually, foraging lifeways were highly varied in their lifeways and complexity, and the Mid-South and Southeast was no exception (Kelly 2013; Rowley-Conwy 2001).

The discovery of earthen mounds dating to the Middle Archaic period in northeast Louisiana and southwest Mississippi has prompted a re-evaluation of Archaic hunter-gatherer social organizations (Claassen 2010, Gibson 1994, Russo 1994, Sassaman 2010:4). Consequently, scholars are also re-evaluating shell mound cultures within a historical context, pointing to shell mound construction, feasting, and social space theory as evidence that in some areas in the eastern United States non-egalitarian, or “transegalitarian” (Clark and Blake 1994, Hayden 2001a, Russo 1994:28) hunter-gatherers populated the Middle and Late Archaic landscapes. Transegalitarian hunter-gatherers are defined by institutionalized leadership positions and control of labor and the distribution of resources. While the analysis of artifact types, burial goods, and different shell mound types has demonstrated that Archaic shell mound cultures were diverse, additional

approaches are needed to further understand and appreciate the lifeways of these regional shell mound cultures.

The research reported here focuses on the “core” area of the Shell Mound Archaic, situated in the lower Tennessee River Valley (Sassaman 2004) (**Figure 1**). The decision to focus on the lower Tennessee River Valley came about as new research and a new suite of new radiocarbon dates (Bissett 2014) allow for fresh interpretations of how these Archaic hunter-gatherers organized their relationships with wild and domesticated animals. The Shell Mound Archaic is an umbrella term that describes the construction of freshwater shell mounds by some Middle and Late Archaic hunter-gatherers living in the Tennessee River Valley, the Green River Valley in Western Kentucky, the St. John’s River Valley, and areas along the Georgia and Florida coasts (Claassen 2010:16, Crothers 2005:86, Lewis and Kneberg 1959: 161, Sassaman 2004: 255, Russo 2004: 26). The construction of shell mounds in the Archaic spanned virtually the entire period, from ca. 8600 to 3200 cal yr B.P. (Anderson 2004:270, Bissett 2014, Claassen 2010:16, Lewis and Kneberg 1959: 161, Sassaman 2004: 255). While archaeologists agree that people deposited shellfish in heaps or mounds, there is not a consensus on how to categorize the social behaviors and social histories of the cultures that produced shell mound cultures.

While many archaeologists continue to interpret the Shell Mound Archaic within the ecological-egalitarian model (Marquardt and Watson 2005), some archaeologists are now using historical-agency models to explain the diversity of behaviors found in the Shell Mound Archaic (Claassen 2010, 2015; Sassaman 2010). Historical-agency models incorporate the role of agency in the formation, maintenance, and reorganization of these shell mound producing cultures. In contrast to pure environmental models, the historical-agency approach places human agency as the context to understand social organization. The historical-agency approach for hunter-gatherers, as

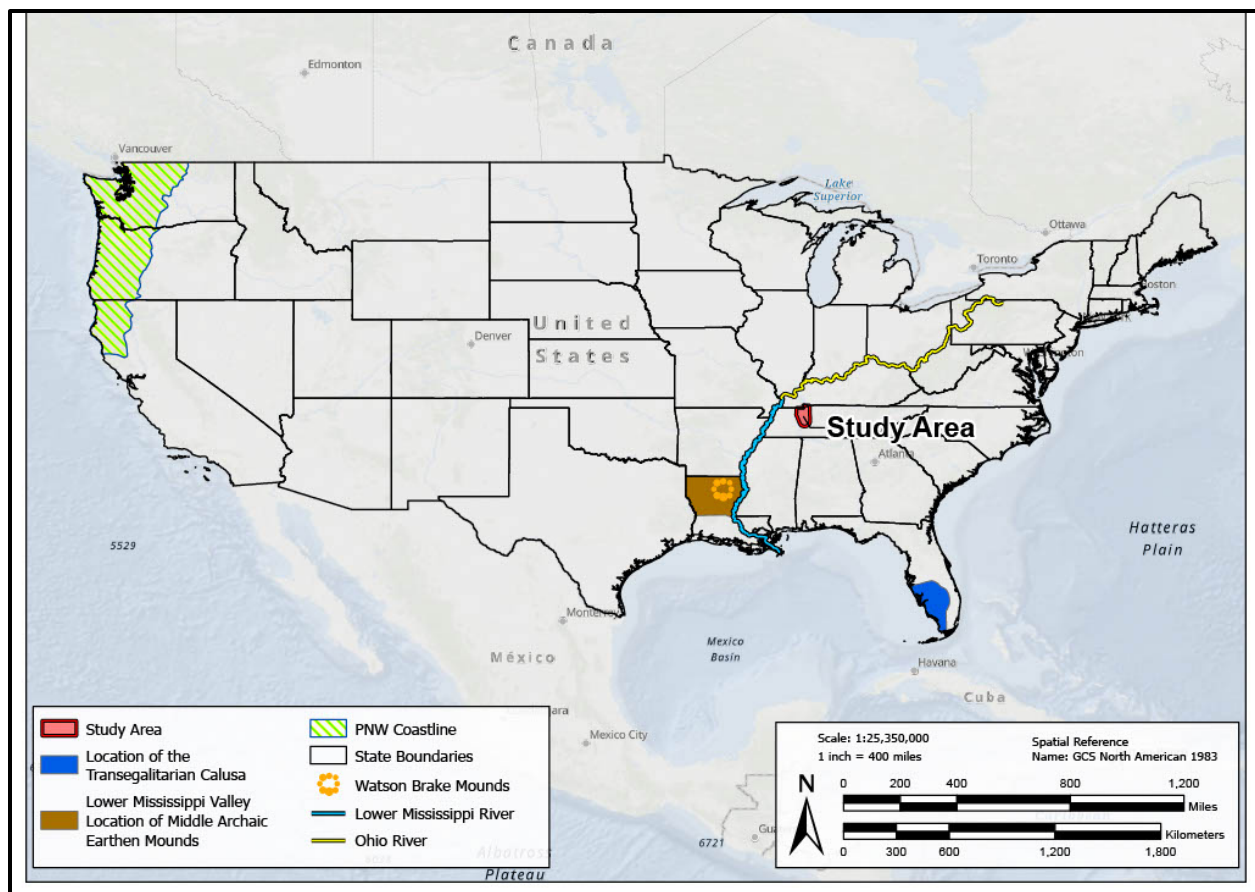


Figure 1. Location of Hunter-gatherer Groups in North America Discussed in the Dissertation.

demonstrated by Sassaman and Holly (2011), requires the identification of small scale changes used by these communities to maintain their social structures. However, the difficulty in identifying these changes over time has impeded the development of a true historical narrative for these Middle and Late Archaic shell mound building communities.

Anthropologists recognize that non-Western communities incorporated important animal species into their social lives and as part of their cosmologies (Lee 1979). Recently, archaeologists (primarily zooarchaeologists) have expanded their interests beyond foodways and subsistence models in an effort to reconstruct past lifeways through understanding human-animal relationships (Russell 2012). This approach, termed “Social Zooarchaeology” (Russell 2012) has established correlations between social organization, social ideology, and cosmology, with different types of human-animal relationships. While cultural anthropologists are able to observe these relationships in real time, archaeologists have to identify the human-animal relationship in the archaeological record. Evidence of these relationships can be inferred from (but are not limited to) the introduction and use of domesticated animals, changes in feasting activities, the introduction of food taboos, changes in meat provisioning and access, and changes in animal rituals through time (Russell 2012).

In this research, I examine how Middle and Late Archaic shell mound cultures constructed social hierarchies through the manipulation of human-animal relationships. I analyze these human-animal relationships at several scales of social behavior, social change, and shifts in ritual practice.

The model for social change that I developed can then be used to interpret both micro-and macro-changes at other sites, building an in-depth historical understanding of hunter-gatherer communities in the Middle and Late Archaic lower Tennessee River Valley.

RESEARCH PROBLEM

Traditional approaches, at least until fairly recently, interpreted the Middle and Late Archaic period as a ca. 5,000-year period characterized by seemingly timeless and uncomplicated lifestyles comprised of egalitarian hunter-gatherers whose organization did not include social hierarchies (Sassaman 2010). This approach obscures the true dynamism of hunter-gatherer behavior, promotes the impression that hunter-gatherers experienced one organizational social form throughout the Middle Archaic period, and misrepresents what we are increasingly coming to see as a truly important and formative era in Eastern North America, one that helped shape many subsequent developments (Kassabaum 2021). In this dissertation, I will focus on the social history and organization of hunter-gatherer shell mound building cultures that were living in the lower Tennessee River Valley during the Middle Archaic (8900–5600 cal yr B.P.) and the Late Archaic (5600–3600 cal yr B.P.) periods (intervals as defined by Bissett 2014) through changes in Archaic human-animal relationships.

The Tennessee River Valley is an excellent region to examine hunter-gatherer social history for two reasons. First, archaeological sites in this region possess many of the cultural attributes that are needed to address my research questions: the construction of shell monumentality, change in how domesticated animals were used, cemeteries with human burials, and evidence for changes in feasting types. Secondly, the Eva Site (briefly discussed below), possesses stratigraphic integrity with distinct cultural deposits that can be tied to radiocarbon dates (Bissett 2014). The Eva Site presents a unique starting point to develop a regional historical model for the lower Tennessee River Valley (Lewis and Lewis 1961).

Social Zooarchaeology

Social zooarchaeology is an emerging sub-field in archaeology that focuses on the cultural aspects of the human-animal relationship. Russell (2012:6761) describes social zooarchaeology as a field that "... explores aspects of the human-animal relations beyond the dietary and human-human-relations negotiated through animals, including the value of animals as wealth and symbols, sacrifice, and other ritual use of animals, taboo, and the overvaluation of meat and its use in transactions of status and relations through meat sharing and feasting." Social zooarchaeology can bring into focus the different social relations that shape a community through the manipulation of animals and animal resources (Russell 2012: 6763).

Three primary relationship categories are used to examine the human-animal relationship: human/wild, human/wild/domesticated, and modern/market economy. These different categories are designated according to their different social organizations; hunter-gatherers (human/wild), agricultural societies (wild/domesticate), and market economy (Russell 2012). These human-animal relationships are discussed in more detail in Chapter III and explored throughout the remainder of this dissertation.

Using the changes in Archaic human-animal relationships and possible shifts in feasting behaviors through time, I examined three models to analyze shell mound cultures in the Mid-South and Southeast. These models include (1) an egalitarian/ecological organization model, (2) a sacred organization model, and (3) a secular organization model. In order to test these models, other evidence will need to be assessed concurrently, such as when during the year these sites were occupied, how often they were occupied, and whether other evidence for special status is present (i.e., grave goods or associations with people). Because this research will take a *long durée* approach, each model will be analyzed for the 8,900 to 3,600 cal B.P. time period.

Three models were used to direct this dissertation research.

- Ecological Based Models — Because the community is egalitarian, animals may be communally owned but may also represent a specialized feasting food. Whole deer carcasses arrived at the site with a high density of large mammal bones with all skeletal elements (low, medium, and high utility) present.
- Sacred Organization Model — While some animals may be collectively owned, they will be sacrificed in public rituals at sacred locales on the landscape. Because rituals are expected to occur at seasonal aggregation locations, animal sacrifices are expected to occur in well-patterned clusters, usually following the aggregation schedules.
- Secular Organization Model — A community that shifts from a sacred organization to a secular organization is expected to use ritualized locations to conduct competitive feasting to maintain individual power and to promote social inequality. In this case, some animals are expected to represent individual wealth and prestige and may receive special treatment.

The goal of my research is not to determine the subsistence economies at each site, but to use human-animal relationships as one means to examine the social behaviors of Archaic hunter-gatherers. The approach behind each of the above models focused on grouping animal bone deposits into Animal Bone Groupings (or ABGs). ABGs have two parts. An ABG is a grouping of animal bones together to form analytical units that is dependent on context. ABGs can be compared to different contexts including a site, between sites, and between temporal periods. The ABG concept was initially used in European archaeology to identify intentional animal burials (ritual) from animals that died naturally or buried for non-ritual or functional purposes (Morris 2012). I chose to use the ABG concepts for two main reasons:

1) to identify differences in the use of animals by men and women, and 2) to determine if dogs were used differently during the Middle and Archaic periods.

The ABG approach allowed my research to go beyond the traditional subsistence approach that calculates the relative bone frequencies of each individual animal species and then ranks each individual animal according to their calorie contribution. While a subsistence approach shows the amount of caloric contributions of each animal, it minimizes the social use of animals.

For example, subsistence approaches establish that individual small mammals, like racoons, opossums, ground hogs, etc., each contribute a small percentages of calories to a hunter-gatherer group when compared to larger animals like white-tailed deer. However, this approach may mask the social use of small animals as social currency. While men used large game to supply calories (and sometimes accrue prestige), women used small animals to build alliances and connections with other women and families (see Waguespack 2005:671).

Placing animals in large and small ABGs allowed for the identification of the level of socialization for women at cave and shell mound sites.

The creation of an articulated dog ABG and a disarticulated dog ABG allowed for Archaic dogs to be analyzed and interpreted over time and within different contexts. This approach is different from past interpretations that documented dogs at these Archaic sites but did not associate them with stratum-specific, site-specific, or temporal-specific contexts. Using the ABG approach, my research was able to demonstrate that Archaic hunter-gatherers in the lower Tennessee River Valley used dogs in different ways at different times. The differences in dog use was tied to interpretations about social organization.

These ABGs formed the basis to identify the human-animal relationships practiced by Archaic hunter-gatherers living in the lower Tennessee River Valley. In addition to the three models of social organization, ABGs were used to make statements about the overall social organization of sites as egalitarian or as transegalitarian. Briefly, social organization was associated with certain behaviors and certain types of human-animal relationships. **Table 1** provides a brief outline on the overall research process and expectations.

These concepts, along with how animal bones were grouped for analysis are discussed in more detail later in this dissertation.

The Eva Site

The Eva site presents a stratigraphic sequence where changes in human-animal relationships can be tied to radiocarbon dated deposits and can also be associated with changes in other cultural attributes (Lewis and Lewis 1961). These transitions, along with other types of evidence, will form the basis of this research and a baseline to test several models of human social change in the Middle Archaic. Below is a brief description of what I will use as a baseline to develop a regional model for the Tennessee River Valley.

The Eva site is located in western Tennessee (Benton County) on a slough (**Figure 2**) situated about a mile west of the Tennessee River (Bissett 2014). The site was excavated in advance of flooding associated with the creation of Kentucky Lake, and a report on the fieldwork was published in 1961, with fine precision radiocarbon dating occurring in recent years, that resulted in a major reexamination and redating of the site deposits (Lewis and Lewis 1961; Bissett 2014). Excavation of the site consisted of 32 10x10 foot excavation blocks that were dug to 8–10 feet below the ground surface. The collections from the Eva site are currently curated by the Tennessee Valley Authority at the McClung Museum located at

Table 1. Brief Description of Animal Bone Groupings Used In This Research.

ABG TYPE	Species	Description	Bones	Context
Disarticulated Large Mammal	White-tailed Deer, Bear	Loose Bones Recovered From Site Matrix, Disarticulated From Consumption	Includes All Bones From the Skeletal	Throughout the Site Consumed At Site
Disarticulated Small Mammal	Animals that are not Deer or Bear i.e., Raccoon, Beaver, Opossum, Mink, Wildcat, Groundhog,	Loose Bones Recovered From Site Matrix Disarticulated From Consumption	Includes All Bones From the Skeletal	Throughout the Site Consumed At Site
Feasting	All Species	Loose Bones Recovered From Site Matrix, Context Dependent	Includes All Bones From Certain Cultural Context	Loose Bones In Middens, Pit Features, Shell Mounds
Ritual/Sacrifice/Interment	All Species	Instant Burial, Articulated Bones or Nearly Articulated	Includes all Bones that were part of an Animal Burial	Interment, At A Ritul Site or Ritul Context , Like Cemetery
Simple Interment	All Species	Instant Burial, Articulated Bones or Nearly Articulated	Includes all Bones that were part pf an Animal Burial	Interment Not In Specialized or Ritual Location. Not Buried in a Formal Cemetery or Shell Mound

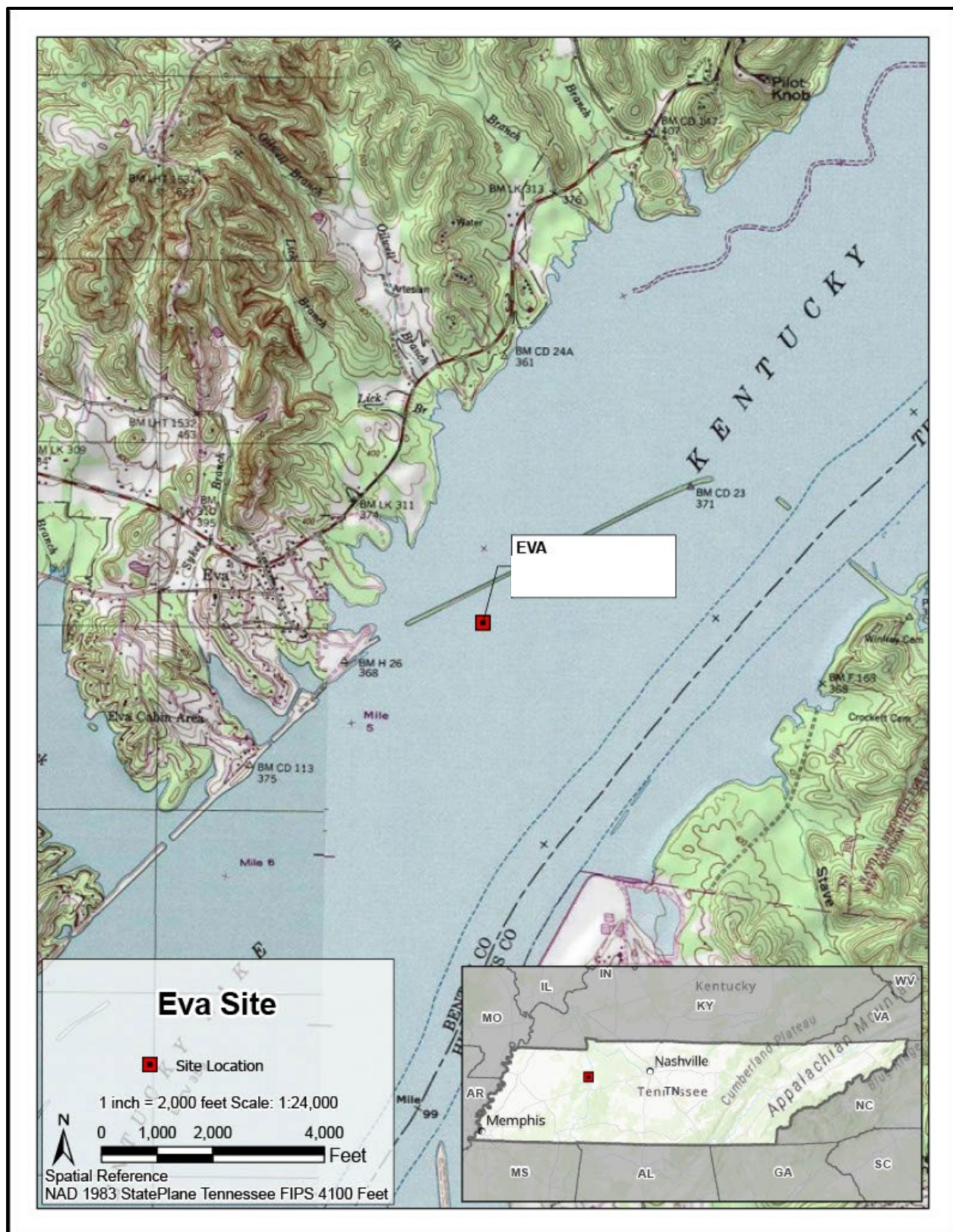


Figure 2. The Location of the Eva Site.

the University of Tennessee. and the author has coordinated with TVA and the Chickasaw Nation about the use of these materials. The earliest habitation (Stratum IV and Stratum V) at the Eva Site, which had the least amount of freshwater shell, is characterized by disarticulated dog bones. The only evidence for dogs at the base of the shell mound (Stratum III) is a single reported dog burial (Lewis and Lewis 1961 Bissett 2014:248) that was presumably placed in a ritual context at the base of the mound. Over the next 600 to 800 years, hunter-gatherers continued to construct and use the shell mound (Stratum II bottom); however, dogs are absent during this period. Dog burials suddenly appear in the lower parts of the shell mound (Stratum II middle and Stratum II top), a 1,200-year interval, and are common occurrences in these deposits (Bissett 2014: 253). Eva remains arguably the most important site for exploring the questions explored here, but details on other sites examined are provided in subsequent sections of this study as relevant..

Tribal Consultation for the Project

Tribal consultation occurred throughout the project, as noted in the forward and detailed in Appendix I. Consultations were shaped with the guidance of the University of Tennessee Ph.D. committee members. Ellen M. Lofaro, Ph.D. who serves as the Director of Repatriation, Division of Academic Affairs; the Curator of Archaeology, Department of Anthropology; and the tribal liaison for the University of Tennessee, helped draft the initial consultation requests with the Federal recognized tribes that have a connection to the area of study. These included the Coushatta Tribe of Louisiana; Eastern Band of Cherokee Indians; The Chickasaw Nation; The Muscogee (Creek) Nation; The Osage Nation; The Seminole Nation of Oklahoma; Thlopthlocco Tribal Town; and the United Keetoowah Band of Cherokee Indians.

The Introduction, Chapter I, presents the goal and organization of the dissertation. A discussion of the consultation process is also provided, together with a brief description of the contents of each chapter.

Chapter II provides a brief discussion of the historical development of the concept of precontact social complexity in Southeastern archaeology from the 18th to the 21st centuries. Here, I show how early concepts about Native American social complexity influenced modern conceptual models used to examine hunter-gatherer social organization. The chapter is chronological in outline, beginning with the work of Thomas Jefferson and William Bartram, followed by a discussion of the 19th-century research of Squier and E.H. Davis and Jeffery Wyman. A discussion on the development of the complexity concept during the 20th and 21st centuries follow, including an examination of the research of Kenneth Sassaman and Cheryl Claassen on the utility of agency, social history, and social zooarchaeology in examining social organization and change.

Chapter III provides a discussion of hunter-gatherer social organization along with a synthesis of current research on the subject in the Southeastern United States, with an emphasis on the Mid-South. The chapter incorporates information from both ethnographic and archaeological case studies and includes a discussion on egalitarian and trans-egalitarian hunter-gatherers, the emergence of social complexity, and differences in the human-animal relationship among the different types of hunter-gatherers. Chapter III also examines how hunter-gatherer communities express different types of human-animal relationships through feasting, food taboos, food provisioning, and animal ritual.

Chapter IV gives an overview of the human-animal relationship as an anthropological concept, that can be applied to Archaic sites in the lower Tennessee River Valley. For this dissertation,

which focuses on First Peoples in the American Southeast before they were beginning to domesticate wild resources, two broad categories are used to discuss how hunter-gatherers structured their human-animal relationships, 1) the human-wild animal relationship and the 2) human-domestic animal relationship. These two human-animal relationships represent two different modes of sociality and can exist in the same hunter-gatherer social system (de Waal 1998:257).

Chapter V presents research on the relationship between domesticated animals and how hunter-gatherers used animals to build their social structures. The chapter provides an overview, drawn from a diverse set of contexts from the Americas, Africa, Europe and Canada, of how societies integrated domesticated animals into complex social arrangements. A discussion of the concept of Animal Bone Groups (ABGs) and their application to the study is discussed as part of the chapter.

Chapter VI gives an overview of the Human-Animal relationships that may have existed in the Shell Mound Archaic. Descriptions of the types and species of important animals are provided with a focus on mammalian species. The chapter offers examples of human-animal relationships from different archaeological contexts and ethnographic examples. Chapter VI provides an interpretive framework to describe the human-animal relationships formed during the Middle and Late Archaic periods in the lower Tennessee River Valley. Chapter VI focuses on those animals, domesticated dogs, black bears, and white-tail deer, which provided ritual uses and subsistence needs to Archaic hunter-gatherers.

Chapter VII describes the methodology that was used to test the three models for Middle and Late Archaic hunter-gatherer social organization. Concepts employed to interpret the Archaic human-animal relationships are discussed and include the Animal Bone Group (ABG). These

concepts are presented in Chapter VII as methods to group animal bone assemblages into categories that can be used to compare categories across spatial, temporal, geographical, and cultural spheres. The statistic computations used for the faunal assemblages are discussed in Chapter VII and include the Number of Identified Specimens (NISP) and the Relative Animal Bone Frequencies (RNF) . Chapter VII also introduces the concept of carcass part distribution, and a social index associated with the proposed ABGs for the study.

Chapter VIII provides a general description of the environment and cultural history of the Archaic periods (Early, Middle, and Late) Mid-South. This section provides a description of the cultural history of the study area with an extended discussion of the Shell Mound Archaic to include the greater Southeast. This section includes a review of previous archaeological research that has occurred in the project area but will also incorporate relevant research on sites with similar occupations from other areas, including the Cumberland River of Middle Tennessee and the Green River Valley of western Kentucky.

In Chapter VIII, I also provide an overview of the research that has been conducted on the Shell Mound Archaic in the Midsouth. The discussion reviews the research conducted by Cheryl Claassen, Darcy Morey, Meagan Dennison, Kenneth Sassaman, and others. Chapter VII also provides an overview and description of the models developed for this research including how the human-animal relationship in the Mid-South can be used to identify the types of social organization during the Middle Archaic period. Chapter IX presents a description of the archaeological sites used in this study. The published raw faunal data is presented for the Eva, Big Sandy, Indian Knoll, Dust Cave, and Black Cat Cave sites. The raw data is presented for the major mammalian species including information of about the carcass distribution.

Chapter X discusses the conclusions of the study and offers research possibilities for future investigations. Chapter X details the changes in animal-human relationships through the Middle to Late Archaic periods. A discussion is provided that compares the types of ABGs between sites and within individual sites. ABGs are compared between the Big Sandy and Eva sites to develop a narrative about hunter-gatherer social organization during the time period from 8900 to 3600 cal yr B.P. ABGs are then compared with Late Archaic period sites like Oak View, Ledbetter Landing, Cherry, McDaniel, and Kay's Landing.

CHAPTER II

SHELL MOUND RESEARCH AND THE DEVELOPMENT OF A TYPOLOGY FOR SHELL MOUND CULTURES

Introduction

The history of research concerning shell mound sites and shell bearing sites has been discussed recently by a host of archaeologists including excellent reviews of the history in the Mid-South by Thaddues Bissett (2014) and an excellent review of Jeffery Wyman's shell mound research in 19th-century Florida by Asa Randall (2015). The goal of Chapter II is not to rewrite the history of shell mound and/or shell bearing sites but to offer the reader a brief context to understand how past archaeological theory influenced how shell bearing sites were excavated, analyzed, and reported. In order to use the human-animal relationship as evidence for changes in the social organization of Middle and Late Archaic shell mound cultures, it is helpful to understand the intellectual history of shell mound research. Chapter II provides a brief, but relevant discussion on some of the important scholars that published their research on mound construction, both earthen and shell.

The system that produced 19th-and 20th-ideas on shell mound cultures developed within a larger academic culture that incorporated a diverse set of mound types into their conceptual models. These models included mounds constructed from shell, sand, and earth. Additionally, 19th-and 20th-century scholars had to explain the diversity in construction material, size, and design of mound types through time. While research on Native American communities during the 18th to 19th centuries was intertwined with racial ideology, religious ideology, political and economic agendas, Chapter II examines how specific early scholars interpreted and published their ideas on Native American monumentality and how (in the author's opinion) these writings coalesced into

an idea that shell and earthen mounds represented successive stages of cultural development for Native American tribes (see Trigger 1989).

What emerged during the mid-19th century onward were publications that placed native mounds within the context that culture (especially mound building cultures) progressed through a linear progression from simple to more complex (Squier and Davis 1848).

Although early antiquarians and scholars may not have clearly described a mound hierarchy in a single publication, I believe that the collective writings of early scholars portrayed Native American mound works within a hierarchy of mound types, associating mound types with simple to complex social organizations. Traditionally, shell mound cultures were associated with less complex forms of social organization, and did not receive the same level of attention as earthen mounds (Wyman 1875). Early American thought focused on the indigenous built environment, mainly earthen mounds, with very little attention to what was placed in mounds as evidence for how Indigenous groups organized their communities (Squier and Davis 1848).

This chapter provides a context and brief discussion of the historical trajectory of Native American mound research and how this experience influenced interpretations of shell mound cultures. The discussion is not meant to be an exhaustive essay on early American archaeology, but is intended to show that early scholars, either consciously or subconsciously, contributed to a conceptual model that ranked the Native American built environment from simple to complex and how this research influenced the interpretations of American archaeologists about shell mound cultures.

Here I briefly examine the influence of European ideas on social organization before discussing how American research culminated through time starting with the writings of Thomas Jefferson, Daniel Drake, and William Bartram during the 18th and early 19th centuries, while the work of

Daniel Ephraim Squier, E. H. Davis, and Samuel Morton is examined to show the acceptance of ideas that associated mound types with cultural stages by the 1840-1850s. The publications of Squier, Davis, and Morton considered social organization to be a racial, hierarchal concept. They were followed in the 1870s by Lewis Henry Morgan. Lewis Henry Morgan (1877), who published a set of cultural stages from simple to complex based on economic and technological attributes that became widely accepted in the archaeological community.

EUROPEAN ROOTS FOR THE AMERICAN CONCEPT OF NATIVE AMERICAN SOCIAL COMPLEXITY

Eighteenth-century American intellectuals were influenced by their European counterparts, especially through the work of Italian, British, French, and German antiquarians. (Trigger 1989:35–38). These antiquarians wanted to highlight Roman and Greek statuary as pieces of art, but by the middle of the 18th century, statuary and architectural accomplishments were increasingly associated with highly developed, socially, and politically complex societies (Trigger 1989:35–38). For Europeans, Roman and Greek architecture represented one apex of civilized culture and provided a comparative framework to compare global cultures.

Trigger (1989:35) credits the political and economic climate of 14th-century Italy as the origin for the European interest in classical Greek and Roman material culture. As the Italian middle class expanded throughout the emerging city-state system, people began to see themselves as members of a highly advanced society, believing that their own achievements were natural extensions of their Roman ancestors (Trigger 1989:35). The popularity of this view was enhanced by the Vatican. In 1462, Pope Pius II passed a law requiring the preservation of all ancient statuary found in Catholic controlled lands, thus making statuary a symbol of advanced European civilization (Trigger 1989:36–38).

Similar to the Italian situation, the rise of nation states and middle classes in Northern and Central Europe promoted social and cultural interest in ancient monuments and the histories of advanced cultures. In these countries, ancient monumentality was used to redefine growing national identities, using the past achievements of Greece and Rome to communicate the ideals of progress and civilization (Trigger 1989:47).

European antiquarians were great promoters. They shared their findings with the public through the display of statuary in museums and through publications that highlighted ancient Egyptian, Greek, and Roman architecture. One influential publication, *Description of Egypt (1809–1822)*, demonstrated the growing accessibility of ancient monumentality to the public (Trigger 1989:39). The 19-volume set was the work of French scholars that had participated in the military expeditions of Napoleon Bonaparte in Northern Africa. These scholars made detailed illustrations of Egyptian architecture, art, and hieroglyphics and published their findings in *Description of Egypt*. The lavish publication helped to impress upon the public that social and cultural complexity were tied to advancements in architecture and art.

This Western idea about social and cultural progress was transplanted to places outside of Europe, as European explorers came into contact with hunter-gatherer societies (Trigger 1989:56). European explorers pointed to these hunter-gatherer groups as evidence that humans advanced through cultural stages beginning with a stone-age period. As this paradigm materialized, European scholars developed a hierarchal system for human progress that began with a primitive stage that advanced to more complex stages. It was this theoretical environment that most likely had some influence on colonial scholars in America, especially their views on the relationship between mound construction and Native American social organization (Trigger 1989).

The Beginnings of the Architectural Model For Mound Building Cultures (1750–1820)

Powerful people make theory and ideas powerful. The research and publications on Native American lifeways by Thomas Jefferson and William Bartram provide insights into how two prominent Anglo-American scholars used monumentality to define past Native American social organization. Although Jefferson and Bartram did not publish a hierarchy of mound types, their writings set the stage to interpret the diversity of mound types in the American Southeast and Mid-South. Jefferson and Bartram's impact on American archaeological thought was threefold. First, they set the stage for the continued use of the formula where monumentality could be evidence for social organization. Secondly, 19th-century scholars would replicate Jefferson's comparative method by comparing Native American earthen mounds to both Old World architecture and pyramids of Central America; ultimately resulting in the development of a staged approach that linked different types of monumentality to varying degrees of cultural development. Thirdly, Jefferson and Bartram supported the idea that human culture was a process that occurred along a linear trajectory with some areas more advanced than other areas (Trigger 1989).

Francois Marbois, a French diplomat, was interested in precontact Native American culture, and requested information from Thomas Jefferson on the matter (Kennedy 1992). In response to Marbois, Jefferson excavated a small earthen mound located on the Rivanna River near Charlottesville, Virginia (Kennedy 1992:107). His excavation is considered to be the first archaeological excavation in the Americas using a "problem-oriented" methodology (Dunham et al. 2003, Hantman and Dunham 1993). While his field methodology and subsequent reporting resulted in modern archaeologists bestowing the title of "Father of American Archaeology" on

Jefferson (Jeter 1990; Sayre 1998; Trigger 1989), his early excavation and subsequent reevaluation of Native American architecture have received less attention.

During the 18th and 19th centuries, scholars believed that social progress was a process of cultural development, beginning with a primitive stage and progressing to more advanced stages (Trigger 1989). This framework provided Jefferson the conceptual model that he used to interpret his excavation at the small earthen mound located on the Rivanna River in Virginia. Jefferson's early approach was comparative in nature: he evaluated the Rivanna River mound within the context of the prevailing idea that cultural development progressed from simple to complex, with European societies, and their architecture, as the apex of cultural development (Kennedy 1992).

Jefferson (Kennedy 1992) reported the Rivanna River mound as a Native American burial structure but not something as advanced as the architecture found in Europe. The act of piling dirt seems to have led Jefferson to believe that this was evidence for a primitive stage of cultural development in the Americas. The Rivanna River mound, to him, was a simple structure that lacked the organized labor and engineered designs expected for highly advanced (i.e., complex) cultures (Kennedy 1992).

However, during the 1780s and 1790s, individuals sent Jefferson drawings of earthen mounds discovered in the Ohio River Valley (Kennedy 1992:110). These Ohio and West Virginian mounds exhibited elaborate architectural forms, especially when compared to the Rivanna River mound. This new information persuaded Jefferson to reassess his early thought process.

Jefferson referred to the mounds found in the Ohio River Valley as true monuments that went beyond just the act of piling dirt (Kennedy 1992:110). The idea that Native American groups were responsible for the geometric architecture found at mounds in the Ohio River valley (and

other western river valleys) continued to gain momentum and by the middle 19th century was well accepted among scholars.

William Bartram

William Bartram was a naturalist who traveled through the Southeastern United States from 1773–1777, recording many of the cultural aspects of the region (Van Doren 1928:31). In 1787, Bartram published his book *Travels* in which described the lifeways and customs of Southeastern Indian tribes (Sayre 1998). The writings found in *Travels* provide an example of how another 18th-century American scholar perceived the link between Native American social complexity and monumentality.

Bartram's travels brought him through the St. John River Valley in Florida where he recorded the presence of sand and shell mounds (Van Doren 1928). Bartram believed that sand mounds were intentionally constructed as ritualized locations, while shell mounds were just the remains of food debris that had been discarded during meal preparation and consumption. Bartram's biases about shell mounds is apparent in his descriptions of both sand and shell mounds. In *Travels*, Bartram provided only vague and generalized descriptions of shell mounds while providing detailed measurements for sand mounds. For example, Bartram reported the sand mound at the Mount Royal Site (8PU35) as 100 yards in diameter and 20 feet in height while only describing large shell mounds as "high or bluff areas."

In addition to his travels in Florida, Bartram (1791) also spent time with the Creek Indians that lived in Alabama and Georgia. While living with the Creek Indians, Bartram (1791) recorded the types of structures and spatial patterning in the villages, including illustrations of public houses, chunky yards, private residences, and earthen mounds. He was especially impressed with their ceremonial and civic structures and went to great lengths to describe these structures in detail.

However, Bartram (1791) believed that the small earthen mounds at Creek villages did not fit into the narrative of an emerging complex society. Bartram explained that the earthen mounds were not built by the Creeks, but instead, were built by a less-than-complex group of Native Americans who had resided in the area prior to the arrival of the Creeks.

Mainstream Acceptance of the Architectural Model For Mound Building Cultures (1780–1894)

The period from the 1780s to the late 1890s was a formative period in Native American mound research. A discussion of the intellectual trajectory on the research on earthen mounds helps to understand how these early ideas influence the ideas concerning shell mound construction. Early ideas on mounds were formulated from the excavation of small earthen mounds, mounds that lacked architectural designs (Squier and Davis 1848). This lead early scholars, like Thomas Jefferson, to associate mound building with less-than-complex cultures, especially when compared to the 18th and 19th century architecture found in Europe (Kennedy 1992).

The discovery of large, geometrically designed earthen mounds, first in the Ohio River Valley, and later in the Arkansas River and Mississippi River Valleys, compelled a reevaluation on Native mound construction. While Thomas Jefferson and William Bartram had associated small earthen mounds and shell mounds with socially less-than-complex native communities, the new, architecturally sophisticated mounds, were recognized as more complex Native American creations (Kennedy 1992). By the middle 19th century conceptual models went beyond the question of mound origins as these models were upgraded to answer the question on what had happened to these Native mound building cultures (Squier and Davis 1848).

The Mound Builder Myth Revisited

As Anglo-American settlers migrated into the major river valleys of the interior, they quickly recognized the uniqueness of earthen mounds in these areas (Squier and Davis 1848: xxxii, Martinko 2009:31). Unlike the Virginia mound that Jefferson studied, these new mounds included a variety of designs and types that consisted of platform mounds, effigy mounds, and cone-shaped mounds (Martinko 2009:31). As more and more of these precontact earthworks were discovered, both scholars, including Thomas Jefferson, and amateur antiquarians studied the function and origin of mounds (Kennedy 1992, Martinko 2009:37).

One approach placed unknown Europeans or other peoples as the mound builders and theorized that Vikings, Welsh, or Egyptians constructed the large earthen mounds (Drake 1815). The European model stated that an unknown population of Europeans settled North America and constructed earthen mounds. As early as 1794, some American scholars noted that the earthen mounds in North America had similarities with stone pyramids found in Mesoamerica. They believed these similarities were evidence for a common ancestry (Drake 1815:217). This connection resulted in a narrative that placed a semi-advanced Native American race in North America during the time when these more complex mounds were constructed. The scientific and professional community (university professors, government, and military officials) accepted this narrative and began to present arguments for this lost race of Native Americans (Drake 1815:217).

In 1815, Daniel Drake published *The Natural and Statistical View of Cincinnati and Miami County* where he associated mounds in the Ohio River Valley with this lost advanced race. While Morton's and Drake's ideas were popular during the 19th century, their ideas are no longer accepted and have been discredited. The idea of a semi-civilized race gained further support with

the publication of *Crania Americana* (1839) by the physical anthropologist Samuel Morton. Morton (1839) classified races based on their different anatomical features, primarily by the differences in the size of their crania. His dataset contained crania from 40 different Native American tribes including crania that had been excavated from the earthen mounds located in Eastern North America; while now discredited, his work was influential at the time (Morton 1839).

Native Americans were placed in two groups based on cranial volume, the American Family and the Toltecs. The American Family was a collection of uncivilized native tribes that shared smaller sized cranium while the Toltecs were a more advanced race evident by larger crania. Morton (1839) described the American Family as having difficulty understanding numbers and mathematics and thus incapable of building complex mounds. In contrast, the larger crania volume of the Toltecs meant they had the ability to develop a stable civilization and control a large hinterland, a hinterland that was populated by the less-advanced American Family. Eventually, the Toltecs were attacked by the American Family and driven out of North America into Mexico and Central America where they constructed stone pyramids. Once in Mesoamerica, the Toltecs (with the absence of the American Family) achieved the height of their civilization, evident by the construction of stone monumentality (Morton 1839).

Ephraim Squier and E. H. Davis were two westerners that conducted a scientific study of Ohio River Valley mounds. Ephraim Squier was a newspaper editor living in southern Ohio, while E. H. Davis was a local physician, also living in southern Ohio. During the years from 1845 to 1847, they excavated and mapped approximately 200 earthen mounds and published their fieldwork in a book entitled *Ancient Monuments of the Mississippi Valley* (Squier and Davis 1848). Squier and Davis expanded the Toltec concept in their publication *Ancient Monuments*

of the Mississippi Valley. According to them, the first development stage of Toltec society was represented by the construction of earthen mounds (in the United States), while the second stage of society was represented by the construction of stone monumentality (in Mesoamerica and Central America). The first stage corresponded with the Toltecs governing over the American Family, which was living in the rural hinterlands beyond the Toltec mound complexes. The second stage was a result of the Toltec expulsion and their arrival in Mesoamerica and Central America. Once there, the Toltecs were free of conflict with the less-intelligent American Family and able to achieve some degree of civilization (Squier and Davis 1848).

While these early ideas and publications were founded in racist ideology and used by colonists to settle North America, most of these ideas have been discredited. The influence of *Ancient Monuments of the Mississippi Valley* on Southeastern archaeology was that there now existed a basic conceptual model to interpret the different types of mounds, which were now at least being carefully mapped. This model described a basic three-tier system and was evolutionary in nature: the lowest tier consisted of the small, simple earthen mounds (similar to Jefferson's Virginian mound). The middle tier consisted of the pyramid, cone, platform, and animal effigy mounds constructed by the Toltec communities before their expulsion to Mesoamerica and Central America, while the stone pyramids of Mesoamerica and Central America represented the zenith of Native American accomplishment. Mounds constructed from sand, and shell mounds, were not mentioned in *Ancient Monuments of the Mississippi Valley* (Squier and Davis 1848).

The Addition of Cultural Trait Lists—Late 19th Century to Early 20th Century

The end of the mound builder question came in the 1890s (Thomas 1894), after a decade of extensive excavations by the Bureau of American Ethnology demonstrated beyond doubt that the mounds had been built by Native American people. This conclusion prompted scholars to focus

on new research questions, primarily the relationship between cultural diversity and the evolutionary progress of civilization. While the development of a cultural attribute list permitted archaeologists to categorize precontact Native American communities, they needed to explain the catalysts that produced what they perceived as transitions from one stage of cultural development to the next. The adaptive-unilineal approach was an umbrella concept that was used to promote several conceptual models that explained the temporal diversity found in the archaeological record (Chapman 2003:38).

The basic premise placed cultural development along a temporal timeline that associated technological and subsistence advancements with stages that ranged from simple to complex, with certain cultural attributes serving to identify each stage of cultural development. The adaptive-unilineal model did not formally address changes of the human-animal relationship; however, the type of subsistence activities formed an important cultural attribute to identify cultural stages. The adaptive-unilineal model placed agricultural as the highest achievement in food production while extensive consumption of shellfish and fish was thought to represent the lowest (i.e., the simplest) development for Native American social organization. Below is a brief description of some of the widely available publications and research by prominent archaeologists and anthropologist that influenced the interpretation of shell and earthen mound archaeology from the late 19th century into the middle to late 20th century (Chapman 2003).

Another influential publication, *Ancient Society*, was written by Lewis Henry Morgan and available to the public in 1877 (Morgan 1877). In this book Morgan detailed his ideas on the stages of social and cultural development, including the cultural stage for shell mound cultures. Morgan's three stage approach for civilization included savagery (Stage 1), barbarism (Stage 2), and civilization (Stage 3). The transition from one stage to the next originated with changes in

the subsistence economy. For Morgan (1877), non-complex societies (i.e., egalitarian hunter-gatherers) relied on fish and shellfish, while the more complex societies developed complicated food systems supported by agriculture (Morgan 1877:21). To account for cultural diversity within each stage, Morgan subdivided each primary stage into a Lower, Middle, and Upper phase. During the savagery stage, people supported themselves through a subsistence economy centered on fish and shellfish, use of the bow and arrow and the use of fire. They invented pottery during the barbarism stage with a subsistence economy supported by the cultivation of maize, while the civilization stage continued to have a maize economy, but communities adopted a sedentary lifestyle (Morgan 1877:21).

Morgan (1877) approached human diversity through a two-tiered hierarchy that placed humans into two organizational modes: a social organization and a political organization. The earliest type was the social organization that grouped people along sex and kinship lines and later into tribes. In a social organization, relationships and interactions occurred at the individual level and was considered to be the social structure found in Archaic populations (Morgan 1877:6). The political organization emerged in later advanced societies where people were defined into political units like towns, counties, and kingdoms. Morgan (1877: 6) pointed to the Greeks and Romans as examples of early political organization where populations were organized into towns or wards (Morgan 1877:6).

The Social Organization: Savagery and Barbarism

Morgan (1877) divided early forms of social organization into phases of savagery and barbarism.

Morgan (1877) saw the earliest human stage:

Savagery was the formative period of the human race. Commencing at zero in knowledge and experience, without fire, without articulate speech and without arts,

our savage progenitors fought the great battle, first for existence, and then for progress, until they secured safety from the ferocious animals, and permanent subsistence.

The savagery and barbarism phases were each discussed as middle and late stages depending on certain subsistence and technological traits. People that lived in the Middle Savage Phase subsisted on fish and used fire, while people living in the Upper Savage Phase used the bow and arrow and procured animals other than fish. The use of pottery vessels defined a Lower Stage of Barbarism while communities that owned domesticated animals, cultivated domesticated plants were considered living in a Late Stage of barbarism.

The social structures for the savage and barbarian ranged in complexity along a linear trajectory. People living in a Middle and Upper stage of savagery were organized around family groups (stages) to tribes with chiefs and councils by the Late Stage of Barbarism. Morgan (1877) believed that the domestication of maize and beans allowed Native groups in the Americas to achieve a Late Stage of Barbarism.

Cultural trait lists for community organization continued after the publication of *Ancient Society*, with the works of Elman Service, Leslie White, Julian Steward, Joseph Caldwell, and many others. Although Elman Service focused on the social organization of hunter-gatherers in the American West, he advocated for four stages of cultural development in human societies worldwide in his publication *Primitive Society* (1962). Service (1962) identified these four stages as: hunting and gathering bands, agricultural tribes, chiefdoms, and fully developed states. Like Henry Morgan's scheme, each cultural stage was dependent on the type of subsistence economy with the ultimate advancement linked to the widespread adaptation of agriculture and sedentism, and mechanisms for collecting and distributing production (Chapman 2003:35; Service 1962). Leslie White (1959) and Julian Steward (1955) championed an evolutionary approach to explain

social change. White (1959) believed that societies evolved along a simple to complex trajectory by the improvement of technological achievements that maximized energy production. As energy production increased, so did the complexity in the community organization. Steward (1955) presented a slightly different viewpoint. He presented the idea of multi-linear evolution, in which cultures adapted to restricted environmental niches, developing localized culture types fueled by localized environmental adaptations. For Steward (1955), cultures located in similar environments should have produced similar adaptations and culture types.

Joseph Caldwell (1958) presented his “primary forest efficiency” concept in the 1958 publication *Trend and Tradition in the Prehistory of the Eastern United States*. Caldwell described three major trends or periods in the Eastern Woodlands. The first period was the establishment of hunter-gatherer lifeways, the second trend consisted of hunter-gatherer groups fully and intensively adapting to local niches and developing local cultural traditions, while the third trend consisted of the development of major cultural centers based initially on foraging and later on agricultural food production that were connected across the landscape (Caldwell 1958).

The New Archaeology

By the 1960s, American archaeology coalesced into the “New Archaeology,” or “processual” archaeology (Binford 1962:217; Chapman 2003:39; Trigger 1989:295). Although the New Archaeology had its roots in the earlier theoretical writings of Walter Taylor and Julian Steward, it was the research and writings of Lewis Binford during the 1960s that moved New Archaeology to the forefront of American archaeology (Trigger 1989). Patterson (1989) describes the theoretical underpinnings of the New Archaeology as the theory that culture and cultural changes are best understood within the framework of environmental adaptation. Bruce Trigger (1989) argued that the foundations for the New Archaeology were neo-evolutionary

models that limited the recognition of historical processes as agents for social formation and social change. Community structure and culture were created to support adaptations to the environmental settings and to maintain resource procurement strategies.

During the 1980s, Lewis Binford published a series of articles describing hunter-gatherer cultural organization within the framework of settlement mobility in relation to resource procurement.

Binford (1980:5–12) explained that hunter-gatherers practiced a fluid social organization that was based either on a forager system or a collector system. Each system formed as a response to the spatial distribution of resource patches (Binford 1980:5). A forager system was organized by highly mobile groups to procure resources from homogenous patches (Binford 1980:6). Hunter-gatherers lived in a residential base and made daily trips to resource patches. Residential bases were expected to have a high density of artifacts including residential structures, wood working and food processing tools. In a collector system, a basecamp or residential location was established by hunter-gatherers, and task-oriented groups were then organized and traveled from the residential camp to access certain resources, which were irregularly or heterogeneously distributed over the landscape. Collector system procurement trips typically lasted several days or longer, while forager system task groups, in contrast, returned to residential camps every day.

A primary critique of the New Archaeology, and technological organization approaches to foraging, was that such an approach could not explain the diversity found in the archaeological record. The New Archaeology thus failed to consider the use of ideology and symbols, or that people could have agency (Van Pool and Van Pool 1999:37). Critics argued that climate and environmental causes are not the sole causes of cultural change, but that the actions of individuals can also produce social change (Van Pool and Van Pool 1999:37). Critics of the New Archaeology also rejected the strict evolutionary models that placed communities into categories

like tribes, chiefdoms, and states, thus opening better research avenues into sites like shell mounds (Van Pool and Van Pool 1999:37). The result was that some archaeologists began to use a historical approach to account for cultural change in the archaeological record. The study of shell mounds and our understanding of the peoples who made them changed as research approaches and theoretical perspectives changed (see Claassen 2010).

Post Processualism, History, and Agency

Post processualism offered a new framework to interpret the historical trajectory of precontact communities including hunter-gatherers that constructed shell mounds (Claassen 2010). Post processual archaeologists view the past as an active environment where individuals created history through everyday action (Dyson 1993). These actions were constituted through patterns that involved the interaction of individuals, the historic context, and the formation and maintenance of power relationships. One everyday action was the formation of social contracts with animals, or the human-animal relationship (see Social Zooarchaeology discussion below). Post processual archaeologists are interested in the social relationships within a culture and how these relationships influenced all of society, including (but not limited to) power relationships (Dyson 1993:199). Agency, or practice theory, have been influenced by the work of social philosophers and structuralists that include Marshall Sahlins, Pierre Bourdieu, and Anthony Giddens (Dyson 1993:201). From an agency perspective, archaeological sites are areas where culture was created, reinforced, and changed (Owoc 2005). Sites become those places where the practice of culture building and/or culture change plays itself out (Owoc 2005). Agency refers to the actions of individuals in this process of culture building and includes the relationships between people and groups of people. The actions of the community form the basis of analysis in agency theory (Owoc 2005). Marshall Sahlins was an anthropologist who spent most of his

career working with the Indigenous tribes of the Fiji and Hawaiian Islands. For Sahlins (1985), culture was used to influence behavior and developed through historical processes. When a cultural system encountered events that changed the structures in a system, these changes did not always produce a predictable outcome but depended on the historical context (Sahlins 1985). Additionally, Bourdieu (1993) identified the concept of “cultural fields” as the institutions and social rules that create social hierarchies. Cultural fields are not static but are always being challenged by individuals trying to promote their own interests.

Patterson (1989) recognized that while there are different ways that agency can be applied to archaeological research, some approaches view the archaeological record as a cryptic text that can be read, while others focus on the power relationships that existed in precontact communities. Joyce and Lopiparo (2005) argue that individuals have the ability, or agency, to change the structures that comprise a cultural system. They view this ability along a spectrum. At one end of the spectrum, the traditions and culture of the community restrict, or inhibit individuals from changing social structures while at the other end of the spectrum individuals practice a large degree of freedom to change and manipulate social structures.

Archaeologists can approach agency through 1) examining the means that individuals had to influence or change social norms, and 2) by examining how change happens at differing scales (Pauketat 2007). The scale is the nature of the decision maker from an individual to a more collective group of individuals. The identification of sequences of action that produce the artifact assemblages and patterns allow for archaeologists to examine agency through time. While individuals act as agents in their communities, they also form a collective community that acts to reproduce the culture, through the creation of memories (Pauketat 2007). A major feature of contemporary archaeology is collaborative interaction with Native peoples. That is the approach

adopted here. The sites and artifacts being studied here have been variously examined and interpreted through the years, largely from a typological and natural science perspective and more recently from a neo evolutionary perspective (Claassen 2010, Lewis and Lewis 1961). But until this study, the actions and agency of the peoples who created them have only been minimally considered. Indigenous and humanistic views are important, and are here brought into full consideration, through regular communication about the research with the descendants of the peoples who lived here.

Social Zooarchaeology

Social zooarchaeology focuses on the cultural aspects of the human-animal relationship. Russell (2012:6761) describes Social zooarchaeology as a field that "... explores aspects of the human-animal relations beyond the dietary and human-human-relations negotiated through animals, including the value of animals as wealth and symbols, sacrifice, and other ritual use of animals, taboo, and the overvaluation of meat and its use in transactions of status and relations through meat sharing and feasting." Social zooarchaeology can bring into focus the different social relations that shape a community through the manipulation of animals and animal resources (Russell 2012: 6763).

Three primary relationship categories are used to examine the human-animal relationship: human/wild, human/wild/domesticated, and modern/market economy. These different categories are designated according to their different social organizations; hunter-gatherers (human/wild), agricultural societies (wild/domesticate), and market economy. These human-animal relationships are discussed in more detail in Chapter III and explored throughout the remainder of this dissertation (Russell 2012).

The Impact That 19th Century Approaches had on Shell Mound Archaeology

The discussion in Chapter II has provided a context for understanding how American archaeology developed the idea that shell mound cultures were organized as egalitarian communities. Egalitarianism was determined by building material (shells), by monument type (shell mounds), and by the absence of grave goods. This model fit neatly with evolutionary thinking that equated shell mound cultures with egalitarian subsistence modes. As a result, 19th- and 20th-century narratives continued to point out that without an agricultural surplus, shell mound cultures represented little more than egalitarian hunter-gatherer-fisher communities. The work of Jefferies Wyman demonstrates this point (Wyman 1875). Wyman investigated shell mounds along the St. John's River Valley region of northeastern Florida during the 1860's. He identified two types of shell deposits, shell fields and shell mounds. Wyman had no issue with identifying Native Americans as the people that built the shell mounds and shell fields during an earlier stage of their development. According to Wyman (1875:2):

From the facts brought together in the following pages, but especially from the presence of fire places, ashes, calcined shells, charcoal, and implements, together with the bones of edible animals and occasionally those of man, found at various depths from top to bottom, and the absence of everything which might have been made by the white man, it seems certain that these mounds were the accumulations by, and the dwelling places of?, the earliest Indian inhabitants, during the successive stages of their formation....

Wyman (1875) reasoned, using the racist evolutionary arguments of the period, that more advanced later Native Americans would have used materials like sand and earth to build mounds instead of shellfish. He believed that the shell mound cultures of the area had left and were not related to the 19th-century Native Americans living in the vicinity of the St. Johns River Valley.

These Native Americans exhibited elements of civilization including agriculture and the construction of earthen mounds.

Other examples of these perspectives are seen in the reports of investigations into shell mounds on the West Coast by Max Uhle and across the Southeast by Clarence Bloomfield Moore. Max Uhle (1907) excavated shell mounds along the California coast, including the excavation at the Emeryville shell mound located in the San Francisco Bay area (Uhle1907). His analysis of the Emeryville shell mound shows how early 20th-century academics were thinking about shell mounds and shell mound cultures. Shells, as a construction material, were associated by Uhle (1907:31) as the realm of a simple cultural stage, products of food refuse locations. Uhle (1907: 31) used his excavation at the Emeryville Shell mound site to describe his belief that shell mounds represented the simplest stages of human cultural development:

Hence these localities represent, in certain stages of human development, true but nevertheless low types of human dwelling places. The manner of procuring the essentials of life by collecting shells in itself indicates a low form of human existence. In all parts of the world, even today, people may be seen on the shore at low water gathering for food the shells uncovered by the retreating tide; and although under the conditions of life they raise no shell mounds, these people always belong to the low classes of society and lead in this manner a primitive as well as a simple life (Uhle 1907:31).

Based on his fieldwork at the Emeryville mound, Uhle (1907:34–35) believed that large shell mounds were products of a long historical development that occurred over thousands of years, lasting up until European contact. While he acknowledged the long process for shell mound formation, he viewed this process as the continued general adaptation to a shellfish subsistence

economy that supported what he considered a primitive form of social organization through the time (**Figure 3**).

During the first two decades of the 20th century, C.B. Moore (Moore 1929) excavated shell mounds located along the major rivers in Florida and the Mid-South. He used a classificatory scheme that divided precontact Native American communities as either “low-culture” or as “high-culture” (Moore 1929). The absence of art and regional commerce was evidence for a low-culture while the construction of large earthen mounds, advances in ceramic technology, and the ability to produce elaborate stone art were evidence for a community that had achieved a high-culture. For example, Moore used the Etowah mound group in Georgia and the Moundville site in Alabama to demonstrate represented areas where “high culture” had developed during precontact times. He described shell mounds as dwelling sites. The absence of pottery and the lack of any architectural remains was evidence to Moore that an earlier, less-than-complex, Native American group had inhabited these river valleys. However, Moore did recognize that not all shell mounds were constructed in the same manner. He described five categories of shell mounds (Moore 1929). The first type was constructed with opened shells and intermixed with sand and loam as building materials. This mound type was described as a refuse dump that accumulated through time. The second type was constructed from unopened shells but without sand. These shell mounds represented a communal refuse area that accumulated quickly. The third shell mound type consisted of stratified layers of opened shells and unopened shells. This shell mound represented different habitation episodes followed by periods of non-habitation. The fourth shell mound type consisted of shell heaps used for habitation that were covered by refuse piles of shell after abandonment. The fifth mound type included conical shell mounds that functioned at ceremonial mounds or as guard towers (Moore 1929). The view that shell mounds

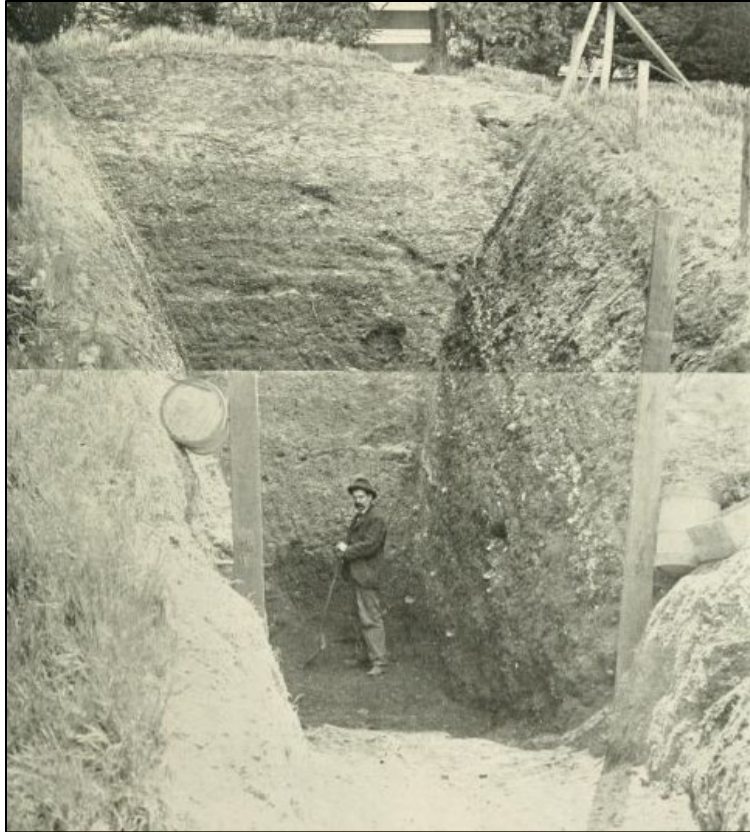


Figure 3. The Emeryville Shell Mound. Uhle (1907).

represented a less-than-complex Native American organization continued into the mid to late 20th century and heavily influenced the interpretations of shell mound archaeology during the 1930s and 1940s (Lewis and Lewis 1961).

Shell Mound Archaeology 1930s–1990s

The next major period of shell mound archaeology in the Mid-South occurred during the 1930s and 1940s under the direction of the Tennessee Valley Authority (TVA) (Pritchard 2009). TVA was created in 1933 to provide electricity to the Mid-South. Soon after, TVA began to construct dams and hydro-electric facilities on the major rivers of the Mid-South. As the plans for these facilities became a reality, many in the scientific community realized that important archaeological sites would be impacted by the new reservoirs and artificial lakes (Pritchard 2009). Fieldwork in western Tennessee and northern Alabama identified shell mound sites including the Eva, Cherry, and Big Sandy sites in western Tennessee and the Perry site and Big Bear Creek sites in northern Alabama (Bissett 2014). While the fieldwork at these sites was conducted during the 1930s and 1940s, due to the intervention of World War II the analysis and interpretations were primarily published during the 1950s and 1960s, with some analyses and reporting continuing up until the early 21st century.

Modern archaeology in the Mid-South is discussed in more detail in later chapters. Briefly, this period up to ca. A.D. 2000 (when models based on history and agency take hold in precontact archaeology), was influenced by ecological-evolutionary and New Archaeology approaches (Sassaman 2010). Hunter-gatherer research focused on the interplay with hunter-gatherer site formation and environmental/subsistence practices. In addition, the ecological-evolutionary approach presented trait lists that linked cultural complexity with greater or more elaborate population density, settlement patterns, social complexity, and agricultural proficiency.

Adherents to this approach understood humanity's ancient past as a series of stages, where communities evolved from hunter-gatherer economies to agriculturally based societies (Chapman 2003:33).

Thomas M.N. Lewis and Madeline Kneberg Lewis (Lewis and Lewis 1961) excavated several shell mound sites in the Tennessee River Valley primarily in the first half of the 20th century. They interpreted changes in mussel shell densities and deer bone densities at the Eva site within a binary subsistence system: periods of high mussel density corresponded with the absence of deer availability contrasted by periods of low mussel density once deer populations recovered in the region (Lewis and Lewis 1961:20).

1990s–New Ideas on Shell Mound Cultures

Beginning in the 1990s, post processual influences began to inform and direct shell mound archaeology in the Southeast, as archaeologists began to historicize shell mound cultures, investigating them within their own unique historical framework. In 1994 a collection of papers exploring the antiquity of early mounds, entitled *Archaic Mounds in the Southeast*, was published in the journal *Southeastern Archaeology*. A decade later Jon L. Gibson and Philip J. Carr (2004) released an edited book by many leading scholars in the region, entitled *Signs of Power: The Rise of Cultural Complexity in the Southeast*. These publications widened theoretical approaches beyond the egalitarian mantle, proposing that Archaic shell mound cultures were capable of different, and complex, social organizations.

In the early 21st century, Kenneth Sassaman (2004, 2010) and Cheryl Claassen (2010, 2014) historicized Archaic hunter-gatherer communities through several influential publications. Sassaman (2010) presented his “ethnogenesis” model that proposed that migration and continued interaction of culturally different communities created and re-created the regional cultural

diversity found in the Shell Mound Archaic. Claassen (2010:199–208) critiqued the Primary Forest Efficiency and culture trait list approaches to investigate the societies that created the shell mound cultures of the Mid-South. She believed that shellfish were used socially and were not just part of the hunter-gatherer diet (Claassen 2010: 199). Michael Russo (Russo 2004) has studied shell rings. His work focuses on the distinctive shapes of Archaic shell rings in Florida, Georgia and South Carolina. He believes that the diversity in shell mound shape was a decision made by the builders. He has included several anthropological models that include feasting and social space theory (Grøn 1991) to argue for an enhanced social complexity for the peoples that made them. He suggests that circular shell rings represent more egalitarian hunter-gatherers while the U-shaped shell rings represent more hierarchical communities, and that sites where the monumentality is uneven may be products of community size and social status of constituent subgroups (Russo 2004).

Conclusion

The theoretical frameworks that coupled social organization with mound building cultures began in the 18th century and have continued to shape our interpretations to this day. The goal of these early and later researchers was to explain the diversity in precontact cultures. For early scholars, fieldwork was concentrated on the most visible evidence of precontact social diversity, the construction of dirt, shell, and sand monuments.

Limited in archaeological and historical contexts, 17th, 18th and 19th century American researchers relied on conceptual models that were popular at the time, mainly the idea that cultural development was a linear, or staged development. As colonial scholars struggled to keep pace with the new discoveries that persistently challenged fixed perceptions of Native American lifeways, they continually redesigned their conceptual model to incorporate the new discoveries.

What emerged was publications that narrated the historical trajectories of Indigenous communities through lenses of race, mound construction, and social organization.

By the 19th century, leading scholars, recognized that past Native American groups were responsible for mound construction, regardless of size, plan, and/or design. The development of ideas that recognized social organization/mound classificatory systems placed shell mound cultures at the bottom of cultural advancement. This approach persisted until the 19th century, and arguably among some researchers much later in time. In recent decades, the focus has shifted to include other cultural traits, and we are beginning to realize the great diversity found in shell mound cultures. Beginning in the 1980s, the post processual and historical models offered different pathways to investigate shell mound cultures, which consider the thoughts and views of the descendants of the people who made them.

CHAPTER III

HUNTER-GATHERER SOCIAL ORGANIZATION

Introduction

In this chapter I examine the range of social organization likely in hunter-gatherer societies, to help evaluate what kinds of organizations and practices may have been present in the Shell Mound Archaic peoples of the Midsouth. Egalitarian and transegalitarian hunter-gatherers had a wide range of interactions with animals. These interactions were structured within a cultural system that organized each human-animal relationship within a social context. For hunter-gatherers, human-animal relationships embodied the social organization of the group, expressed through several social practices that included food distribution, feasting, food taboos, and hunting rules (Dietler and Hayden 2001:3, Kelly 2013).

This chapter is not meant to be an exhaustive discussion on hunter-gatherer social organization but is provided as a basic context to discuss the connection between social organization and human-animal relationships of hunter-gatherers. It also demonstrates the variability present in these societies, something that was also evident over time in the Southeast (Sassaman 2010).

Egalitarian Hunter-Gatherers

Egalitarian hunter-gatherers are defined as those hunter-gatherers that practice high mobility, share large and small game animal meat, fish, and/or molluscan resources, lack long term food storage, and have a restriction on permanent social leadership and social hierarchies (Kelly 2013: 296). Egalitarianism is not a natural human state, but a social construct that must be maintained through social rules and continual participation of its membership (Cashdan 1980:116; Angelbeck and Grier 2012; Kelly 2013). Flanagan (1989) tackles the issue of what is meant by egalitarianism by describing hunter-gatherer organization along two social dimensions:

stratification and hierarchy. Social stratification arranges people into groups, while hierarchy is the creation of inequality between individuals. Egalitarian hunter-gatherers employ some degree of age and gender social stratification, but do not form permanent hierarchies (Flanagan 1989:254, Kelly 2013:299). As Kelly (2013:296) explains, “Egalitarian societies are not those in which everyone is equal, or has equal amounts of material goods, but those in which everyone has equal access to food, to the technology needed to acquire resources, and to paths leading to prestige.”

Egalitarian communities are typically organized around gender and age, as gender differences can dictate a sexual division of labor (Kelly 2013). Watanabe (1968:75) believes that prey distribution and mobility patterns influence the sexual division of labor. Because plant and animal resources are difficult to procure in the same location at the same time, males are better suited to pursue wild game because of their ability to travel long distances without children. Large game hunting requires high mobility, long periods of time, the ability to stalk prey uninterrupted, and the ability to travel long distances from residential camps (Gurven and Hill 2009:57). However, this is not a human universal since females are well documented hunters of all sized game in some societies (Anderson et al. 2023; Kelly 2013).

Ethnographic studies of 20th-century egalitarian hunter-gatherers provide a baseline to understand precontact egalitarian social organization. Richard Lee (1979) observed gender and age stratification among the modern-day !Kung San of Botswana. Lee (1979) found that men typically focus on the hunting of large animals while leaving the smaller game as prey for women to hunt. While !Kung men pursued large game animals, !Kung women organized themselves in groups of three to five people and travel to areas where food is to be collected. A recent study (Anderson et al. 2023) documents that women also hunted some at least some of the

time in most hunter-gatherer societies, and that a strict sexual division along gender lines is an inaccurate and misleading stereotype.

Another African group, the Eastern Hadza, were highly mobile hunter-gatherers prior to the mid-1960s when the government forced them to settle into villages (Woodburn 1968:105).

Traditionally, the Eastern Hadza moved across 1000 square kilometers of landscape, forming camps that numbered between 1 to 100 people (Woodburn 1968:105). Camp population was not constant; people moved freely between camps without needing permission, there were no formal positions of authority, and camps typically dissolved and reconstituted as a response to food scarcity, arguments, or in-fighting (Woodburn 1968:106). A pattern of group fissioning due to dispute frequency among hunter-gatherers was noted by Gregory Johnson (1982). Woodburn (1968:53) points out that the egalitarian Hadza did not preserve or store meat and plant resources, mainly because any stored food was required to be shared within the group.

However, Cashdan (1980:117) demonstrates that one !Kung group, the Gana, practiced a form of social organization that was closer to hierarchical or nonegalitarian. This trend toward hierarchy was influenced by the ownership of domesticated animals. Goat and cattle meat comprised only 10 percent of Gana subsistence, with the majority of meat coming from bush animals. While the Gana hunted and consumed the traditional large game, individuals were allowed to build wealth through the ownership of domesticated cattle and goats, something that was taboo in the other !Kung communities. Goats were especially important, and their meat was used as food at ceremonial events and as currency for bride payments (Cashdan 1980:119). Unlike traditional !Kung, the Gana did not employ chiding or insults as a social leveling mechanism; instead, wealthy Gana men were allowed to make decisions for the group. Respect and prestige were afforded to Gana men that had animal wealth, something that Cashdan (1980:120) describes as

similar to a “big man” society (after Sahlins 1963). The importance of the Gana example is that it demonstrates that hunter-gatherers can build wealth through animal ownership or control, while not radically altering their subsistence base of wild animals and plants.

Transegalitarian Hunter-Gatherers

The differences between transegalitarian and egalitarian hunter-gatherers are mainly in scale and organization. The idea of a transegalitarian organization was first defined in 1989 by Clark and Blake (Clark and Blake 1994). Transegalitarian hunter-gatherers were later summarized by Hayden (1995:18) as societies “that are neither egalitarian nor politically stratified ("politically stratified" societies include chiefdoms with relatively fixed classes and a hierarchical settlement pattern).” A transegalitarian community has social hierarchies that can exercise direct control over resources, limit access to knowledge, and exert control over the labor of others. However, this control was organized by individuals that have achieved some level of prestige and social power but could not exercise this power through a centralized authority (Clark and Blake 1994, Hayden 1995:19).

These communities develop a structural organization that supports labor control and institutionalized hierarchies of inequality (Arnold 1996:90; see also Clark and Blake 1994, Hayden 2001a). Arnold (1996:78) defines transegalitarian gatherers as communities where social and political rank is conferred at birth, there is visible social differentiation, members participate in communal events, and there are labor obligations, territoriality, and ownership.

Transegalitarian societies differ from segmentary and ranked societies in how power and inequality is distributed within each organizational type (Smith 1955). Ranked societies were organized around a few elite or upper social classes and high ranking political individuals. In a ranked society the political and social power is exercised by a few people. Segmentary societies

are organized through descent/genetic lines that people trace to a common ancestors (Smith 1955:39). Theoretically, segmentary societies practice a form of egalitarian within the lineages with sub lineages arranged in a hierarchal structure (Smith 1955:39).

Transegalitarian hunter-gatherer communities were documented by European explorers in Florida and in the Northwest Coast of North America (Kelly 2013:302; Marquardt 1986, 2016). Europeans recorded a transegalitarian or possibly a chiefdom-level group, the Calusa of Florida, during the 16th century (Marquardt 1986, 2016). Europeans also encountered transegalitarian communities in the Northwest Coast of North America during the 18th century (Kelly 2013:302). These communities practiced sedentism, restricted mobility, owned prestige goods, and produced surpluses (Kelly 2013:302). The Calusa may have been a chiefdom level society while the groups on the Northwest Coast were closer to the transegalitarian structure. Chiefdoms are those societies that develop a centralized political class that exercise control over a large area or over a number of large settlements. Earle (1987: 282) describes chiefdoms as “polities [that] vary in size from simple chiefdoms integrating populations of perhaps a thousand to complex chiefdoms with populations in the tens of thousands” . Northwest coast hunter-gatherers were confined to smaller areas with relationships at much smaller scales between communities or individuals (Earle 1987:285). Hunter-gatherers in the Northwest coast were not chiefdoms based on the absence of a large-region wide control (Earle 1987:285).

These early European accounts are important because they show that hunter-gatherer communities could be organized along hierarchal lines with a chief, noble class, commoners, and slaves and that social inequality among hunter-gatherer communities developed in some cases without a subsistence base centered on agriculture (Rowley-Conwy 2001:58). While European accounts validate the existence of transegalitarian communities in North America in recent

centuries, archaeological research has identified areas in the southeastern United States where hunter-gatherer social complexity developed much earlier, well back into the Archaic, if not before (e.g., Anderson 2002, 2004; Russo 1994, 2004; Sassaman 2010).

The Lower Mississippi Valley (Louisiana and Mississippi)

The Lower Mississippi Valley (LMV) is an area bordered to the south by the Gulf of Mexico and includes portions of the states of Mississippi and Louisiana. During the late 1980s and early 1990s, radiocarbon dating revealed that several earthen mounds in the region were constructed during the Middle Archaic period (Gibson 1994; Russo 1994). Sassaman (2010) reports that at least 30 LMV earthen mounds can now be attributed to the Middle Archaic period. The social and political organization of these communities is difficult to generalize about as a cultural phenomenon that was dispersed over a rather large area. The limited research conducted at these mound sites does, however, allow for a preliminary model. These Middle Archaic mound communities were located in resource rich environs, supported year-around occupations, were fed by a non-agricultural subsistence base, and constructed single mound communities as well as mound complexes throughout the landscape.

The Watson Brake site is a Middle Archaic mound complex that was constructed in northeast Louisiana. Sometime around 5400 cal yr B.P., hunter-gatherers constructed eleven earthen mounds in an oval pattern on a terrace overlooking the floodplain (Saunders et al. 2005:665). Test excavations conducted from 1993 to 1999 verified that the mounds were constructed in discrete building events with fill that was brought to the mounds and laid on top of past building episodes. Carbon 14 and luminescence dating brackets Watson Brake to a 400-year period of building and occupation, while the presence of spring, summer, fall, and winter plant and animal species indicates year-round use of the site. Saunders et al. (2005:650) have speculated that labor

and mound construction was organized at the site, although more investigation is needed to verify whether leadership was situational and temporary or more permanent.

The Calusa (Florida)

The Calusa were hunter-gatherers who lived in southern Florida (Thompson and Worth 2011:75; Reilly 1981:398). They controlled a territory along the Florida coasts 150–200 km in extent and with a population of over 20,000 people (Thompson and Worth 2011:75). The Calusa kings and elites maintained their social and political control through tribute payments and by controlling the cosmological belief system. The Calusa leaders were reported to control over 50 villages (Hann 1992:192; Reilly 1981:399).

Spanish contact in the sixteenth century produced a picture of Calusa social complexity that included slavery, a nobility, a king, inherited social status, a military, alliances based on marriages, and mound centers (Reilly 1981:398). While traditional thought placed shell mounds as food debris locales, the construction of shell mounds by the Calusa shows that complex hunter-gatherers used shells to build monuments. One shell mound was reported by the Spanish to be a 31 foot high, symmetrical shaped shell mound at the Calusa village called Calusa (Reilly 1981:399–409). Earle (1987) suggests that construction time may be associated with social complexity. State level and chiefdom societies can organize large scale labor over a short time period while transegalitarian groups can build monumentality over a longer period of time. The time to construct Calusa mounds is not known although reports that the population was ca. 20,000 (Thompson and Worth 2011:75) would have been sufficient to quickly construct monumentality.

Widmer (1983) linked the emergence of Calusa social complexity to the need to manage resources in a growing sedentary population. After 500 B.C., increases in population began to

stress the resource base and by A.D. 800, the Calusa needed a ranked hierarchical system to distribute resources to the populace. In contrast, Marquardt (1986, 2014) believes that prior to A.D. 500, the Calusa were organized as a simple chiefdom. The arrival of the Spanish and the social and political stress that occurred, caused the Calusa to develop a socially complex chiefdom to deal with Spanish encroachment.

Complexity Models Relevant to the Mid-South

Widmer (2004: 240–248) argues that hunter-gatherer social complexity developed over a series of generations by unilineal descent groups accumulating power, amplified by the availability of controllable resources. As a unilineal descent grew in membership, a “kin-based” power base emerged that eventually controlled less populous descent groups (Widmer 2004:241). Through time, lineages become ranked and associated with common ancestors, which allowed them to consolidate power and prestige through their ancestry (Widmer 2004: 244). For Widmer (2004:246), the growth of Archaic elite lineages coincided with shifts in environmental richness in some areas near and west of the Mississippi. The relative stabilization of the post-glacial rise in sea level, circa 6000 B.P., created lush resource patches in coastal and riverine areas. These areas were soon exploited by hunter-gatherers and resulted in the more complex communities that constructed the Middle Archaic mounds, including the Watson Brake mound complex (Widmer 2004:249). Lineages that were able to gain power through resource control, in some cases also constructed mounds as physical symbols of their power (Widmer 2004:251).

White (2013) attempts to explain social complexity during the Late Archaic through the Middle Woodland periods in North America by correlating family demographics and family size with subsistence intensification. White (2013) employed a computational model to argue that increased family size resulted in increased food surpluses. The model designates each family

member as a producer or as a consumer. Hunter-gatherer families that could increase family size through live births positioned themselves to accumulate wealth and control over more resources. Once children become foragers, households were able to increase production and increase surpluses. In order to continue the growth, storage became a private affair, and wealth was passed down from generation to generation. The need to privatize storage would also have occurred as families needed to store resources to support their growing number of offspring. White (2013).

The Pacific Northwest Coast

While the hunter-gatherer communities in the Pacific Northwest Coasts were located 3000 miles from the Mid-South, these communities provide another example that hunter-gatherers were capable of hierarchal societies. The Pacific Northwest Coast is an approximately 2000 km stretch of coastline beginning at Icy Bay, Alaska and extending to Cape Mendocino, California, with three primary environmental zones that include the northern coast, the central coast, and the southern coast (Ames 1994). Ethnographic accounts of Northwest Coast communities indicate that groups were organized around extended households, individual or group ownership of resources, partial or full sedentary communities, a high population density, and ranked households. Individuals within each household were ranked with higher ranking individuals owning slaves (Ames 1994). These communities reached populations of a thousand individuals in some cases (Ames 1994). Regionally, large shell middens become visible circa 4500–5500 B.P. and are linked to increasing sedentism, while sub-surface rectangular houses appear circa 3200–2800 B.P. followed by pit houses (Ames 1994:219). Human burials, with grave goods, become common around 3500 B.P. and include both exotic and utilitarian items, trophy skulls, and weapons that may have been used in both hunting and intergroup conflict (Ames 1994:223).

Examples of zoomorphic and anthropomorphic art forms also appear in domestic and burial contexts (Ames 1994:224). Archaeological research in the Northwest Coast supports the historic accounts that transegalitarian communities were present in the region. Hayden (1997) excavated the Keatley Creek site, a five-hectare site located in British Columbia that was occupied from 3500–700 B.P. The site contained approximately 120 pit house remains situated on a terrace overlooking Keatley Creek. Hayden (1997) interpreted the differences in pit house size as evidence that the inhabitants were organized into unequal social hierarchies that included the ownership of fishing areas, chiefs with the authority and power to control the labor of others, as well as trade and the movement of trade items.

Hayden (1997) based this interpretation on the differences in artifact assemblages recovered from the different size pit houses. The smaller houses sheltered poorer families with restricted access to salmon and plant foods. Prestige items found in smaller houses were of lower quality than the prestige items found in the larger houses. In contrast, the large pit houses contained private storage pits, which could store food for large families, as well as worked unusual items like nephrite, copper, and specially shaped bone pieces. The large houses had middens and cultural debris indicating a longer occupation, and in some cases had dog burials, indicating these animals had special value (Hayden 1997).

Northwest Coast Models for Hunter-Gatherer Complexity

While archaeological research and historical accounts indicate that transegalitarian communities existed along the Northwest coastal regions, there is still debate on how and why these communities developed unequal hierarchies (Ames 1994). Although these models are not currently used in southeastern archaeology, they do provide a context to understand how transegalitarian societies may have developed in the past in the region. Ames (1994) points out

that most models associate social and political complexity with the distribution of resources, especially the control of salmon. Salmon are anadromous and return to the streams of their birth to spawn and die (Ames 1994). While salmon may seem like a staple supply of food, they can be unpredictable on an annual basis and have to be processed for storage very quickly. As large resources, like salmon, became concentrated, social, and political hierarchies were needed to control fish procurement and consumption. In the Southeast, anadromous fish are a comparable resource, and in the interior, the most of trees like hickory, oak, and chestnut.

Brian Hayden (1997) developed the “Prosperity Model” to describe the process where hunter-gatherers introduced social complexity. Hayden (1997) believes that social complexity followed a trajectory based on unequal access to resources. In areas where food resources were plentiful but seasonal, certain families were more successful in the procurement and storage of these resources. Once families began to store food, they created economic inequalities between families, with food storage leading to the private ownership of resources and land. As economic inequalities grew, so did the use of prestige items to distinguish the differences in those social inequalities between families.

Brian Hayden (1997) developed three approaches that he uses to explain why individuals in an egalitarian community allow the creation of social inequality and political and social hierarchies.

- 1) People allow the development of hierarchies due to a crisis or resource shortage.
- 2) People are “lured” or convinced by individuals that promise that hierarchies and social inequality will result in wealth sharing; and
- 3) People are forced into inequalities through warfare, pressure, or other factors.

Hayden (1998) also links specific technological attributes with the development of hunter-gatherer social organization. Practical technology is technology needed to accomplish a certain

task, such as the tools needed to butcher a deer or to build a canoe, for example. Practical technology is influenced by access to raw materials. By contrast, prestige technology is technology that is created to solve socially- oriented problems like attention getting, attraction of mates or to display wealth or power. For Hayden (1998) the manufacture of these prestige items involved the organization of surplus labor, thus setting the groundwork for unequal social hierarchies.

Conclusion

The goal of Chapter III was to demonstrate that hunter-gatherers had the ability to form communities with unequal social hierarchies. All hunter-gatherer communities have a social structure and a social organization. Differences between egalitarian and transegalitarian hunter-gatherers is in form; egalitarian hunter-gatherers maintain an uncomplicated structure where leadership is at best related to ability and is situational in nature, meaning temporary.

Transegalitarian hunter-gatherers, in contrast, used social hierarchies to organize their communities. In an egalitarian community, hunter-gatherers use gender differences to organize hunting and the allocation of food. In contrast, transegalitarian hunter-gatherers develop specific social classes for hunting, animal ownership, and for resource distribution.

Transegalitarian communities are known to have existed in North America. As Europeans documented their interaction with these hunter-gatherers, they left a valuable resource to contextualize transegalitarian communities. Examples of transegalitarian communities included the Calusa in Florida and hunter-gatherers living along the Northwest coast. While these examples demonstrate the potential for hunter-gatherers to form complex social arrangements, they represent a snapshot in time. Middle and Late Archaic hunter-gatherers may have organized themselves differently from later groups like the Calusa. In the sections that follow, I use these

categories and approaches to examine how the Archaic societies I am examining were likely organized.

CHAPTER IV

THE HUMAN-ANIMAL RELATIONSHIP

Introduction

Russell (2012:677) defines the human-animal relationship as a “social zooarchaeology,” where archaeologists are beginning to recognize that the conceptualization and integration of animals into human communities was not random but was influenced by the historical patterns and social organizations of these communities (Hill 2013:120). Animals are important actors in the human-animal relationship. Animals can provide a source of calories (subsistence) and provide a ritualized and/or socialized object associated with religious and cosmological belief systems. (Russell 2016). Since changes in human-animal relationships can parallel larger subsistence changes and/or larger changes in religious/cosmological belief systems in a community, the human-animal relationships of Archaic hunter-gatherers can provide another approach to interpret their behaviors, lifeways, and social organizations.

Within the last 10 to 15 years, anthropologists and archaeologists have pivoted to a more comprehensive approach that goes beyond subsistence models to include how social contracts between animals and people shaped historic trajectories (Russell 2012). Chapter IV provides an overview of the human-animal relationship within social/political/economic contexts followed by a discussion of how hunter-gatherers created and modified human-animal relationships as a mode of stability, resistance, or as agents for change.

Social Zooarchaeology: Theoretical Foundations

As an anthropological concept, the human-animal relationship is viewed through three primary relationship categories: human/wild, human/domesticated, and market economy. These categories designate distinctive social organizations: hunter-gatherers, usually egalitarian hunter-

gatherers (human/wild); hunter-gatherers with animal ownership (human/domesticated); and market economy. Social zooarchaeology encompasses production and consumption within the social context that existed between humans and animals (Hill 2013:117, Russell 2012:4, Russell 2022).

The three primary human-animal relationships were influenced by social organization and have implications for understanding human-animal relationships among hunter-gatherer communities. These categories are not rigid and as societies become more complex, different social groups can practice different types of human-animal relationships. For example, hunter-gatherer communities can have relationships with wild animals while also having relationships with domesticated animals (Russell 2012).

Human-Animal Relationship Types

The human-animal relationship was not static but developed to meet the needs of different organizational modes among hunter-gatherers, farmers, urbanites, and market economies (Hill 2013:120). For this dissertation, which focuses on First Peoples in the American Southeast before and when they were beginning to domesticate wild resources, two broad categories are used to discuss how hunter-gatherers structured their human-animal relationships, 1) the human-wild animal relationship and the 2) human-domesticated animal relationship. These two human-animal relationships represent two different modes of sociality and can exist in the same hunter-gatherer social system (de Waal 1998:257) with each relationship type functioning in a specific social context. The human-wild animal relationship is grounded in zoology, where hunters develop knowledge of the life histories of important prey species, while the human-domestic animal relationship necessitates a behaviorist approach where humans create a social and

spiritual environment to cultivate and manage animal behavior within the social hierarchy (de Waal 1998:257).

The Human-Wild Animal Relationship

Hill (2013: 120) uses the term “relational ontology” to describe the human-wild animal relationship found in non-agricultural, hunter-gatherer societies. Relational ontology is “those systems in which animals and other “things” act as independent, sentient agents and are constituted socially, through performance interaction” (Hill 2013:120). The “performance interaction” was distinctive for each relationship type and specific to each human-animal relationship. Although the categorization of animals can vary from community to community, egalitarian hunter-gatherers observed ethnographically, typically categorize animals, at least for subsistence purposes, by meat and fat content, which correlated with animal size (Waguespack 2005). As a result, large fat bearing game animals were socialized and integrated into the egalitarian social structure.

Egalitarian hunter-gatherers socialize large game species through rituals and through cost signaling activities, the former blur the boundaries between nature and human culture through rituals of “performance interaction” (Hill 2013:120). This type of anthropomorphic thinking (Mithen and Boyer 1996:718) has deep antiquity and is believed to have formed around 40,000 years ago, during the Upper Paleolithic (Mithen and Boyer 1996:718). The ability to merge humans with wild animals results in what is referred to as a therianthrope, which allowed hunter-gatherers to socialize the behavior of wild animals through ritual performances (de Waal 1998, Mithen and Boyer 1996:718). A therianthrope is a mythical creature that exhibits human and animal characteristics and exists in both human and non-human realities (Skaanes 2015:209). Therianthropes are common in both prehistoric and modern hunter-gatherer societies.

Therianthropes introduce ambiguity into the social structure by breaking down the distinct categories that segregate the natural world from the cultural domain. The goal of a therianthrope is to decrease individual control (mainly successful hunters) over economically important prey species and to promote an ethos of sharing (Skaanes 2015:209).

Ritual Performance Human-Wild Animal Relationship

In egalitarian communities, gender specific human-animal relationships are manifested through hunting and through meat sharing. The male-animal relationship involves direct contact (hunting and killing) with high-calorie wild prey, while the female-animal relationship was oriented toward smaller animals. Meat sharing binds the individual gender-animal relationships together as part of a larger egalitarian ethos and prevents these different animal relationships from producing inequality (Kelly 2013).

Rituals are performed by shamans that imitate large game animals by dressing themselves in the skins and teeth of certain wild prey. The human-wild animal boundary could be fluid with animals moving through each reality following a set of social rules (Skaanes 2015:209).

Guenther (2017:4) regards African public hunting rituals as performances that solidified control over large prey animals by shamans and hunters. Knight (1998:130) points out that these rituals were high-cost, cost signaling activities, which were performed to control the distribution of fat and protein.

In modern egalitarian communities, wild animals are typically not part of these public performances and participants rely on humans in animal costumes to represent their presence in these rituals. The mimicking and dressing up like wild animals for public performance is referred to as a therianthrope. Pieter Jolly (2002:85) believes that therianthropes were used in San cosmology: “In some cases, they achieved this transformation and fusion with the help of masks

or the wearing of head and hide of a particular animal with which they had “possession” relationships.” San shamans were known to wear the skins and paws of jaguars, head caps made from bird skulls, and antelope skins (Jolly 2002:87).

Skaanes (2015:258), during her research with the Hadza documented the therianthrope among modern egalitarian hunter-gatherers. The Hadza practice a ritual dance called the *epeme* dance (*epeme* translates to “meat”) that occurred once every month following a successful hunt. The dance was held to blur the spiritual and physical form of the eland, an important source of protein and animal fat for the group. During ritual ceremonies, the eland therianthrope appeared as a dancer wearing an ostrich head dress with bells. The bells mimicked the sounds made by the eland walking through the grassland. An important distinction at the *epeme* dance is that wild animals are not allowed to be present at ritual performances and hunter-gatherers rely on the therianthrope to represent the ritualized animal. The ritualized animal cannot attend the *epeme* dance but can arrive as a carcass to be shared and consumed by the community (Skaanes 2015:258).

The Human-Wild Relationship Among Transegalitarian Hunter-Gatherers

The human-wild animal relationship practiced by transegalitarian hunter-gatherers is poorly understood, but like egalitarian hunter-gatherers, relationships with wild animals focused on hunting access and the distribution of meat and fat (Hayden 2001a). However, there are important differences between egalitarian and transegalitarian groups. Transegalitarian hunter-gatherers institutionalized hunting and food processing /distribution activities to certain social groups, restricting access to some groups. This is in contrast to egalitarian hunter-gatherers where sharing of food is the food distribution system used to distribute resources (Hayden 2001a).

The Human-Animal Domesticate Relationship

The human-domesticate animal relationship occurred with the domestication of animals. Russell (2022:14) defines domesticated animals as those animals that belong to individuals and that the ownership of these animals span decades if not longer, while wild animals are those animals that are not owned by individuals. Zeder (2012:162) defines animal domestication "... as a process in which humans deliberately and with forethought assume control over the domesticates' movement, feeding, protection, distribution, and above all--its breeding--directed at achieving specific clearly defined goals." Domesticated animals presented human populations with something that could be possessed, controlled, and was stable (Zeder 2012:63).

The domestication of sheep, goats, cattle, swine, and horses was followed by changes in social organizations and changes in human-animal relationships (Russell 2012). Russell (2012). Animal ownership, when associated with domestication, is not an evolutionary stage, but requires an ideological transformation and the creation of new conceptual frameworks about the human-animal relationship (Zeder 2012:165). Societies integrated animals into their social organization and documented these human-animal relationships through a myriad of sources. Hunter-gatherer societies recorded their relationships as cave and rock art, carved bone, antler, stone, and shell artwork, and through the deliberate burial of animals, while literate societies wrote detailed descriptions of the role of animals in their communities in many media, including through publications (Jolly 2002, Lonsdale 1979).

Western societies produced volumes describing how animals fit into their social orders. These sources offer a glimpse of the crucial role that the human-animal relationship had in human societies and a window into past socio-political organizations. The scholars in the Italian Renaissance and the Age of Enlightenment sum up Western thought on animals, which assumed

that humans were the center of the world's existence and had control over non-human species (Weitzenfeld and Joy 2014:5). One question that I will explore in this study is, did hunter-gatherers integrate domesticated animals into their communities in similar ways to Western societies?

Animals in some historical hierarchal societies were characterized by the production of different breeds. These breeds helped the expansion into economic and social niches. For example, the rocky and nutrient- poor landscape found in parts of mainland Greece necessitated smaller cattle breeds while larger cattle breeds were used on Greek islands that were better suited for herd economies (Lonsdale 1979). Modern western ideas about the role of animals have been influenced by large-scale animal domestication, usually found within hierarchical societies. In these societies, animals were viewed as commodities and assigned a value, all under the direct control of humans. These ideas permeated 19th-and 20th-century archaeology with conceptual models oriented toward subsistence, market value, and consumption. The processual archaeology of the 1970s narrowed the study of animals to primarily subsistence, using ethnography and taphonomy to construct ancient diets (Hill 2013:119).

Non-food animals can also be evidence for social organization. The introduction of domesticated cats into 5th-century Greece corresponded with increased trade relations between Egypt and Greece (Lazenby 1949:304). Cat adoption is quite complicated, with different social roles for the animals in different places, like Egypt where they were both worshipped and sacrificed, as well as treated as pets; in many areas their adoption was to protect grain supplies from mice and other pests. During the 5th century B.C., in Greece, cats were exotic and luxury pets but became common centuries later among the populace as Christians copied the cat ownership of Christian monks (Lazenby 1949:304). Dogs are believed to be the first domesticated animal, with initial

domestication occurring around 16,000 years ago, although the exact timing, geographical location, and ancestral wolf species continue to be debated by archaeologists (Perri et al. 2021). Some early genetic studies suggest that the process of domestication was in full swing as early as 100,000 years ago, although more recent genetic studies (Pang et al. 2009; Shannon et al. 2015) indicate a more recent date around 16,000 years ago. The early timing of dog domestication is evidence that hunter-gatherers were knowledgeable of the domestication process and the ability to manipulate the human-animal relationship well before the appearance of domesticated goats, cattle, horses, and sheep.

Ingold (1980 cited in Shanklin 1985:380), believes that animal domestication impacted hunter-gatherers within two spheres, an economic-subsistence sphere, and a social sphere. The economic-subsistence sphere included the production of animal products like fur, meat, and milk. Domesticated animals were part of the decision-making process as communities sought to achieve homeostasis and stability with environmental niches (Shanklin 1985:385). In herding societies where herd production and consumption are geared to family subsistence, animals tend to have more ritual importance than in herding communities producing for a market economy (Shanklin 1985:384). As we shall see, animal domestication likely supported ritual activities and ritual organization among Archaic populations of the Southeast.

Holmes et al. (2021) provide an example of how the domestication human relationship can change through time. They traced changes in how people perceived the human-cattle relationship in Medieval England as cattle production shifted from rural/family ownership to the rise of urban areas and mass beef production and consumption. The pre-10th century English social landscape was structured at the family subsistence level, where farming produced an individual, lifelong relationship between families and their individual cattle. The growth of urban centers by the

11th century, and the migration of non-food producing groups into new urban centers, required increased beef production to feed these cities. The new reality influenced the rural hinterland and severed the social ties between farmer and cow, as beef cattle were slaughtered quickly instead of the cows being kept throughout their natural life span. In contrast to a subsistence model, animals were domesticated for ritual purposes, as hunter-gatherers replaced wild animals in rituals with domesticated animals. These animals offered a supply of ritual offerings that were constantly available and ready for sacrifice at any time.

Russell (2016:26) points to the 6500 B.C, occupation at Çatalhöyük in Turkey as an example where cattle domestication was resisted some 600 years after neighboring regions had adopted this practice. The wild bull was at the center of Çatalhöyük cosmology. Russell (2016:27) believes that the dominant position of the wild bull in Central Anatolian cosmology was threatened by the appearance of domesticated cattle. According to Russell (2016:26), “Taking control of docile cattle owned by humans was apparently too threatening to the Central Anatolians relationship with wild cattle.” She states that even with the adoption of the full barnyard stock (sheep, goats, and cattle), domesticated animals were rarely incorporated into the ritual sphere in Central Anatolian communities.

Taboos, Meat Sharing, Hunting Rules, and Feasting for Egalitarian and Transegalitarian Hunter-Gatherers

Introduction

Human-animal relationships can be manifested through several different pathways of use that include food taboos, hunting rules, and feasting to implement their social agendas. As expected, different social organizations will produce different food taboos, different hunting rules, and different feasting types with different archaeological signatures.

Food Taboos

A taboo is defined as an activity that is considered by society as being improper or unacceptable (Fershtman et al. 2011: 141). Successful taboos restrict certain social practices and are subject to punishment if violated (Fershtman et al. 2011: 141). Taboos function to influence social interaction and are enforced through daily routines and through ceremony and ritual. Different food taboos are important in building individual/group cohesion in egalitarian communities and in the construction of social hierarchies in transegalitarian communities (Tsékénis 2017:135-138). Taboos run the gamut of social life including (but not limited to) restrictions in types animals owned or consumed (Spielman 1989, Tsékénis 2017). While societies practice many types of taboos, I focus on the role that food taboos played in the development of animal human relationships.

Food taboos partition individuals and groups into distinct social categories, separated from each other by access to certain types of food (Spielman 1989). Egalitarian hunter-gatherers enforce food taboos by what they may mistakenly think are protective measures like restricting fat and meat consumption to menstruating and pregnant women or protecting certain animal species from overhunting and extinction (Spielman 1989). Egalitarian hunter-gatherers are known to practice an immediate return economy, where food is immediately consumed and not stored (Woodburn 1982). The immediate return economy is just one approach to food consumption, a taboo against food hoarding or storage that egalitarian communities can use to maintain their social structure. The taboo against stored food (i.e., the taboo against a surplus) has community-wide implications. Since one of the culturally important food sources is protein and fat from large animals, the adoption of this taboo in egalitarian societies tends to be associated with large game (Hayden 2001a). Hierarchical societies use food taboos to define social rank through the

access to luxury or prestige foods, resulting in the creation of social hierarchies (Lambek 1992:249). Lobban (1994:72) states: “In general, taboos exist to control access to something that is otherwise desirable, such as specific sexual partners or foods.” This is often achieved by establishing symbolic, scientific parameters between the domains of sacred and profane as the idealists have noted (Fershtman et al. 2011). As communities establish hierarchies, foods become separated into status categories with certain foods available to specific segments in the community (Hayden 2003; van der Veen 2003:407). High status foods, i.e., luxury foods, are used by the elite to create and maintain social status. Luxury foods are a type of taboo and are available to only a certain part of a community while restricted from other segments of the same community (Hayden 2003).

Luxury foods are described by Appadurai (1986:38 cited in van der Veen 2003:407) as characterized by:

- a) restriction, either in price or by law, to elites.
- b) complexity of acquisition, which may or may not be a function of real scarcity.
- c) semiotic virtuosity, that is, the capacity to signal fairly complex social messages (as do peppers in cuisine, silk in dress, jewels in adornment and relics in worship).
- d) specialized knowledge as a prerequisite for their appropriate consumption, that is, regulation by fashion; and
- e) a high degree of linkage of their consumption to body, person, and personality.

Hayden (2003) explains that transegalitarian communities do not use luxury foods to increase the subsistence base but they are instead used to create social status. Since luxury foods are socially created, they are subject to change as social situations dictate. Originally developed as consumer theory by George Simmel (1896) and made popular in archaeology by Hayden (2003), the elite

consistently strive to minimize the costs of luxury items, thus making them cheaper and more accessible through time.

Van der Veen (2003:409) points out that egalitarian groups tend to convert everyday foods to luxury foods by increasing their quantity during feasting while hierarchical communities have luxury foods that are small in quantity, restricted in number, foreign in origin, and difficult to obtain (Van der Veen 2003:411). This disparity, as suggested by Riches (1984), is found in the different food distribution systems in each community type. Successful hunters in egalitarian communities gain prestige through the sharing of meat (the sharing of a luxury food item) not necessarily through the actual hunting of big game (Riches 1984:240).

Meat Distribution

Human communities arrange their meat distribution activities along socially constituted rules and pathways (Kelly 2013). Meat sharing is socially regulated, it follows certain rules with some members of the group receiving access to more fatty portions of the animal while other members, mainly women and children, receive the less fatty parts of the carcass (Speth 1990:150). Fat in large prey can be found in the liver, the tongue, and the metapodials and is highly prized and can be difficult to obtain (Speth 1990:165). In some cases, elderly individuals, children, and pregnant women are denied any access to meat (Speth 1990:166). Testart (1987) recognizes two types of hunter-gatherer meat sharing systems, System A and System B. In System A, the hunter has some influence in the distribution network of large game while in System B has none. Testart (1987) describes System A as the most common form of meat sharing while System B is usually only found in Australian Aboriginal communities, where elders, the gerontological rulers, control many aspects of life. Rules for meat distribution are only placed on the meat of large prey animals; the meat of smaller animals does not fall under the same rules. Hawkes et al. (1991)

demonstrated the social aspect and gender division of meat sharing in their study of how large and small game animals were hunted, consumed, and shared within the Hadza. Large game animals were shared with the group through an internalized system that was predictable. In contrast, the meat of small animals was not required to be shared and were typically hunted by Hadza women (Hawkes et al. 1991).

Hawkes et al. (1991) point out that individual male Hadza hunters could increase their daily caloric intake (and forego the sharing of meat) if they concentrated just on small animals instead of engaging in large animal kills. Small game was not part of the sanctioned meat sharing system and Hadza families were free to either consume small animals or share them with other families. If a Hadza woman chose to share small game, she could choose the recipients without fear of violating the social rules for sharing large game (Hawkes et al. 1991).

This division can influence the social organization of hunter-gatherers, something observed by Waguespack (2005:671). She reviewed ethnographic data on the Ache and found that once meat availability exceeded 50 percent of the diet, women concentrated more on non-subsistence tasks like leather working, burden carrying and house construction. When women do hunt or gather, they tended to collect low risk, high return items like easily captured small game or high value plant resources, like fruit. Meat sharing is common among hunter-gatherers that live in environments where wild food resources can be unpredictable (Lewis et al. 2014:1), although Anikpo (1984:33) observed food sharing among the Igbo villagers located in the Anambra state of Nigeria, Africa. Described as a “stateless society” the Igbo do not have institutionalized hierarchies but unlike other egalitarian groups, own domesticated animals. The Igbo are unique in that they live in villages but share the meat of their domesticated chickens, pigs, goats, and cattle. The Igbo use meat sharing to build and maintain social bonds. The cow was the most

common animal used in meat sharing ceremonies. The Igbo have five ceremonies that require the slaughter and sharing of a cow (Anikpo 1984:43). These ceremonies include:

- cow for the titled.
- cow for the merriment (man for wife).
- cow to glorify mother breast milk.
- cow for yam and.
- cow for funeral.

The cow for merriment ceremony was performed by a husband to honor his wife. It is important to note that the cow carcass is divided between people with all parts of the cow consumed; the non-meaty parts like the head and feet were still utilized and not wasted (Anikpo 1984:43).

Societies organized with more institutionalized hierarchal structures distribute meat within a different framework. Research on the Moundville site shows that carcass part distribution was tied to social status, with more highly ranked people receiving better quality portions. Jackson and Scott (2003:111) provide five qualities of Mississippian elite animal use: “high sample diversity; an abundance of prime cuts of meat; greater representation of rare taxa; low frequency of butchering debris; and finally, a higher proportions of birds.”

The distribution of animal parts (carcass parts) is also an important part of meat distribution and can promote hierarchy and can create social distance. Sykes (2014:356) argues that carcass parts are “meaty symbols” where power, prestige, and social standing are represented by who receives certain parts of the animal carcass. Sykes (2014:353) found that deer carcass distribution changed through time in Medieval England. During the Early Medieval Period, hunting was practiced at the household level and was not an important community practice. However, during the Middle to Late Medieval period, deer bones show up in elite, commoner, and in the religious

houses, although the carcass distribution is different for each social contexts: elite contexts have the deer heads and front limbs, religious houses have the forelimbs, with the upper and lower hindlimbs in the rural settlements (Sykes 2014).

By the Late Medieval period, hunting transitioned into an elite activity and the rural population were restricted from deer hunting. More importantly, hunting became exclusive instead of inclusive, and wild animal remains decrease at rural sites while increasing at elite sites and at the religious houses. At the same time, the feasting halls were becoming more exclusive, restricting participation from commoners (Sykes 2014).

Hunting Rules

Hunting can be defined as the killing of wild animals. While both men and women hunt in modern hunter-gatherer groups, large game is typically hunted by men while women tend to hunt small game (Parkington 2003:138). The sexual division in hunting is not well understood (A. Anderson et al. 2023). Traditional models account for large game hunting by males as a signaling process where success equates with increased access to females. The “signaling theory” or “show-off” model points to success in large game hunting as one method people, typically males, may employ to achieve prestige and to demonstrate their fitness as a mate (Kelly 2013). The killing of certain large prey animals is usually restricted to men, while women may more commonly fish and procure small animals through trapping (Kelly 2013). Among modern hunter-gatherers observed ethnographically, “hunting” is open to all males, and they begin hunting at an early age. Large prey animals are the focus of hunting and the human-animal relationship in egalitarian groups structures how large prey is killed, who can kill large prey, and who owns meat from large prey (Kelly 2013). While the reason for male-oriented big game hunting is not well understood, archaeologists now realize that changes in the intensity of male-

dominated hunting contributing to subsistence, and the availability and distribution of animal protein, can influence social structure. For example, Hildebrandt and McGuire (2002) believe that there was a shift in procurement strategies during the Middle Archaic period in California from a gender fluid collection strategy of everyone gathering low bulk, low costs resources to a gender specific strategy with male dominance in big game hunting circa 4000 to 3000 B.P. (Hildebrandt and McGuire 2002: 249). This trajectory began during the early Middle Archaic (known as the California Milling Stone Horizon) where men, women, and children procured low bulk resources while suppressing big game hunting. Circa 3000 to 4000 B.P., male dominated big game hunting appears, and hunter-gatherer groups developed a more gender-based work structure (Hildebrandt and McGuire 2002: 249).

Women in hunter-gatherer societies are involved in human-animal relationships. One example is found in Arctic cultures. In the Arctic, there seems to be a much greater role for women in the human-animal relationship than among most egalitarian hunter-gatherer groups where hunting is less dominant (LeMoine 2003:132). Women were responsible for how the animal was treated once it was brought back to the camp. Women had taboos on which portion of the animal they could consume. During the Late Dorset period, women were believed to be the link between the hunters and the hunted prey (LeMoine 2003:132). The Inuit have a very visible division of labor, the men hunt while the women manage the household (LeMoine 2003:130). However, the role of men and women are complementary: women make the hunting clothes and redistribute the meat (LeMoine 2003:130). Of course, how prominent was women's role in hunting remains highly debatable, and far more research must be done before adopting existing stereotypes uncritically (Anderson et al. 2023). Once and if egalitarian hunter-gatherer groups structured their big game hunting along gender lines, males in such groups developed unique human-animal relationships

with big game, and women might be excluded from these relationships and associated rituals (Skaanes 2015). Egalitarian hunter-gatherers create an impression (through ritual) that important prey species are liminal, neither human nor animal. In other words, humans and animals are part of the same species, a shared human/non-human reality (Guenther 1975:165). In this situation, the community believes that the world is fluid, a place where animals easily transform from non-human to human forms (Guenther 1975:165). These human-non-human ontologies purposely blur, or superimpose, the natural and the social world through the use of therianthropes (Skaanes 2015).

How transegalitarian hunter-gatherers structured their rules for animal procurement is poorly understood in the Mid-south. Unlike egalitarian hunter-gatherers, transegalitarian hunter-gatherers are thought to have used animal protein in feasting events as well as in everyday subsistence (Hayden 2001a, 2001b). Hunter-gatherers on the Northwest coast were known to own and control large salmon runs, excluding other individuals from these fish resources (Hayden 2001a, 2001b). The ownership of large amounts of salmon meat may have been one factor in the creation of social inequality in the Northwest coast. In these societies, animals were not shared through a system of sharing but through the creation of debt (Hayden 2001a).

Transegalitarian hunter-gatherers also differed in their ritual activities when compared to egalitarian hunter-gatherers. Therianthropes are no longer used, or used sparingly in public rituals, replaced with the sacrifice of live animals. For transegalitarian hunters, they do not view themselves as an active partner in these ceremonies; there is a shift away from the universal ownership of important prey and a focus on the individual control over certain resources. The shift to the live sacrifice of animals resulted in the need for sacrificial animals. As discussed

earlier, the need for a stable supply of ritual animals may have driven the use of domesticated animals in some transegalitarian communities (Hayden 1997).

Feasting Events

Feasting is a diverse category where “... feasts are events essentially constituted by the communal consumption of food and or drink” (Dietler and Hayden 2001:3) while Dietler 2001:67) states that “feasts provide an arena for the highly condensed symbolic representation and the active manipulation of social relations.” Feasting is believed to be an activity found in transegalitarian societies, and not a practice found in egalitarian hunter-gatherers (Hayden 2001b:42). The reason large scale feasting may be uncommon among egalitarian hunter-gatherers may be because these groups do not keep surplus food needed for such feasting, and the absence of specialized technology for food procurement. Additionally, sharing was already a way to distribute food, and feasting would not be needed to distribute food (Hayden 2001b:42). More importantly, feasting is ritual by design, used to develop social bonds, social change, and a common social belief system (Dietler and Hayden 2001:3). Feasting can be used to build relationships since food is destroyed (i.e., consumed) and cannot be recycled, but can only be repaid by obtaining the same type of foodstuffs (Dietler and Hayden 2001).

Feasting can be variable, but Hayden (2001b:25–26) believes that feasts serve as “social technology” that have both form and symbolic content. Feasting is the redistribution of surplus to achieve a social outcome that includes the mobilization of labor, group cooperation, political and social alliances, the acquisition of spouses, the production of profit, increased surplus from the community, and payment (Hayden 2001b:30).

Feasting usually involves some type of display and requires abundance. In foraging societies, the feasting may be planned around the ability to get large amounts of food. Meaning is

demonstrated by the wearing of certain items and costumes that would focus the attention on certain individuals (Wiessner 2001:116–118). Sacred feasting resulted in a large amount of food that was procured by everyone and shared freely at the feasting location (Wiessner 2001:116–118).

Conclusion

Hunter-gatherer communities form social relationships with animals. These human-animal relationships are influenced by the distinct social structures found in differing types of communities. Since egalitarian and transegalitarian communities practiced different social organizations, each community will form diverse types of human-animal relationships. For example, several attributes that form the basis for human-animal relationships include:

- 1) Large game animals are commonly hunted by men, while small animals are commonly hunted by women, with some overlap
- 2) Animal meat of large game is shared with everyone.
- 3) If women kill small game they do not have to share or can share with individuals of their choosing.
- 4) Animal ownership is discouraged but modern examples show how domesticated animals can change egalitarian social structures.
- 5) Therianthropes are typically used in rituals.
- 6) Food taboos are geared toward helping maintain individual health and group cohesion.

Like egalitarian hunter-gatherers, transegalitarian hunter-gatherers structure their human-animal relationships to promote and maintain their ideology, social organization, and inequality. Several differences emerge:

- 1) Animals are owned by individuals or groups; owned animals are usually domesticated animals.
- 2) Animal ownership can be one pathway to develop inequality.
- 3) Changes in rituals, animals become participants in rituals and ceremonies.
- 4) Food taboos emerge to create hierarchies.
- 5) Some animals (especially dogs) shift from liminal states to defined categories.
- 6) Animals form part of the cosmology but are depicted as separate from humans.
- 7) The introduction of a domesticated animal can change the social organization of the group.

These ideas will be evaluated in the chapters that follow with the evidence from early sites in the Midsouth.

CHAPTER V

ANIMALS AS EVIDENCE FOR SOCIAL ORGANIZATION

Introduction

Human-wild animal and human-domesticated animal relationships can be inferred from evidence found at shell mounds in the Archaic Mid-South. Each human-animal relationship type provides a different insight into the social organization of Archaic hunter-gatherers. Hunter-gatherers structured their relationships with wild animals (the human-wild animal relationship) to support their food distribution system. The remains of white-tailed deer, bear, and small mammals arrived at shell mound sites through different avenues, probably through an engendered food distribution system.

In contrast, the human-domesticated animal relationship found in Mid-south shell mound sites focused on one animal: the domesticated dog. The general lack of dog bones at Middle Archaic sites (in the Southeast and in the Mid-south) (Worthington 2008) is suggestive that dogs were intentionally excluded as a primary food source. This meant that dogs most likely arrived at shell mound sites as ritualized or socialized objects and not as distribution within a subsistence economy. The appearance of domesticated dogs at archaeological sites can be multifaceted (as discussed later in this dissertation), their appearance can indicate a shift in social organization or a shift in religious ideology.

Additionally, the taboo on dog consumption placed dogs within a different social context when compared to that of wild animals. Recht (2023) observed that relationships with animals were one path to support hierarchies of inequality. Recht (2023:163) points out that as inequality takes hold, violence increases against animals, usually in the form of sacrifice or ritual killing. If animal status was fluid and altered to support social inequality in emergent state level societies,

this process most likely occurred in hunter-gatherer communities that developed social hierarchies. The domesticated dog is the only known domesticate in the Mid-South and represents one human-animal relationship to gauge social complexity.

Three types of relationships between hunter-gatherers and dogs are discussed in Chapter V: animal taming, animal crossbreeds, and animal domestication. These different human-animal relationship types represent a spectrum of possible choices that were available to Archaic hunter-gatherers. The choice to utilize tame animals, to utilize animal crossbreeds, or to have domesticated animals, was a product of the social and economic needs of hunter-gatherer communities. The presence of either of these relationship types is evidence for specific hunter-gatherer social arrangements during the Archaic period.

Hunter-Gatherer Choices With Canid Species: Animal Taming, Animal Crossbreeds, and Animal Domestication

Several conceptual issues in North American archaeology have prevented a holistic understanding of the social relationships between dogs and Archaic hunter-gatherers. First, American archaeologists have created a binary approach that categorizes canid bones as either wild (wolf, fox etc.) or as domesticated dog. Some canid bones, especially those bones found at Paleo-Indian kill sites and Archaic sites, do not always fit neatly into either category. These canid bones were probably tamed canids or crossbreeds, as discussed later in this chapter. Secondly, the appearance of the classic “domesticated dog” is described in broad categories that include terms like pets, companions, hunting aids, ritual sacrifices, and laborers (Warren 2000, Worthington 2008). These broad terms allow very little discussion at the micro level, where the human-animal relationship provides the greatest amount of information.

Thirdly, American archaeologists compartmentalize Archaic human-animal relationships with little focus on how these relationships transitioned through time. While archaeologists have recognized social changes through time from the Paleo-Indian to Late Archaic based on shifts in projectile point technology, environment, and settlement patterns (Sassaman 2010), there is very little attention devoted to how human-animals relationships changed through time.

To understand the human agency that shaped Archaic human-animal relationships, the range of available decisions for hunter-gatherers needs to be explored. Animal taming, animal crossbreeding, and animal domestication were not opposing processes, but were different practices that hunter-gatherers used when needed, to promote, maintain, or restructure community customs. These choices were influenced by the specific social context that dictated taming, crossbreeding, or domestication. The certain types of human-animal relationships practiced at Archaic shell mounds and caves did not occur in a social vacuum but developed within a cultural setting that mirrored the larger cultural system.

Tamed animals, crossbred animals, and domesticated animals were afforded different access to human spaces. These differences in the animal/human space has implications for social structures and social histories.

Animal Taming and Animal Crossbreeds

Taming is the capture and socialization of an individual wild animal where humans modify individual animal behavior but do not modify the genetic composition of a species (Zuppi 2022). Taming is an intentional choice and not a precursor or a first step to animal domestication. The social context for animal taming varies through time and culture but was practiced in both hunter-gatherer communities and agriculturally based societies. For this research, animal taming is conceptualized as two forms: a tamed animal and a tamed pet. Tamed animals may be

common in egalitarian hunter-gatherer communities while pets are common in more hierarchal communities (see Bräuer and Orga 2023, Zuppi 2022).

A tamed animal is captured from the wild and cared for from birth to adolescence but not kept as an adult. Once the animal reaches adulthood, the animal is usually eaten or released back into the wild. A tamed pet is an animal that is captured from the wild and kept for the entire life of the animal. Tamed pets can include any animal but usually includes animals that maintain a small size like certain birds and fish species (Zuppi 2022). Because tamed animals are released back into the wild or consumed as food, their presence in the archaeological record can be difficult to identify and separate from domesticated animals.

The Indigenous tribes living in the modern region of Amazonia offer an example of non-Western use of tamed animals. The Madiha tribe, living in western Amazonia, frequently give tame monkeys, turtles, and birds to young children as a practice to introduce social responsibility (Zuppi 2022). These pets are cared for until they reach adulthood. Once they become adults, the animals are released back into the wild or killed and eaten by villagers (Zuppi 2022).

The key to understanding the choice to keep a tamed animal instead of a domesticated animal may relate to the different skill sets. Bräuer and Orga (2023:76) state that wild wolves outperform domesticated dogs in taking risk and in “causal reasoning.” These skills for more wolf-like behavior may have resulted in the taming of wolves in order to retain these behaviors. In North America, the dire wolf (*Canis dirus*), and the gray wolf (*Canis lupus*) were the most socially oriented of the Pleistocene predators (Van Valkenburgh et al. 2016:864), making them the best recipients for the formation of human-animal relationships. Although the evidence is modest, the recovery of canid bones and gnawing marks point to the use of tamed canids (probably wolves) by Paleo-Indian and Early Archaic North American hunter-gatherers.

Pleistocene wolf/dogs would have maintained their large body sizes and the physical ability to hunt large animals, especially large Pleistocene megafauna. Haynes (1983) provides additional insights to the use of dogs (or possibility tamed canids) by Paleo-Indians. Haynes (1983) developed a model to distinguish if wild canids or tamed canids were present at Paleo-Indian kill sites in the western United States. His model compared differences in the availability of buffalo meat at kill sites for wild canids and for tamed canids. Wild wolves fed at kill sites without human intervention, enjoying access to the entire kill site. In contrast, humans would have restricted the access for tamed canids to eat at kill sites, limiting the time and opportunity to feed on any dead animals. Haynes (1983) believes that wild wolves left gnawing marks on multiple skeletons across the kill site, while tamed wolves left gnawing marks on fewer skeletons resulting in fewer gnawing mark across the kill site (Haynes 1983; cited in Fisher 1984:349). Fisher (1984) applied Haynes's model to Paleo-Indian sites located in southern Michigan. At five sites that showed human produced cut marks, two of the sites exhibited a restricted gnawing pattern, suggesting tamed canids were present with humans at these kill sites.

According to Fisher (1984:349),

“The diffuse pattern of gnawing is to be expected from wild carnivores with unrestricted access to the carcass although the intensity of gnawing may vary greatly. On the other hand, intense gnawing on one or a few bones may be interpreted speculatively as the result of some limitation of access to the carcass.”

The use of evolutionary models that use smaller snouts, smaller skulls, and smaller bodies (Germonpré et al. 2023:64) to distinguish domesticated dogs obscures the role that tamed canids had in hunter-gatherer societies. Canid bones that do not correspond to the expected decreases in size reduction are typically documented at archaeological sites as wild animals or something “in

between” (Shipman 2015). Shipman (2015) interprets the wolf-like bones recovered from European Paleolithic sites as evidence that hunter-gatherers used tamed wolves, or wolf/dogs, to aid with the hunting of large megafauna. These wolf /dogs were used to hunt large megafauna and also used to protect kill sites from wild wolves and other scavengers. Shipman (2015) believes that these large wolf/dogs offered Paleolithic hunter-gatherers higher meat yields when used in hunting when compared to hunter-gatherers that did not employ wolf/dogs.

Tamed canids were also reported from the contact period in the Caribbean and South America and exhibit the best evidence for tamed animals in the Americas. Foxes are known to have accompanied human burials throughout South America as well as been used as tamed animals (Stahl 2013:523). South America has a rich and diverse community of native fox species available for taming that includes the gray fox (*Lycalopex culpaeus*), the Azara fox (*L. griseus*) and the Sechuran fox (*L. sec.*) (Stahl 2013:522).

Stahl (2013) reviewed the writings of 15th and 16th century Spanish clergymen and reinterpreted their descriptions of the native non-barking dogs observed in the Caribbean and throughout South America. She believes that these canids were not domesticated dogs, but most likely tamed crab eating foxes that originated in Columbia or Venezuela. The Spanish observed small barkless dogs in Cuba and reported that the Indigenous communities ate them (Stahl 2013:158). Stahl (2013:158) reports that Andres Bernaldez, during the 16th century, observed that indigenous peoples tamed foxes which they readily consumed.

Animal Crossbreeds

The term animal crossbreed is used in this research instead of the term animal hybridization. An animal crossbreed is a cultural process that is initiated by individuals for a specific outcome while animal hybridization can occur naturally without human intervention. Animal crossbreeds

are developed to meet a certain goal (Allen 1920: 434). For example, modern animal crossbreeds have been developed to improve meat production. The beefalo, developed in the 1970s, is a crossbreed between a buffalo and cow with the animal containing 3/8th buffalo and 5/8th cow. The beefalo can withstand extreme changes in temperature, can subsist off grazing on grasses (eliminating the need for grain), and are very submissive and produces a meat product low in cholesterol, low in fat, and high in protein content (www.thecattlesite.com/breeds/beef/97/beefalo).

Dog Crossbreeds

The cross breeding of dogs with wolves and coyotes was documented throughout North America during the 18th and 19th centuries. In the Western Plains, tribes used wolf/dog crossbreeds to aid in the hunting of buffalo, while large black wolf-like dogs were used to manage Cherokee horse herds (Allen 1920:461). Cross breeding of dogs and wolves was observed in Eskimo communities where female dogs were left in the woods to mate with wolves (Allen 1920: 434). Early Archaic dog burials from the American Midwest is indicative that Early Archaic dogs were products of interbreeding between domesticated dogs, wolves, and coyotes. Seminal findings by Perri et al. (2019) are suggestive that cross breeding with coyotes and wolves shaped the genotypic and phenotypic make up of Early Archaic dogs at sites in Illinois. Perri et al. (2019:80) analyzed three Archaic dog burials recovered from Early Archaic contexts at the archaeological sites of Koster and Stillwell II. Their approach incorporated radiocarbon dating, DNA testing (on the two Koster dog burials), and a metric analysis on all three dogs. The three dogs lived and died within the same general time: one Koster dog was dated to 10,110–9,690 cal. yr. B.P. the other Koster dog dated to 10,130–9700 cal. yr. B.P. while the Stillwell I dog was dated to 10,190–9630 cal. yr. B.P. (Perri et al. 2019: 78).

Although more research is needed, their analysis of the dog skeletons from the Koster Site (two dog skeletons) and from the Stilwell II site (one dog skeleton) suggests that Early Archaic dogs may have been larger than the Middle Archaic shell mound dogs, with a high degree of cross breeding with coyotes or with wolves (Perri et al. 2019).

Wolf/dog hybrids are not representative of any time period. Wolf/dog hybrids are reported from archaeological sites that date to the Late Prehistoric and Protohistoric communities that lived throughout the American Great Plains (Henderson 1994, Walker 1980). Walker (1980:154) identified canid bones, found at the Vore Bison Jump located in Crook County, Wyoming (circa 230 B.P.), as wolf/dog hybrids (Walker 1980:154). The wolf/dog hybrid skulls were large and similar to wolves; however, the teeth were heavily worn with broken upper and lower canines (Walker 1980:158). Walker (1980:158) believed that the heavily worn teeth were uncommon in wild wolves (due to shorter lifespans) and that the broken canines were evidence that people had removed the ability of the wolf/dog hybrids to bite.

Henderson (1994:147), using historical sources, places the Missouri River as a boundary for dog types owned by the native tribes living on the Plains. The wolf/dog hybrid was present in the north central plains, north of the Missouri River, while the dog/coyote hybrid was more common south of the Missouri River. The wolf/dog hybrid was documented in the Hidatsa, Cree, Crow, and Arikara tribes (Allen 1920: 450, Henderson 1994:146). South of the Missouri River, dogs were described as coyote-like animals “having shorter hair and being less hairy” than wolves (Henderson 1994:147).

Coyote-dog mixes were recorded in Texas while travelers described the canids owned by the Umatillas, Bannocks, Shoshones, Crows, Apaches, Crows, Arapahos, and Sioux Indians as related to coyotes (Allen 1920:450). Allen (1920:455) summarizes historical sources that

documented large wolf-like dogs (i.e., the “Sioux Dog) kept by Plains Indians and used primarily as transport animals. Sioux dogs were also called “Buffalo Wolves” (Allen 1920:455). The wolf/dog hybrids were bred as pack animals with the ability carry loads weighing 70 to 100 pounds. These wolf/dog hybrids could move their loads on average 30 miles a day (Henderson 1994:150). Wolf/dog hybrids, due to their larger size, could also have acted as protection against stampeding buffalo herds (Gunnerson 1972:3). Gunnerson (1972:6) states that the Vaquero Apache used dog trains to transport buffalo meat using several hundred dogs.

Animal Domestication

Dogs were the only domesticated animals known in the Middle Archaic shell mound culture (Webb 1974). Domesticated animals form relationships where they are property (Ingold 1986:5, Nadasdy 2007:98). The outcome is frequent, if not daily, contact with humans throughout their lifespan (Oma 2010:176). Domesticated animals and humans form partnerships that create and maintain social realities through an intricate set of behaviors expressed through social, environmental, and historical structures (Mullin 1999:202; Shaw 2013:8). Domestication involved a new social contract, one that socialized the behaviors of each human and animal participant (Russell 2012).

Zeder (2012:165) states:

...the most significant and distinctive impacts of domestication on humans is cultural. The act of tending plants and animals whose productive activity can be controlled, has played a major role in reshaping human societies. Notions of ownership and access to ownership are transformed with the shift from free living to plant and animal and modes of production are altered.

Crabtree (1993:202–203) points out that archaeologists use two basic, but interdependent, approaches to investigate animal domestication; osteological and cultural. Osteological approaches are “animal-centric” and seek to measure the transformation from wild to domesticate through changes in animal skeletons. The goal is to discover the final product of domestication; a new genotype and phenotype that is different from its wild cousins (Price 1984:3). Measurements taken on animal bones is the foundation for the osteological approach. Research has identified a trend that points to a reduction in overall animal size during the process of domestication (Price 1984:4). The changes in skeletal size in domesticated dogs is discussed later in this dissertation.

In contrast to the use of skeletal data, domesticated dogs shaped the structure of human communities through their social connectivity with humans (Spikins 2022). Dogs provided specialized behaviors that included hunting, guarding, companionship, as well as a food source (Pearson 2013:132, Spikins 2022:298). Dogs can also be barometers for acceptance or resistance to cultural change (Kercsmar 2016:531). For example, in Pawnee culture, women had control over the house and household goods. Although the horse replaced large dogs as beast of burden on the Great Plains, Pawnee women persisted in using small dogs for transport as a continued expression of their engendered role over the household (Kercsmar 2016:531).

Another example where changing attitudes towards dogs mirrored social changes can be found in the Southern Levant, at the 1st Millennium Before the Common Era (B.C.E.) occupation at the Askelon site in southern Israel (Dixon 2018). Around the middle of the 1st Millennium B.C.E., there was a shift in the mortuary treatment of dogs, as dogs appeared in small, simple grave pits. Dixon (2018:20) points to a natural death curve for these dog burials, indicating that dogs lived natural lives and were only buried when they died of natural causes (Dixon 2018).

Dogs were buried in shallow pits similar to the grave pits afforded to socially and economically low status humans. For Dixon (2018), the new practice of dog burial coincided with changes in the human attitudes toward dogs. Dixon (2018) speculates that as the urban nature of Ashkelon expanded, dogs became important as consumers of garbage and waste, ridding settlements of this unsanitary material. Additionally, dogs may also have served as sentinels that protected communities from growing outside threats during this period. The shift to dog burial points to dogs entering the human social sphere at Ashkelon and the population gave them burials as if they occupied a position on the social hierarchy (Dixon 2018:36).

Social Space and Animals

Bourdieu (1989:16) defines the construction of human social space as the “system of relations” or a “space of relationships,” while Richer (2015:349) expanded the idea to include social behaviors that display social differences. Social spaces segregate access to symbols and to physical spaces, allowing access to certain groups or individuals. The result is that social space promotes both exclusionary and inclusive policies (Bourdieu 1989:21). One attribute with social space is that some individuals are enshrined with symbolic capital and given official designations that correspond with certain social spaces (Bourdieu 1989). For Richer (2015:352), socially created spaces are used to manipulate material and symbolic resources toward building community consensus on the validity of the social order. Social spaces also serve as platforms where human agency is employed to initiate and solidify social change and new cultural norms. The result is that social spaces can be used to identify and investigate periods of stability and periods of social change (Gron 1991).

The use of animals in public/social spaces is not well understood for the Archaic period, but Archaic hunter-gatherers manipulated the natural world into culturally structured social

landscapes and social spaces (Lightfoot et al. 2013). The creation of Middle and Late Archaic social spaces is apparent in earthen mounds and mound centers in the Lower Mississippi Valley, shell mounds and cave sites in the Tennessee River Valley and shell rings and shell heaps in Florida (Bissett 2014, Gibson 1994, Russo 2004, Sherwood et al. 1994). The addition of animal burials to social spaces is a geographical phenomenon, with animal burials present at shell mounds in the Tennessee River Valley but absent in the Lower Mississippi Valley and mostly absent in Middle Archaic shell mounds along the Florida and Georgia coasts (Sassaman and Randall 2012, Thompson 2007). Another regional difference is the use of feasting in some places and the use of animal burials in other areas (see Randall 2011).

Research at shell ring and shell heaps in Florida indicate that feasting was the primary ceremony practiced in social spaces instead of performance ceremonies that involved the sacrifice and burial of animals (Randall 2011). Analysis of subsistence patterns for Middle Archaic mound sites in the Lower Mississippi Valley are difficult to identify, but like the shell rings and mounds in Florida, animal burial has yet to be identified (Worthington 2008). Preservation should not be an issue that explains the geographical patterning as the Florida sites are composed of shell (shell preserves animal bones) and the Lower Mississippi Valley sites have produced a large volume of preserved animal bone (Jackson and Scott 2001). For example, the Lower Mississippi Valley sites of Conly and Watson Brake produced 8143 bone fragments and 12,927 animal bone fragments, respectively (Jackson and Scott 2001). These high counts for animal bones suggest that large numbers of animal burials would have also been identified at these sites.

Claassen (2014:200) has tabulated that approximately 460 Archaic dog burials have been identified covering an area that covers the Mid-South, Southeast, and lower Midwest with 150 of those dog burials from sites associated with the Tennessee River Valley. Dogs appear as burials

during the Early Archaic period, although there seems to be a shift toward dog burial as a common practice during the Middle Archaic period (Claassen 2014:198). The earliest Archaic dog burial(s) excavated in the Tennessee River Valley were found at the Big Sandy, Eva, and Dust Cave sites (Lewis and Lewis 1961, Walker 1998). Claassen (2014:198–201) uses a ceremonial/ritual context to interpret Archaic dog burials. For Claassen (2014:198–201), dog burials represent a practice of sacrificial rites that promoted both social and cosmological well-being for the community. These dog sacrifice rites may have served to “rebalance” the community once a community experienced turmoil (Claassen 2014:198–201).

Recht (2024) suggests that animal sacrifice is a form of public violence that occurs within hierarchical communities. Animal sacrifice, either for burial or for consumption, is a performance that exhibits the ability of some individuals/groups to use violent, public performances to support unequal power relations. Bertasius (2014:65) interpreted horse burials at 8th–12th century sites in central Lithuania as public performances that reinforced the horse-warrior culture of the region. Horses were led to grave shafts and killed, allowing the audience to see and hear the bloody, horrific, event of horse deaths. These events created both mental and physical mnemonic devices that used public spaces to enforce hierarchies of inequality.

Social Space and Domesticated Animals

An often overlooked tradition of hunter-gatherers is their ability to manipulate spaces to build wealth and social status (Kelly 2013). The hunter-gatherer Chumash Indians, who lived in southern California, used shell mounds as “socially constructed places” for feasting, ceremonial events, and for funerals (Gamble 2017:427). Indigenous tribes living in the Canadian Northwest built new clam-mussel beds in efforts to multiply clam-mussel habitats and increase shellfish production. These clam-mussel beds were constructed by building rock walls and moving clams

and mussels to these new locations (Lepofsky et al. 2015:242). Families improved their social status and wealth through the socialization of beach areas that now were brought into the social and economic realm of humans (Lepofsky et al. 2015:242). The domestication of an animal is the ability for humans to have control over an animal's "space" (Recht 2024:178). Domestication requires new psychological constructs and new physical spaces to accommodate both humans and animals (Russell 2012). This is different from wild animals where humans and animals live in the same environments but not in close proximity to each other (Oma 2010:176). Animals were used to construct, maintain, and restructure social spaces (Oma 2010). Animal domestication, in Old World contexts, created new social spaces that organized people and spaces along secular and ritual categories that included animal possession, care, slaughter, dismemberment, distribution, eating, and discard (Norton 2024:45).

Domesticated animals have been used to reconstruct new social landscapes as a process of conquest and displacement (Norton 2024). Although European domesticates, like the horse and dog, gave the Spanish a military advantage, it was the establishment of the European pastoral/livestock economy that ultimately reshaped the social, economic, and political structures of Native communities in the Caribbean and throughout the Americas (Norton 2024:100). The European pastoral/livestock economy created what Norton (2024:77) terms, a "mode of interaction" between Europeans and Indigenous groups that incorporated colonial practices of land dispossession, slavery, and ecological modification.

This "mode of interaction" created an unequal hierarchical system supported through the establishment of new social spaces like ranches, where indigenous enslaved individuals worked to transform native landscape to support cattle, pig, and sheep herds. Norton (2024:102) recounts that once European cattle and sheep damaged native Indian property, Spanish ranches would

claim the land as a *baldios*, land that could be used as a common area for grazing. Thus, free roaming cattle were agents that allowed Spanish ranchers to constantly claim more land and as the process to redesign the landscape within a European system (Norton 2024). Reitz (1992) documents how the Spanish used domesticated animals to recreate European landscapes in the colonial settlements of Hispaniola, Cuba, and Spanish Florida. The successful establishment of pastures in savannah-like Hispaniola created a context for successful cattle and pig husbandry but not a successful context for large scale sheep husbandry. Hispaniola flourished economically, exporting cattle and swine products, while sheep, based on their scarcity, became a food of the elites. The Spanish, beyond their settlement at Hispaniola, failed to replicate the environmental and social framework for cattle, swine, and sheep husbandry at Nueva Cadiz in Spanish Florida, resulting in economic failure and the eventual abandonment of the community.

Williams (1995:245) provides another example of the intricate role that European domesticated animals played in the restructuring of traditional Native American landscapes. The Dutch introduced domesticates (dogs, swine, cattle, and horses) in the Hudson Valley in 1629. Prior to the arrival of the Dutch, the native landscape was constructed for maize production and for the hunting of wild game. Cleared fields not only produced food, but Native American communities used these fields to attract wildlife such as white-tailed deer. Dutch domesticates reconstituted the landscape; pigs and cattle destroyed maize fields and depleted food for wild animal populations (Williams 1995).

The shifts in landscape utilization and animal use provide an insight into how different cultures viewed animals. At first, Native Americans in the Hudson Valley refused to consume domesticated animals, but as food resources dwindled, they started to consume cattle as a mode of survival (Williams 1995).

Oma (2010: 182) points to the construction of the type 2 Scandinavian long house during the Bronze Age as evidence for a new psychological construct that expanded the “living space” to include domesticated cattle and goats. Along with the expanded house form, new artifacts, like milk strainers, ushered in a new human-animal relationship that promoted milk production. Because milking requires a stress-free setting, the type 2 long house, with its partition for animals, initiated a social space where animals became “embedded” in the social fabric of the family (Oma 2010:185).

Terbish (2015) offers an example of short-term changes in social space for domesticated dogs that mirrored the wider changes in Mongolian society that included the arrival of a communist government. Traditionally, domesticated dogs occupied a true liminal space. Dogs were considered to have a spiritual role as creator but at the same time were deemed to be polluted and dangerous. Dogs occupied a physical space outside of the home, living on the periphery of the family. However, the space occupied by dogs changed with the arrival of the communists. The communists outlawed traditional beliefs and dogs were removed from their spiritual position in Mongolian society.

However, small pet dogs and work dogs were promoted by the government with pet dogs now living in houses while stray, outside dogs were hunted and killed. Following the decline of the Soviet Union and the return of non-communists, dogs were reinterpreted within context of national Mongolian pride with the Mongolian dog championed as a symbol of that pride. Mixed dogs were considered to be inferior as were individuals of mixed ancestry and considered to be less desirable (Terbish 2015).

Social Distance and Animal Carcass Part Distribution

Once an animal is killed, the distribution of animal parts (carcass parts) to individuals or to social groups is patterned by sociocultural rules. Archaeologists use carcass part distribution as one line of evidence to determine the presence of hierarchies of inequality. The separation of killing and butchering animals is common in industrialized societies where animal products arrive to consumers in meat packages ready for consumption. Mullin (1999:210), speaking on food consumption in industrialized societies, states that “people eat “meat” not “animals.”

Reed (2014) draws attention to the differences between prehistoric animal sacrifice and animal slaughterhouses in 19th and 20th century Europe and America. He points out that:

Animals, of course, are still raised and slain for meat— now, perhaps, in a spatial remove from the church and the university, so too has social stratification enabled the isolation of intellectual, religious, and political elites from the tasks involved in producing the meat that we now have the option to eat, or not eat, at times of our choosing (Reed 2014:112).

In other words, elite classes and individuals prefer social distance between the slaughtering of animals and the delivery of animal meat in a consumable form (Reed 2014:112). This attitude toward meat allowed for the creation of binary relationships that included wild/civilized, noble/peasant, and human/animal (Reed 2014:120).

The separation (or social distancing) of individuals between the killing, butchering, and consumption of animals was practiced in precontact America (Jackson and Scott 2003). Social distances in food procurement and consumption probably varied through the Archaic, Woodland, and Mississippian periods. While carcass part distribution at Archaic sites is not well understood,

research at Mississippian period sites can provide a reference that defines several key attributes that can be applied to Archaic shell mound sites (Jackson and Scott 2003).

Models that describe hunter-gatherer carcass transport and distribution are formulated from modern egalitarian Alaskan and African hunter-gatherers within the framework of optimal foraging theories (e.g., Binford 1978). These models stress the cost benefit of meat transport. The distribution of carcass parts in an unequal social hierarchy is known from Mississippian societies in the Southeast. The unequal social hierarchies found in southeastern chiefdom societies were supported by the control and distribution of animal protein (Jackson and Scott 2003:553). According to Jackson and Scott (2003:553), differences in carcass part distribution followed the pathways found in Mississippian hierarchies, as elites received the “meaty” or “quality” parts of the animal while “commoners” received the “less meaty” or “less quality” animal parts. Elites distanced themselves from the actual killing and butchering of animals, allowing non-elite hunters to complete these activities.

Conclusion

The goal of Chapter V was twofold: to show that Archaic hunter-gatherers had a range of choices when it came to the formation of human-animal relationships and to demonstrate how human-animal relationships could be used to alter cultural and natural resources. The type(s) and timing of human-animal relationships in the Archaic Mid-South were complicated, and the origin of these relationships were embedded in environmental, social, and historical contexts that were unique to each community. Human-animal relationship types transpired along a spectrum. This spectrum is best exemplified by the different types of human-canid relationships (but not limited to this type) and crossbreds, taming, and domestication of wolves, coyotes, and dogs. Wolves are thought to have been crossbred with dogs during the European Paleolithic as hunting aids.

Large wolves were bred with domesticated dogs to produce a canid that could be around humans yet wild enough to successfully take down large, dangerous megafauna. Late Prehistoric and Protohistoric communities in the North American Plains provide another example of crossbreeding in the use of wolf/dog hybrids to aid in buffalo hunts. While the above examples occurred thousands of years apart, they demonstrate how human-animal relationships are context dependent. (Allen 1920:461).

Dog domestication was another choice available to hunter-gatherers. Domestication was not an evolutionary endpoint for canids, but an event influenced by the immediate needs of hunter-gatherer groups. Domesticated dogs represented a shift in Archaic mentality, a transformation from liminal existence of tamed canids and wolf/dogs to a socialization process that produced a small beagle-like dog that was found throughout the Middle and Late Archaic periods in the Mid-South (Warren 2000; Worthington 2008).

Tamed, crossbred, and domesticated animals enjoyed culturally designated positions in the social hierarchy expressed by differential access to human social spaces. For example, wolf/dogs were restricted from Paleolithic social spaces and are believed to have lived on the periphery of these camps and were consumed as food (Musil 2000). Ethnographic examples point to taming as a common practice among hunter-gatherers. The work by Zuppi (2022) reveals how pets experienced changing access to human social spaces. Juvenile pets had free range in the community but had restricted access during adulthood.

Dog burial is thought to represent this crossing of dogs from non-social beings to social beings that were now part of the “system of relations” (Richer 2015:349). Dixon (2018) provides the example of how dogs were considered as non-social entities at the site of Ashkelon until they started to perform needed services like garbage clean-up. Once dogs performed these tasks, they

were accepted as social beings and buried in graves once they died. Additionally, the burial of whole dogs (especially if they were sacrificed) follows Recht's (2024) idea that public violence towards animals becomes common in societies that begin to organize themselves into unequal hierarchies.

Chapter V also discussed examples of how human-animal relationships were used to change social systems. Europeans that arrived in the Americas during the 16th-to-19th centuries brought a different cultural and social system including foreign human-animal relationships (Norton 2024). The European human-animal relationships were "weaponized" and used to reconstruct the Native American landscape into a more European landscape. Norton (2024) conceptualized this as a "mode of interaction," a process wherein groups used human-animal relationships to exert control over other groups and individuals.

Chapter V establishes that hunter-gatherers had a spectrum of choices that they could use to create human-animal relationships. These decisions were influenced by a myriad of environmental, social, and historical phenomena.

CHAPTER VI

HUMAN-ANIMAL RELATONSHIPS IN THE SHELL MOUND ARCHAIC

Introduction

While the initial research on human-animal relationships focused on Old-World societies, current studies increasingly focus on the role that human-animal relationships had in shaping native communities in the Americas (Claassen 2014). Just like Old-World communities, human-animal relationships in the Americas were used to support existing social structures, and at times served to recreate and restructure social landscapes (Claassen 2010). Human-animal relationships practiced in precontact and contact North America were influenced by complex social histories, and influenced by cultural, environmental, and symbolic agents (Mullin 1999). As a product of social history, human-animal relationships functioned as social constructs, with behaviors molded to correspond within a specific (i.e., historical) moment in time (Oma 2010).

This chapter provides a brief discussion of the types of animals that lived in the Archaic Mid-South and interacted with hunter-gatherers. It also describes the methodology and approach that will be used to interpret the animal human relationships for this dissertation. Prior to the discussion on methodology, I present a summary of the animals that interacted with Mid-South Archaic hunter-gatherers, using previous studies and examples from different archaeological sites, as a foundation to construct the importance of human-animal relationships in the Archaic Mid-South.

This chapter offers a context derived from Old and New World archaeological sites and ethnographic cases. These examples were chosen from different temporal periods, diverse geographic regions, and varied cultural identities to demonstrate the historicity that underlies all human-animal relationships. It builds the interpretative framework that will be used to analyze

the development of Middle Archaic human-animal relationships at Mid-South shell mounds and cave sites. The goal of this interpretative framework is to recognize that human-animal relationships were not evolutionary processes but were unique creations produced through human agency in specific historical contexts.

Notable Animals Present During The Archaic in the Mid-South

Freshwater Shellfish

One of the most common animals at Archaic sites in the lower Tennessee River Valley are the shells that housed the meats found in freshwater shellfish. The original excavations at sites in the lower Tennessee River Valley did not report which shellfish species were present or provide basic counts of shells (Peres 2019:174). The result is that an analysis of shellfish is beyond the scope of this research. However, shellfish can be discussed in theoretical terms as a social species. In this regard, Claassen (1991) and Peres (2019:175) offer a useful critique of Shell Mound Archaic faunal studies, pointing to a gender bias that over emphasizes white-tailed deer at the expense of the importance for fresh water shellfish. For Peres (2019:175), the emphasis on deer is a male oriented approach that places big game hunting as the focus of the subsistence economy. While white-tailed deer provide more calories than shellfish, shellfish are nutrient rich foodstuffs that include important vitamins and minerals that could not be provided by terrestrial mammals (Peres 2019:175).

Claassen (1991:277) believes that the availability of shellfish promoted a reorganization of task groups in hunter-gatherer communities along gender lines. Using ethnography as a baseline, Claassen (1991:278) states that women and children typically gather shellfish, although their contribution is undervalued in most societies with perceptions of shellfish as a “low resource” or “low ranking” food. In addition to the procurement of specific nutrients from shellfish, shellfish

collection offered a context for the social relationships between women. The collection, processing, and consumption of shellfish by women and children helped to promote socialization of the community. Additionally, Claassen (2010, 2014) views freshwater shellfish as a ritualized animal, where hunter-gatherers purposely collected shells as material to construct ceremonial sites. Alternatively, evidence from areas like the Middle Cumberland River Valley point to shells as a social item that brought people together but was not necessarily a ritualized item.

Domesticated Dogs (*Canis familiaris*)

Independent centers of dog domestication have yet to be identified in North and South America (Fiedel 2005:12; Perri et al. 2019:80). Schwartz (1997) suggested that the Falkland Islands wolf was the possible ancestor of dogs in the Americas, primarily based on the descriptions by Charles Darwin. However, Falkland Islands wolves may have been domesticated dogs that were originally brought to the Falkland Islands that later became feral dogs. Support for an Old-World dog lineage was reported by Angela Perri et al. (2019), based on the similarity of dog DNA recovered from the Early Archaic dog burials at the Koster site with the DNA of Eurasian dogs. Recently, Perri et al. (2019:74) measured three Early Archaic dogs; two dogs from the Koster site and a single dog burial from the Stillwell II site. Perri et al. (2019:74) reported a larger size for the Koster and Stillwell II dogs, suggesting that there was a size variability for early domesticated dogs, especially dogs in the mid-western United States.

Early Archaic dog remains in North America are rare. The earliest known dog burials (without humans) were identified at the Koster site (11GE4) in Illinois, while the earliest known dog burials associated with human burials (in North America) occurred at the Braden Site (10WN117) located in western Idaho on the Snake River. The Braden site is the site type for the *Western Idaho Burial Complex* located in Idaho and Washington State and was dated to 5700 to

6600 B.P. (Yole and Pavesic 2000). Three dog burials were recovered from the Koster Site, located in Greene County, Illinois along a small tributary to the Illinois River (Morey and Wiant 1992). The dog burials were recovered from Early Archaic horizons that accumulated over a 250-year period of seasonal occupations by hunter-gatherers. The three dog burials included two males and a female. Radiocarbon dates taken from charcoal in one of the dog burials indicate an approximate date of 8500 B.P. for the dog burials (Morey and Wiant 1992).

Domesticated dogs can be distinguished from their wild canid cousins by a smaller body size, reduced snouts, larger teeth, and smaller brain sizes (Morey 1990; Perri et al. 2019:76; Musil 2000:21). Since dog domestication is correlated with skeletal changes, previous investigations on southeastern and Mid-South dogs have focused on changes in skeletal differences through time (Morey 1990; Perri et al. 2019:76; Musil 2000:21). A review of the dog skeletal data prompted Morey (1990:233) to suggest that Archaic dogs were similar in size while size diversity appears only after the Late Archaic period (circa 3000 B.P.).

Several archaeologists have measured dog skeletons from Southeastern and Mid-South Middle Archaic contexts. The dog skeletal data published by Warren (2000), Worthington (2008), and Perri et al. (2019) point to an average size for Middle Archaic dogs that resembled the size of a modern beagle. Although the Early Archaic dog skeleton sample size is small, there may be a trend for slightly larger dogs during the Early Archaic. If true, then dog size shifted from larger Early Archaic dogs to a smaller, homogenous dog size found throughout the Mid-South and Southeast during the Middle Archaic period. Warren (2000:105) measured the skeletons of 194 domesticated dogs from sites in Western Tennessee and Kentucky (the sites of Perry, Carlston Annis, Read, Barrett, Butterfield, Kirkland, Ward, Bowles, Chiggersville, Indian Knoll, Eva, and Cherry) and found little difference in dog height across the Southeast and Mid-South.

Worthington (2008:1) developed a typology to distinguish the size of dogs through time with certain sizes appearing in the Archaic, Woodland, Mississippian, and Historic periods. This typology was based on several skeletal criteria including changes through time of mesocephalic and brachycephalic shaped skulls, tooth crowding, presence of a sagittal crest, and snout size (Worthington 2008:127). Worthington (2008:123–123) observed a size homogeny in Archaic dogs that began to change in the post-Archaic world as larger dogs appeared in Woodland and Mississippian contexts.

Using these attributes, Worthington (2008:127) documented that there were three types of dogs that were present in Native communities: Type I, Type II, and Type III. Type I dogs have a mesocephalic skull shape, slight tooth crowding, and the presence of a sagittal crest, while Type II dogs exhibited brachycephalic shaped skulls (pit bull shaped skull), a shortened face, shorter snout, crowding teeth, and the lack of a sagittal crest. Type III dogs exhibit brachycephalic, rounded shaped skulls, small snout, teeth crowding, a smaller overall size, and the absence of a sagittal crest. Type I dogs appeared during the Archaic period and continue through the historic periods, Type II dogs appeared during the Woodland period, while Type III dogs appeared during the Mississippian period (Worthington 2008:127).

Precontact Dog Breeds

The ability of hunter-gatherers to manipulate the genotypic and phenotypic attributes of dogs is evident by the presence of at least three precontact dog breeds found in the Pacific Northwest (Koop et al. 2000:272). At least three dog breeds are known from this region; the Tahltan bear dog, the Wool dog, and the village or Plains Indian dog (Koop et al. 2000:272). The Tahltan bear dog was kept in British Columbia, Canada and became extinct in 1942 (Koop et al. 2000: 272). The Tahltan communities did not eat dogs (MacNeish and Teit 1956: 88) but did use their dogs to

track and bay bears (Kercsmar 2016:520). Dogs were reportedly used only for hunting prior to European contact and only served as pack animals in the early 20th century (MacNeish and Teit 1956: 90).

The Coast Salish dog (Barsh et al. 2006:1) or the Clallam-Indian dog (Koop et al. 2000:272) was common along the coast. The Twana speakers that lived in Puget Sound kept a dog breed for its hair used for clothing. These dogs were recorded by European traders as early as 1792, but these dogs may have existed as early as 4000 B.P. Crockford and Pye (1997:152) state that the Northwest communities kept two dog breeds, the Coast Salish dog, and the village dog. Communities kept both female and males for their fur production, but the majority of village dogs were male, keeping only a few females (Crockford and Pye 1997).

The development of breeds may be one indication for the presence of social hierarchies. Azua (2000:195–200) describes the different types of dog breeds found throughout Central America. There was a common dog, the Itzcuintli or Techichi was found through Mexico. This dog may be the oldest dog type in Mexico and is found in village, burial, and ceremonial contexts. This was also the only type of dog found at Teotihuacan in the Classic Period.

The Mexican hairless dog was medium size with wide post orbital processes and rounder skulls than the common dog. The hairless dog is thought to have appeared in Mexico 2000 years ago (Azua 2000:197) and was probably considered an elite symbol. The Tlalchichi was a dog that had shorter legs and was described as being close to the ground. It came from West Mexico and followed migrations from the west to other parts of Mexico. A short nosed dog was kept by the Maya and is distinguished from other dogs by a shorter face, with a shoulder at 35 cm and a 60 cm in length (Azua 2000:200).

Domesticated Dogs and the Standard Unit of Measurement

Size standardization was not a foreign concept to Archaic hunter-gatherers and Clark (2004) identified a Standard Archaic measurement system, or the Standard Macro-Unit, used for Middle Archaic mound construction in the Lower Mississippi Valley (Clark 2004). Clark (2004) recognized that Middle Archaic mounds in the Lower Mississippi Valley were constructed along terraces with at least a single mound set back from the terrace arranged using an equilateral triangle.

Additionally, the Late Archaic Poverty Point mound complex (1600–1300 cal yr B.P.) (Sassaman 2004:338) incorporated this Middle Archaic unit of measurement on mound size and location at Poverty Point (Sassaman 2004:336). Sassaman (2004:337) believes that the sizes, orientation, and placement of Poverty Point mounds was engineered to encompass past Middle Archaic traditions while bringing together different hunter-gatherer communities under “broad-scale geographies.”

The Standard Macro-Unit has not been applied to shell mound sites in the lower Tennessee River Valley. However, Claassen (2010) has used locational data to suggest that Middle and Late Archaic hunter-gatherers constructed shell mounds at specific, culturally oriented locations. Based on Claassen’s (2010) observation, and the use of the Standard Macro-Unit at Middle Archaic mounds in the Lower Mississippi Valley, hunter-gatherers were cognizant of using size to promote ideology. While Native American dog breeds were documented in the 19th and early 20th centuries (Allen 1920), very little attention has been given to the dog breed concept in the Archaic Mid-South as one visual representation of a belief system. However, if Native Americans had the ability to produce dog breeds, then they had the ability to control dog size. The appearance of similar sized dogs during the Middle and Late Archaic periods should be

considered an intentional choice made by shell mound cultures. Hunter-gatherers were capable of producing a desired dog size as demonstrated in the early reports by Allen (1920).

Archaeologists have frequently used models that initially showed that animal domestication resulted in a size reduction. As discussed earlier, Warren (2000:110) and Worthington (2008) conducted a skeletal analysis on Archaic dog skeletons from the Mid-South and from the greater Southeast. According to Warren (2000:110) “All dogs are small to medium in size and show no unequivocal evidence of discrete size classes or head shapes.”

Worthington’s (2008) analysis produced similar conclusions demonstrating that Middle and Late Archaic dogs were fairly homogenous in their size, something akin to the size of modern beagles (**see Figure 4**). The small size of Archaic dogs is most likely a product of hunter-gatherer choices and changes in social space. In contrast, Morey (1990:10) asserts that not all changes in domesticated animals are intentional or anthropogenic. As domesticated wolves adapted themselves to human cultures, changes in wolf skeletons evolved to the new environment with changes, for example in size, color, and aggressive behavior. However, the evolution argument presented by Morey (1990) assumes that domesticated wolves attached themselves to the same types of human communities. In other words, the diversity in hunter-gatherer groups should have produced visible differences in the end product of wolf evolution.

Dogs in Rituals

There is not a consensus as to why Archaic hunter-gatherers in the Mid-South interred dogs in cave and shell midden sites. For Claassen (2014:198–201), dog burials represent a suite of sacrificial rites that promoted both social and cosmological well-being for the community. These dog sacrifice rites may have served to “rebalance” a community that had experienced turmoil and included healing, substitute for humans, and guide and judge rituals (Claassen 2014:198–201).



Figure 4. Modern Beagle, Similar in Size to Middle and Late Archaic Dogs. Courtesy of Joe and Joan Gittings.

Healing rituals were used to cure sickness, while dog burials could have been buried as a replacement for men that left the group territory (presumably killed) and did not return to their familial group. The guide and judge ritual would have used dogs to guide souls through the afterlife (Claassen 2014:198). While dog burials appear during the Archaic period, there has not been an analysis that compared these dog burials within stratigraphic contexts. The closest temporal analysis for dog burials is provided by Claassen (2014:198) who states that dog burial became common during the Middle Archaic period (2014:198). As noted previously, Claassen (2014:200) tabulated 460 Archaic dog burials in an area that covers the Mid-South, Southeast, and lower Midwest, with 150 of those dog burials from sites associated with the Tennessee River Valley and another 215 dog burials from Late Archaic sites in the Green River Valley of Kentucky.

Dogs as Food

Dogs represent a stable and high volume of edible fat, grease, and protein (Synder 1991:372). Using dogs as a food source was also a choice that was influenced by social, ecological, and economic factors. Historic native communities that lived in the American Northeast and in the American Plains consumed dogs during lean winter months and in feasting events (Roberts 2017:H13; Synder 1991). The consumption of dogs at Native American sites is highly visible. Dog skeletons have at least 321 bones. The disarticulation of a dog skeleton for consumption results in a large animal bone signature with dog bones comprising high percentages of the overall animal bone assemblage (Synder 1991).

For example, Stewart and Finlayson (2000:21) reported that almost 10 percent of the faunal assemblage was disarticulated dog bones, evidence that dogs were consumed at the Irvin-Johnson site located in southern Ontario, Canada 50 km west of Toronto (Stewart and Finlayson

2000:17). This area was occupied by Iroquoian peoples that occupied the area during the 15th–17th centuries living in villages that ranged in size from 0.3 to 4 hectares in size.

Snyder (1991:363) reported that the Pawnee tribe of Nebraska consumed dogs during feasts and during periods of food stress. Periods of food stress included seasons when mammals like buffalo and deer have depleted fat reserves (Snyder 1991). She analyzed faunal assemblages from two sites, the Gray site, circa A.D. 1600–1670, and the Packer site, circa A.D. 1010. Dog bones comprised 22 percent of the animal bone assemblage at the Gray site while the Packer site comprised contained 28 percent canid remains, mostly from large dogs.

Evidence for dog consumption is rare in the Middle Archaic Mid-South and Southeast. Jackson and Scott (2001) analyzed over 13,000 animal bones from the Middle Archaic period mound sites of Conley and Watson Brake, both located in Louisiana. The Conley site produced 3794 animal bones, while the Watson Brake site produced 9224 animal bones. A single bone from the Conley site was identified as a domesticated dog, while no dog bones were recovered from the Watson Brake animal bone assemblage (Jackson and Scott 2001). Disarticulated dog bones were reported from the Eva site at Stratum V and Stratum IV (Lewis and Lewis 1961). These strata most likely represent consumption debris and may be the remains from feasting events.

Regardless, 68 dog bones from the estimated 13,000 recovered from Stratum IV and V (Lewis and Lewis 1961) is not a sufficient amount to be evidence that dogs were commonly consumed.

A small number of dog bones were also recovered from the Big Sandy site, but these bones were most likely from disturbed dog burials (Osborne 1942).

Taboos on Dog Consumption

Food taboos can be perplexing behaviors that do not fit into subsistence or resource optimization models that stress food intensification. Diener et al. (1978:502) points out that food taboos are

social devices commonly used in hierarchal social and political systems. They offer the Islamic pork avoidance as one example where social change employed a new food taboo to restructure authority and power in society. The new Islamic urban centers (where authority was concentrated) issued a pork taboo to the smaller rural settlements as one way to restrict their autonomy. Prior to Islamization, pastoral and rural communities that were situated in the hinterland enjoyed high levels of autonomy, owning large swine herds with little political oversight. Once power shifted to the newly Islamized urban centers, rural swine production was targeted to redirect social and political control to these new centers (Diener et al. 1978). Food taboos have been linked to cultural identity (Simoons 1978). Pig consumption in the Southern Levant waxed and waned from the Middle Broze Age to the Iron Age. While the presence and/or absence of swine in Middle Bronze–Iron Age Israel remains a contentious subject in identifying early or proto historic Israelite sites, by the Roman period, pork avoidance was linked with Judaism (Rosenblum 2010:95). During the Roman period, Jewish writers correlated pigs with foreign rulers, using pork avoidance as a social cue to differentiate Jews from Romans. The pork taboo as Jewish identity may have coalesced to distinguish Jews from centuries of foreign control, especially the conquest of Jerusalem by the pork eating Romans (Rosenblum 2010:101). Hindus in India established a taboo against consuming cattle. Diener et al. (1978:235) point to the cattle taboo as part of the growth of the empire where cows were needed to produce agricultural surplus. The emergence of the state system resulted in the creation of the caste system. Prior to the caste system, Indians feasted on cattle within a more equal social setting. However, with the rise of a state system, organized within a socially defined caste system, the elites controlled excess beef consumption through a beef taboo (Diener et al. 1978). The above food taboo examples show that taboos with domesticated animals can be

evidence that some individuals or groups restricted access to certain animals as a means of social and political control. The practice of social control food taboos is not well understood for hunter-gatherer societies living in the Mid-South and Southeast. A taboo on dog consumption may have emerged during the Middle Archaic period in the Mid-South.

A review of the excavation publications of the Big Sandy and Eva sites, in fact and as discussed in later sections, indicate a taboo on dog consumption starting at the beginning of the Middle Archaic period. These hunter-gatherer communities did not include dog meat as a consistent source of protein, especially from 8200 to 6500 cal B.P. (see Lewis and Lewis 1961). This period may represent a food taboo on dog consumption that began at the beginning of the early Middle Archaic period and lasted until the late Middle Archaic period.

Hunting

Ethnographic studies support the idea that the use of dogs as hunting aids is context specific and not the product of an evolutionary process (Koster 2004). In other words, some groups use dogs to hunt, some groups use dogs to hunt certain species, while some groups do not hunt with dogs. Koster (2009) conducted ethnographic work on hunter-gatherers living in the Neotropics and reported that the introduction of dogs not only influenced hunting but also influenced changes in tool kits, gender roles, and changes in diet. Tool kits expanded to include shotguns, sharpened sticks, machetes, knives, and axes. In addition to male hunting parties, gender and age also shaped dog use with old men, juveniles, and women using dogs to increase their hunting yields. Koster (2009) also reports that the introduction of domesticated dogs to these hunter-gatherers resulted in several adjustments in the community. Women and older males increased their animal capture rate with dogs, and smaller hunting groups used dogs (Koster 2009). Modern hunter-gatherer dog use is typically interpreted using Optimal Forager Theory (OFT). Under the OFT,

dogs are used to increase kill rates, therefore increasing the calorie capture rate among wild animal populations (Koster 2009; Ruusila and Pesonen 2004). Ruusila and Pesonen (2004:547–548) studied the use of dogs with modern moose hunters in Finland and found several patterns associated with hunting dogs. The greatest impact on moose hunting with dogs occurred in smaller hunting parties with 10 or fewer hunters, while larger hunting parties had minimal increases with or without dogs. The use of a dog in smaller hunting parties allowed the dog to bay a moose while a smaller number of hunters are needed to kill the bayed moose. Additionally, dogs become important once moose populations declined and moose were more difficult to find, even with larger hunting groups.

Musil (2000) compared the faunal assemblages from lowland and highland sites that date to the Magdalenian period, to show that dogs were domesticated by Magdalenian hunter-gatherers circa 12000–9000 B.P. in Central Europe. The comparison of faunal assemblages between highland sites and those from lowland steppe sites produced a differential pattern of use for dogs between the two environmental zones. Domesticated dogs are absent at the highland sites while a small, domesticated dog appears in the lowland steppe sites (Musil 2000).

Companion Animals

Companion animals are animals that are kept as pets and maintain a special relationship with humans (Amiot et al. 2016:552). Once animals are used as food, their socialization decreases, and they are thought of as being non-human. In contrast, when individuals give animals human properties, these animals are cared for and treated differently. Mullin (1999:215), commenting on modern Western societies, views pet ownership as one way to express identity and as a means for the middle-class to express social identity and social standing. In dogs, ownership and petting

has been shown to lower the stress of the dog and dog owner. Amiot et al. (2016:556) points out that pets can have health benefits for people who have reduced mobility.

Pets can have several impacts on a community. Pets can relieve social stress and help to promote social contact with other individuals (McNicholas et al. 2005:1252). Hunter-gatherer groups that live in the Amazon capture wild animals to keep as pets using them to maintain social bonds (Zuppi 2022).

Black Bears (*Ursus americanus*)

The precontact black bear habitat ranged throughout Canada, Mexico, and the United States until habitat loss and over hunting reduced their populations (Scheick and McCown 2014:24). Black bears can inhabit different environments including hardwood forests, swamps, and floodplains (Simek et al. 2012:162). Black bears were especially common along river floodplains evident by large bear populations that historically inhabited the canebrakes of the Mississippi Delta (Simek et al. 2012:162). Black bears are large carnivores that hibernate during the winter months which necessitates the accumulation of body fat during the fall months (Larivière 2001:2, Roberts 2017:H3). Bear fats were used by native communities as cooking grease and members of the De Soto expedition reported the storage of bear fat in gourds at the village of Chiaha, located in the vicinity of Dandridge, Tennessee (Davis 2005:14). The Chippewa that lived near Lake Superior were reported to cook dogs, beaver, and deer in bear grease (Snyder 1991:361).

Bear bones were not recovered from the Middle Archaic sites of Conley and Watson Brake (Jackson and Scott 2001) and are not reported from the Dust Cave site in northern Alabama (Walker 1998). However, bear bones were reported from the shell mound sites of Eva and Big Sandy, but in very low numbers. As a result, a brief discussion of the human-bear relationship is present below. The low density of bear bones at Archaic sites has led Claassen (2014:150) to speculate that these bones were

used primarily for ritual powders and for the manufacture of ceremonial masks. Ceremonial or symbolic uses for bear may be evident at the Eva site where a drilled bear canine was recovered from Stratum IV.

The human-bear relationship is not well understood for Archaic shell bearing sites in the Mid-south. Hughes et al. (2022:3) offers a possible relationship matrix that Native Americans had with bears and can be loosely applied to the Archaic Mid-south. Hughes et al. (2022:3) defined four categories of the human-bear relationship (**Table 2**); bears as kin, bears as utilitarian, bears as threats, and bears as political actors.

Raccoons (*Procyon lotor*)

Raccoons are small mammals with that range from 13 to 27 pounds in weight (Whitney 1931: 32). Their diet includes crayfish, mussels, crabs, bird eggs, turtle eggs, nuts, and berries (Rulison et al. 2012: 232). The fur of southern raccoons is lighter in weight, making it better to use as clothing, hats, and coats while the northern raccoon pelt is too heavy to be made into coats (Whitney 1931:31). During precontact times, raccoons had a greater fat content due to the consumption of chestnuts (Whitney 1931:32). Raccoons store fat during the summer and fall months as they can lose up to 50 percent of fat reserves during the winter months (Lotze and Anderson 1979:3). In cold periods, racoons will stay inactive, staying in hollow trees or dens (Lotze and Anderson 1979:3).

White-Tailed Deer (*Odocoileus virginianus*)

White-tailed deer are ungulates that live in small home ranges and tend to not migrate from these home ranges (Wolverton et al. 2012: 466). They need high quality forage and tend to remain in their home range and will return to their home range even if hunted by dogs or otherwise forced to leave these home territories (Wolverton et al. 2012:468). Deer are the most abundant mammal

Table 2. Four Types of Bear Narratives That Shape the Human-Bear Relationship (Hughes et al. 2020).

Bears as Kin	Bears are ancestors of people. Taboos in place to avoid killing bears, although bears could be ceremonially killed
Bears as Utilitarian	Bears provide humans with fur, meat, grease, and medicine. These narratives depict the human control over bears and control over the natural world.
Bears as Threats	Bears threaten the safety of humans and the safety of human communities. Bears are viewed in a negative contexts and can be killed.
Bears as Political Actors	Bears are used to symbolize an ideology such as power, aggression, ethnic/cultural pride, and themes of conservation.

remains recovered from archaeological sites in the Mid-South and are used as a barometer to identify social hierarchies, usually from sites organized at the chiefdom level (Bogan 1980:39; Jackson and Scott 2014; Peres 2023). Hierarchically organized societies, like chiefdoms, can structure the distribution of deer meat through a provisioning system where hunters provided meat to high status, non-food producing individuals/groups (Bogan 1980:39; Jackson and Scott 2014; Peres 2023). The archaeological signature for this system consists of a high density of the hind and fore limbs (the meatier portions) at high status areas while the lesser meaty portions (head and rib/vertebrate) were delivered to the lower status groups (Jackson and Scott 2014). Bogan (1980:44) identified high and low status areas at the Late Mississippian site of Toqua in eastern Tennessee based on the distribution of deer carcass parts. The high status areas (like the mound and adjacent mound area) received the meatier portions from the deer skeleton while the low status areas received the less meaty parts like ribs, head, and vertebrate. Jackson and Scott (2014) also investigated Mississippian period distribution of deer parts at the site of Moundville located in west/central Alabama. They found that elite classes were provisioned by rural hunters/producers which delivered the meaty deer parts like the fore and hind limbs to these elites (Bogan 1980:44).

Peres (2023) used deer carcass part distribution to infer the type of meat provisioning at two Mississippian villages in the Middle Cumberland River region. She compared the deer remains from a rural farmstead site, the Brandywine Pointe site (40DV247), and a mound and village site, the Ruthford–Kizer site (Peres 2023:181). Her research found that elite Mississippian social classes in the Middle Cumberland region of Tennessee were provisioned with the meatier portions of the deer that also included the hind and front quarters. One problem with estimating the contribution of deer meat to an Archaic period group is that weight and meat depend on the

age, size, and sex of the deer. The schlepp effect sometime occurs when certain portions are selected to move back to camp, with only choice parts returned. The schlepp effect is the process when certain parts of the animal skeleton are left in the field (Perkins and Daly 1968; Reitz and Wing 1999: 204). The less meaty or lower value parts are left at the kill site while the meatier, high value parts are transported back to the group (Cregg and Holt 2002:746). Some elements are meatier, and hence more desirable than others, and would have been a focus of provisioning.

According to Reitz and Wing (1999:204):

A high degree of skeletal completeness may indicate the animal was killed nearby; that the species habitat was near the site, that the animal was relatively intact when discarded or was not disturbed substantially once buried; or that the deposit was a burial of a pet or sacrifice. Animals were few elements represented may indicate transport, extensive butchery activity, sharing, or a great deal of post-mortem disturbance.

A basic break-down of the deer skeleton includes Head (cranial and teeth), Axial (Vertebrae and ribs), Forequarter (scapula, humerus, ulna, and radius), Hindquarter (pelvis, sacrum, femur, patella, and tibia), and Foot (phalanges) (Reitz and Wing 1999:206).

Some carcass parts were not the remains of elite meals but routed into the ritual/ceremonial sphere. Claassen (2014:195) has argued that deer antlers found in grave pits at the Archaic sites in Middle Tennessee represent ritual functions and not the remains of meals. The Anderson site, located in Middle Tennessee, contained fragments of deer antlers within a cremation burial and a fawn alongside a child (Claassen 2014:195). Deer antlers and deer antler tools were recovered from shell mound sites in western Tennessee and included drilled antlers, antler projectile points, and antler tools (Bissett 2014).

Conclusion

This chapter presented a discussion of some of the animals that humans formed relationships with during the Middle and Late Archaic periods in the Mid-South. The goal of Chapter VI was to demonstrate that Archaic hunter-gatherers developed relationships to achieve certain goals. These human-animal relationships were fluid and could be changed as needed. The species discussed is purposely narrow in range and focuses on mammals. The past excavations of archaeological sites in the lower Tennessee River Valley did not publish the amount of freshwater shells or the freshwater shell species present at sites.

Human-animal relationships were created to support subsistence needs, to create or maintain social order, or as symbolic items to validate ritual ideologies. The dog is the only known animal to be domesticated by Archaic hunter-gatherers. The integration of dogs into hunter-gatherer communities was by design and the particular use of dogs is evidence for social and ideological organization. Hunter-gatherers were presented with choices on how to structure their dog and wild canid use. Prior to the appearance of the Middle Archaic domesticated dog, hunter-gatherers may have used wolf/dog hybrids to aid in the hunting of larger prey, a situation that has been documented at Paleolithic sites in Europe and at Plains Indians at the time of European contact. Domesticated dogs can be embedded with social meaning. Social meaning was embedded in domesticated dogs through selective traits that included size, fur color, and aggressive or unaggressive behaviors.

The appearance of domesticated dogs during the Archaic Mid-South has led to speculation as to their use and role in hunter-gatherer society. Most archaeologists stress some type of social relationship such as hunting dogs, protection, companionship and/or as a ritual symbols (Claassen 2014, Walker et al. 1997). Beyond these broad assumptions about dogs,

archaeologists have afforded very little attention to the range of choices that Archaic hunter-gatherers possessed with dog domestication. As a non-food source, domesticated dogs can be evidence for the organization of social systems through breeds, food taboos, and ritual activity. European explorers recorded a wide range of dog breeds owned by Native American groups. The Salish of the Northwest Coast developed a dog for its hair alongside village dogs (Barsh et al. 2002). While dog breed development can be associated with hierarchal social systems, the standardization of dog size may also be evidence for social organization.

Size, as an indicator of ideology, was expressed regionally with mound standardization in the Lower Mississippi Valley (through a standard unit of measurement) and perhaps through the standardization of dog size in the lower Tennessee River Valley. The tradition of using a standard unit of measurement had a long history, mirrored by the same long history of a standard Archaic dog size in the Mid-South. The bones of white-tailed deer are the most numerous type of animal bone recovered from Archaic sites excavated in the lower Tennessee River Valley (Lewis and Lewis 1961, Osbourne 1942). White-tailed deer are important because these animals supported the subsistence economy for Archaic hunter-gatherers. White-tailed deer have been used in archaeology to identify precontact hierarchal societies through the differential distribution of carcass parts to different social groups. These studies have been conducted primarily for chiefdom and state level societies but can also be applied to Archaic hunter-gatherer sites. These distribution systems are really expressions of social space for the human-animal relationship (in this case the relationship with deer) where individuals from different social categories had dissimilar types of social spaces with the animal at different times than other social groups. If unequal hierarchies emerged at Middle and /or Late Archaic shell mound

sites, the expectation is that distribution channels for deer meat would have been similar to other hierarchal societies like chiefdoms and states.

CHAPTER VII

METHODOLOGY

Introduction

Here I describe the methodology and framework used to conceptualize the role that Archaic animals played in structuring the organization of Archaic groups in the lower Tennessee River Valley. Concepts employed to interpret the Archaic human-animal relationships are discussed, including the Animal Bone Group (ABG) (Morris 2012) which links the archaeological data examined with past human behavior. This concept groups animal bone assemblages into categories that can then be used to compare categories across spatial, temporal, geographical, and cultural spheres. These concepts help us to interpret the complex relationships that humans formed with animals throughout the world but have yet to be applied to Mid-South Archaic communities.

Raw faunal data and information on animal interments was taken from previously published archaeological reports. While there are limitations using published data, there is still relevant information that can be gleaned from previously excavated and published sites in the Mid-South. More importantly, the radiocarbon dating of deposits (Bissett 2014) from Mid-South archaeological sites provides the opportunity to associate Archaic animal use within a tighter temporal context.

In order to analyze the previously published faunal data, several methods were employed for this study including the Number of Identified Specimens (NISP) and the Relative Frequency (RF) of animal bones (Hesse and Wapnish 1985). These methods are described in detail in Chapter VIII. The NISP, and RF were used to develop ABGs as one method to organize and interpret animal bone deposits from Archaic Mid-South shell and cave sites. ABGs used in chapter VIII include

the Whole ABG and/or Partial Disarticulated Bone ABG, Feasting ABGs, Ritual, Sacrifice ABGs. These ABGs will then be placed in a scheme that associates individual ABGs with certain types of social behaviors.

Following the discussion on the ABG scheme, a social index for human-animal relationships is developed and presented. This social index was developed using the different ABGs and then associating each ABG with a social index score of Low, Moderate, or High. The social index scores were then associated with an egalitarian, transegalitarian or tribal social organization.

Animal Bone Groups (ABGs)

The Animal Bone Group (ABG) is a concept that is used here to organize and interpret animal bones deposited at Middle and Late Archaic archaeological sites in the Mid-South (Morris 2014:13; Pluskowski 2014:2). The ABG concept was developed in Europe to distinguish if whole animal skeletons were products of ceremonial/ritual burial or were products of natural processes. ABGs are grouped into categories that can be used to compare animal bone deposits within sites, between sites, between regions, and between temporal periods (Morris 2014:9) It was also used to create analytical units that could be studied and compared across sites, within sites, and between temporal periods (Morris 2014).

An ABG is a grouping of animal bones that are separated into categories that can then be interpreted by their archaeological context and by the temporal period of utilization. The ABG categories are unique to each project and are developed by the researcher as one method to answer a set of research questions. Unlike subsistence and functional approaches, the ABG concept is grounded in human behavior, and considers the deposition of animals within a social and ritual context (Morris 2014) (**Figure 5**). For example, Morris (2014:13) developed ABG categories to interpret animal deposits from the Bronze Age to Late Medieval periods in Britain.

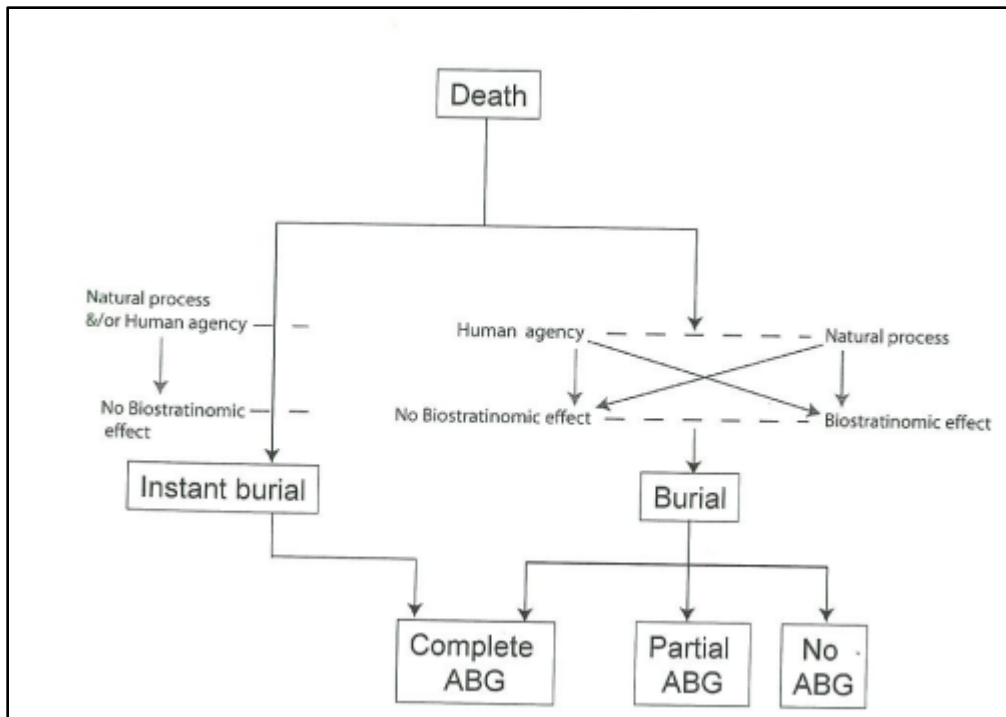


Figure 5. Flow Chart Showing ABG Development (from Morris 2012:15).

These categories included functional, culling, disease, fall, natural death, waste, ritual/sacrifice, feast, foundation offering, and offering. The methodology proposed by Morris (2014:13) will be a baseline to develop regional and site specific ABGs for the Middle Archaic shell mounds in the Mid-South.

ABGs are beneficial in determining if animal bone deposits were products of cultural or natural processes, products of butchering and dismemberment, and/or products of ritualized and non-ritualized activities (Morris 2014:13, Pluskowski 2014:2). ABGs are used to observe changes in human-animal relationships through time (Morris 2014:10–11).

The ABG concept was applied to this research but was modified somewhat to better fit the overall research questions of the dissertation. I employed several ABG categories to place animal bones and animal deposits into social categories that were then associated with different types of human behavior. For example, as discussed in Chapter III, women and men tend to hunt different size animals; men hunt large animals while women hunt small animals. Using traditional subsistence based approaches, each animal would be assigned a caloric value and then placed in a hierarchy of importance as a food resource.

In this case, deer are the most important food source when compared to smaller animals.

However, if small animals are placed together in an ABG category, then a comparison can be made between the social aspects of gender and the hunting practices

Disarticulated ABGs

Disarticulated ABGs are single bones that were removed from the skeleton through slaughter, butchering, consumption or through natural processes. Interpreting disarticulated animal bones and developing an ABG relies on context. For example, the Plains Pawnee used dogs to buffer against

resource and food shortages and dog bones form high percentages of recovered animal bones (Synder 1991).

Feasting Remains ABG

Feasting remains can produce a variety of faunal signatures (Hayden and Dietler 2001). For this project, feasting remains will be categorized as large amounts of animal bone waste where large groups of individuals were consuming food. Feasting ABGs are also context dependent. The expectation is that whole animal skeletons were brought to the site and dismembered with all parts of the animal consumed during the feasting event. The identification of animal bones or ABGs from feasting events can be difficult to identify, especially for egalitarian hunter-gatherers. In contrast, transegalitarian hunter-gatherers developed surpluses into social currency that can be given away as a means to build social alliances. The result is that feasting can be evidence for the appearance and growth of social hierarchies (Hayden and Dietler 2001).

Ritual/Sacrifice ABG

The ritual/sacrifice ABG includes the burial of whole/complete animals and/or the presence of unique animal bones at archaeological sites. Examples of the ritual/sacrifice ABG for Middle Archaic cave/rock shelter and shell mound sites include the temporal clustering of animal burials/unique animal bones, the placement of an individual animal burial in a ritualized context like the base of a mound, and the burial of individual animals or animal parts in caves.

Rituals and sacrifice are important with the use of ABGs. Rituals are defined as repetitive performances used to maintain existing authority (Feuchtwang 2010:281). A sustainable ritual must be recognized as something that is special, not ordinary, repetitive but not so habitual that it becomes mundane (Feuchtwang 2010:284). The unique nature of ritual creates a shared memory and group experience through dietary taboos, special smells, dramatic performances, pain, and

spiritual connections (Feuchtwang 2010:281). According to Assman and Czaplicka (1995:130) cultural memory is history that must be recreated every generation. Rituals serve as the platform to institutionalize social and political structures, which sanctions select groups, social classes, and individuals the perceived right to transmit traditional knowledge through time (Feuchtwang 2010:285).

Ritual slaughtering of animals is usually identified at archaeological sites where animals are found buried in some type of ritualized context like human cemeteries, within human burials, within mounds, and underneath house foundations.

Whole Burial and Partial Burial ABGs

At the basic level, ABGs can be divided into whole or partial. The whole and partial ABG have been applied as one method to interpret animal burials at some archaeological sites in Europe and can be used to organize animal burials in the Archaic Mid-South. In the case of European archaeological sites, a whole ABG is the complete or near complete skeleton in a burial while the partial ABG is the deposit of certain skeletal elements within a burial/ceremonial context. Bertasius (2014:62-63) distinguished between public sacrifice and private burial practices using 8th–12th century horse burials in Central Lithuania as a case study. Bertasius (2014:70) identified whole horse burials as one ABG and identified disarticulated horse bone burials as another ABG. The burial of a whole animal is what Fern (2014:171) describes as “active media” that uses animal sacrifice, within a public or ceremonial context, as public media to reinforce societal norms (Bertasius 2014:61; Fern 2014:171).

These two ABG types were unique to Lithuanian public cemeteries, for two different reasons. The burial of whole horses was the public event that constituted “active media,” where horses were publicly sacrificed to reinforce the status quo where warriors were considered the elite social class. In contrast to the whole ABG, Bertasius (2014:62–63) interpreted the disarticulated ABG as private

burials where individuals or families placed loose horse bones in cemeteries to protect their family members against disaster and evil spirits (Bertasius 2014:63).

Disposal as Ceremonial Trash

Similar to Bertasius (2014) and Horvath (2014), Hill (2000:362–363) provides another example for a “context-oriented” approach to investigate human -animal relationships. Hill (2000) studied animal burials from several cultures that lived in the American Southwest from A.D. 1000 to 1400 A.D. and linked different human-animal relationships with distinctive burial practices for individual animal species. Although Hill (2000) does not formally use the ABG concept, she does employ social context as the framework to identify the human behavior that produced animal burials. Hill (2000) identified different types of human-animal relationships practiced for avian species, dogs, and bears, by contextualizing the animal burials. Her study used a tripartite scheme where she contextualized the burial of individual animal species with different human behaviors:

- 1) animal sacrifice and disposal as ceremonial trash,
- 2) dedicatory interment offering,
- 3) simple interment or expedient disposal.

Walker (1995) was the first to use the concept of ceremonial trash and Hill (2000) applies the concept on her study on avian burials in the American Southwest. Ceremonial trash consists of those animals used once for ceremonial purposes and then buried. These animal burials were not meant to be remembered or used to shape social organization. Burials defined as ceremonial trash (Hill 2000: 378) were those animals that had body parts used for ceremonial purposes and then buried as a form of respect to the animal. These animals were not sacrificed in public events but instead killed for certain body parts (like feathers or skins). In the American Southwest,

feathers were stripped from parrots, turkeys, and macaws to make ceremonial costumes and masks in the areas where the Anasazi and Mogollon peoples lived (Hill 2000: 378). Once the feathers were stripped, the bodies of the birds were buried as ceremonial trash, usually outside of houses and in agricultural fields and local shrines. Bird burials correspond with ethnographic studies that document two methods that modern hunter-gatherers use to kill birds for feather usage: the removal of the bird's head and/or striking the bird's head with an object. For Hill (2000:378), the burial of headless birds or with head trauma should be considered as ceremonial trash and not as a sacrifice or ceremonial offering.

Dedicatory Interment Offering

Dedicatory Interment Offerings are animal burials that are offered to influence social action, social behavior, and social meaning by appeasing forces beyond human control. Unlike ceremonial trash, dedicatory interment burials served as an offering meant to transfer good fortune from supernatural entities to individuals or communities. These animal offerings reflect the series of transformations directed on animals by people (Horvath 2014:312; Pluskowski 2014:2). Dedicatory Interment Offerings are placed in ritual structures (like a kiva) or placed in ritualized locations (Hill 2003).

The burial of domesticated dogs as dedicatory interment burials was a common phenomenon identified across the world in diverse temporal and social contexts. Hill (2000:386) reports that dogs were buried on the floors of kivas that were in the process of abandonment. In some cases, dogs were placed in stone slab covered pits. Mackinnon (2010:251) believes the 5th-and-6th century B.C. Greeks practiced a right/left side dichotomy with animal sacrifice symbolizing certain positive and negative attributes. Mackinnon (2010:250) believes that the right side of the animal indicated “godly, pure, or heavenly” while the left side of the animal represented “mortal, impure, or sinister.”

The Greeks, circa 323 B.C., recorded a Macedonian military practice where a dog was slaughtered with the forelimbs placed on the right side of the road and the hindlimbs on the left side of the road (Mazzorin and Minniti 2006:63).

Simple Interment or Expedient Disposal

Simple interment or expedient disposal is the process where animals were killed and buried for reasons not associated with ritual or ceremony. These deposits were usually the culling of old and/or diseased animals that were removed from the community for safety reasons. In England, sheep burials were common at rural sites where diseased animals were killed. At the Koster site (Struever and Holton 2000), evidence suggested that hunter-gatherers would just bury a pet dog once it died with no real reason for its placement.

Animal Bone Analysis

The frequencies of animal bones and the groupings of these animal bones will constitute the approach and analysis for this research project. All data for the analysis were selected from published sources and no animal bones or animal burials were physically analyzed for the project. Animal bone groupings or ABGs were developed to distinguish past social behaviors and to associate ABGs with different types of human-animal relationships.

Relative Animal Bone Frequencies (RNF)

Relative frequencies was utilized as the statistical method to create each ABG. Relative frequencies were employed only for disarticulated animal bones and not for animal burials. Animal burials were assigned as a single analytical unit, and individual bones were not calculated for each animal burial. Relative frequencies can be manipulated and counted using several applications. The simplest way to calculate relative frequencies is to use the Number of Identified Specimens (NISP) (Reitz and Wing 1999: 191). Reitz and Wing (1999:191) state “Relative frequencies of taxa are most commonly used

to augment age and sex ratios; to identify specialized sites or activity areas; and to compare animal use by distinctive social groups.”

One method to determine species frequency is to divide the observed frequency by the number of times the bone appears in the skeleton. If sides of the body (right versus left) were not recorded, then the number of times the bone is present in the body is used for division. Corrected frequencies is a method when the most common skeletal element is constant and to the degree to which it is a multiple of other categories is used to increase other categories. These numbers then are converted to percentages and plotted on a bar graph. If the sample has a bias, then the sharp differences between the animal bone groups will show a bias (Hesse and Wapnish 1985).

Analysis For Carcass Part Distribution

The analysis of carcass part distribution focused on a single species, white-tailed deer . White-tailed deer were the most numerous animal mammal species recovered from shell mound sites in the Mid-South. As the basis for the Middle Archaic subsistence economy, carcass part distributional analysis is conducted for each site because deer bones were the most frequent. Each anatomical region is assigned to a category that included the bones grouped in that category. They can also be grouped by high value medium value, or low value (Reitz and Wing 1999:206).

The low counts of animal bones for small mammals (like raccoons, opossums, beaver, rabbits, and squirrels) restricted an analysis for small animal carcass part distribution. Instead, small mammals were grouped together, creating a single analytical unit that was then used as part of the ABG analysis (Table 3).

Animal Bone Groupings and the Social Animal Index

While traditional zooarchaeological models describe animals in terms of caloric contributions, very little research has been conducted on the social value of animals in the Archaic Mid-South. In order to

Table 3. Carcass Part Distribution for White-tailed Deer.

Carcass Part	Skeletal Part
Head	Skull, Teeth, Mandible, Maxilla
Axial	Vertebra, Rib Fragments
Fore Limbs	Humerus, Scapula, Radius, Ulna,
Hind Limbs	Pelvis, Femur, Tibia

interpret the ABGs for the Middle Archaic Mid-South, the ABGs have been associated with a “social index” with individual ABG groupings. This social index is then tied to general social organizational modes (egalitarian, or transegalitarian). The “social index” or the “social value” is somewhat subjective and is dependent on the social, temporal, and historical context of a given archaeological site. For the Archaic Mid-South, a high “social value” is the use of the human-animal relationships to build and/or maintain some level of temporary or permanent social hierarchies, while the low “social value” represents daily meals and consumption debris.

The social index developed for the Archaic Mid-South differs from the approach found in subsistence based approaches, like the Optimal Foraging theory. The Optimal Foraging theory is a caloric risk/benefit model that interprets animal utilization based on the energy expended versus the energy gained. The energy expended to procure an animal should not be more than the energy (calories) that the animal will offer the hunter.

High Social Value ABGs

The High Social Value ABG were those animals whose human-animal relationships were manipulated to create or to maintain some level of temporary or permanent social and/or ritual hierarchy. High Social Value ABGs include the use of an animal species in public displays of internment while at the same time these animals were removed from the subsistence economy. The High Social Value is typically associated with transegalitarian hunter-gatherers mainly because these communities constructed social hierarchies and left recognizable deposits that represent their construction of these human-animal relationships. By contrast, egalitarian hunter-gatherers did not participate in activities that resulted in unequal social hierarchies as their organization was typically based on food sharing (Hayden 2001:45). Not all High Social Value ABGs originated in the same context and these different social contexts give meaning to High Social Value ABGs. The distinctions

within the High Social Value ABG indicate that hunter-gatherers utilized this ABG through animal interment, feasting, and carcass part distribution to elite/upper social classes. All three types animal utilization was used in different ways and in different places to create or maintain the social and ritual order. For example, the Archaic shell mound cultures in Florida used High Social Value animals for public feasting (minus animal interments) at while the shell mound cultures in the Archaic Mid-South may have included feasting (based on the high density of mussels) but used the interment of dogs as public displays. Typically, these ABGs were whole animal interments but could also be parts of the animal.

The other High Social value ABG has to do with how certain animals were socialized for human consumption. Large scale and small scale communal feasting events can transform animals commonly used in daily meals into animals that have a high social value during specific moments. The use of certain species in feasting events could involve High Social value ABGs, if Animals used in feasting events attain a temporary High Social value that returns to normal after the feast.

Another High Social value/ABG is when a species was killed, and the carcass parts distributed to the group through a hierarchical food distribution system. As part of a hierarchal food distribution system, the most desirable cuts of meat are routed to elite/upper classes. This system is a type of institutionalized social distancing where some consumers (the elite/upper class) are separated from the bloodier process of killing and animal dismemberment. Carcass part distribution is a more permanent situation where hunting, activities associated with dismemberment, and consumption are socially segregated in the community.

Low Social Value ABGs

Low social value /ABGs include animal species that form the subsistence base and not connected to ritualization or used to form permeant social hierarchies. Animals used during feasting events to

construct social relationships but that did not support a social hierarchy beyond an egalitarian structure are considered to have a low social value. These types of animals are expected in hunter-gatherers that have sharing as their economic and social base. Hayden (2001:45) believes that egalitarian hunter-gatherers did not have feasting events as a social practice. Another low social value ABG is the use of cross breeds and tamed animals. Crossbreeds, like wolf/dog or coyote/dogs, were somewhat expedient and once their need declined these animals were most likely eaten and not used to build social hierarchy. Tamed animals were most likely used in the same manner and killed and consumed once these animals reached adulthood.

Conclusion

This chapter detailed the methodology and approaches used to develop the ABG groupings for this project. The goal was not to analyze or discuss the subsistence economies of the Shell Mound Archaic but to examine the types of human-animal relationships that were created between animals and Archaic hunter-gatherers. In order to give meaning to animal bone assemblages from the Shell Mound Archaic, this study employs the technique of Animal Bone Groups (ABGs). ABGs is one method that group animal remains from archaeological sites into categories that can be then used to compare animal bone deposits within sites, between sites, between regions, and between temporal periods (Morris 2014:9). ABGs that are used in this study include Whole Burial and Partial ABGs, Feasting ABGs, Ritual Sacrifice, ABGs, Dedicatory Interment ABG, and Expedient ABGs. This chapter also presents, in tabular format, some of the ABGs that were used to rate animal-human relationships in terms of their social values (see Hawkes et al. 1991, Lee 1979). These ABGs are developed for the animal remains from the sites discussed in subsequent chapters, and compared between sites to determine if there were changes through time in Archaic human-animal relationships. In addition to ABGs,

carcass part distribution can be evidence for changing human-animal relationships (see **Table 4**).

For this study, carcass part analysis was only available for white-tailed deer. Smaller animals at these sites did not produce sufficient counts to determine if these were choices in body part distribution. Carcass part analysis for deer included the head, the axial (vertebrae), toes, (phalanges, ankle bones) fore limbs (front of the animal shoulder, humerus, femur), and hind limbs (Femur, Tibia, and Pelvis).

The head included cranial fragments but excluded antlers. The high number of deer antlers will bias (inflate) the cranial category as antlers were brought to sites in high numbers for tool manufacture. Antlers were most likely cached at sites and artificially increasing their numbers.

Table 4. Proposed Archaeological Social Index Values for Archaic Animal Species in the Mid-South.

Animal	Organization	Social Value	Consumed?	Archaeological Signature/ABG
Dog Crossbreed	Egalitarian	Low	Yes	Scattered bones that are difficult to identify to canid species, “wolf-like” or “coyote like.” Crossbreed species.
Tamed Animals	Egalitarian	Low	Yes When the animal reaches adulthood	Scattered bones are not part of daily consumption but intermixed with daily subsistence debris. Low Density of species at sites.
Dog	Egalitarian but Religious Hierarchy	High	Consumption Some Animals Taboo as daily food	Buried in public spaces at specific times (usually during meeting events), public performance. Taboo on consumption as means of social control.
Dog	Transegalitarian	High	Consumption Taboo as daily food	Buried with humans in cemeteries, more secular than ceremonial
Dog	Transegalitarian Also found in Tribal Groups	Low	Yes During Periods of Food Shortage	High density of bones in secular context. Majority of the animal skeleton present in refuse middens.

Table 4. Proposed Archaeological Social Index Values for Archaic Animal Species in the Mid-South Continued.

Animal	Organization	Social Value	Consumed?	Archaeological Signature/ABG
Dog	Tribal	High	Yes, Distinct Feasting Event(s)	Low density of bones at feasting location, in cooking pits etc.. Unique Food Items
Deer	Egalitarian	Low	Yes	Maybe small feasts but may not be distinguished from Daily Meals. Not used to Create Permanent Hierarchies. Various Densities of Animal Bones From Everyday Foodstuffs.
Deer	Trans-Egalitarian	High	Yes, when certain cuts of the deer are channeled to select social groups.	Lower density of bones, higher density of certain select portions of the carcass. Certain groups have social distance in hunting and carcass processing?
Deer	Egalitarian	Low	Consumed as regular meals in solidarity feasts.(see Page 315)	High to moderate density of bones, distributed at site through time. Low Social Distance, meat shared with group.

Table 4. Proposed Archaeological Social Index Values for Archaic Animal Species in the Mid-South Continued.

Animal	Organization	Social Value	Consumed?	Archaeological Signature/ABG
Raccoon	Trans-Egalitarian	High-If Low Density of Bones	Yes	Low density of racoon bones. Women may be focused on other activities than small game procurement (see Hawkes et al. 1991 for Women and Small game)
Raccoon	Egalitarian	High	Yes	Women share game with other women. Higher density of small game than at other sites. May connect households and families together at aggregation sites or at ritual sites.
Turtles	Trans-Egalitarian	Low	Women are focused on other activities	Women focus on bead, cloth manufacture. Low density of turtle bones. (see Hawkes et al. 1991 for Women and Small game).
Turtles	Egalitarian	Low	Women share with other women	Connect households and families together. Moderate to high density of turtle bones.

CHAPTER VII

THE ARCHAIC PERIOD

Introduction

A general overview of the Archaic period for the Mid-South is offered here with an emphasis on Shell Mound Archaic communities and cave site habitations. The goal of this overview is to present a holistic, regional, and historical background within the context of social organization, climate/environment, and subsistence patterns. It begins with a brief overview of the environmental conditions and environmental periods during the Early, Middle, and Late Archaic periods, followed by a more detailed discussion of the different geographic areas that include the Gulf Coast, St. Johns River in Florida, and the Green River Valley of Kentucky. The inclusion of these different regions provides a regional context to better understand the Archaic Mid-South. Conceptual models, like the resource-first model and the human agency model are presented following the discussion of the different regions that form the Shell Mound Archaic.

The Archaic Period

While Arthur Parker was the first person to describe non-pottery cultures as “Archaic” in 1923, it would be William Ritchie’s inclusion of the word in the Midwestern Taxonomic System gave the word staying power in archaeology (Stoltman 1992:105; Sassaman 2010:3). By the 1960s, the term “Archaic” was used in Griffin’s (1967) major cultural synthesis to describe the post Ice Age hunter-gatherers that lived throughout the Eastern Woodlands (Sassaman 2010:8).

Throughout the 20th century, Archaic sites were interpreted within cultural evolutionary models that interwove hunter-gatherer social organization and cultural diversity and changes in environmental conditions (Anderson et al. 2007:460; Anderson and Sassaman 2012). Sassaman (2010:8) believes that this approach has “obscured remarkable spatial variations, as well as

change within the Archaic” and promotes a more historical approach to understand Archaic cultural diversity. The word “Archaic” now can include human agency and complex social organization as well as adaptation to periods of environment change (Anderson and Cook 2017).

The Mid Holocene Environment in the Mid-South

Driese et al. (2008:287) used soil core data from Hamilton County, Tennessee to report “warming and increased aridity during the period~ 6500 to 5000 14 cal yr B.P.”. One sequence for climate change through time was presented by Kippel and Parmalee (1982:447), who identified environmental shifts based on the presence/absence of certain shrew and mole species at the Cheek Bend Cave site located on the Duck River in Maury County, Tennessee. Eight distinct soil strata, along with corresponding shrew and mole species, were identified at the cave. The full glacial period was represented in the lowermost Stratum I and Stratum II when boreal forests of jack, pine, spruce, and fir tree communities were present.

By Stratum III, a narrower range of mole and shrew species lived at the cave, a decrease that Kippel and Parmalee (1982:452) interpreted as the transition to the Early Holocene and a continental climate (a climate that has dry summers and cold winters). By the early Holocene, the area around Cheek Bend Cave was covered in cool temperature mixed forest with patches of cedar glades intermixed with hardwood forests evident by the increase of *Cryptotis parva* (Kippel and Parmalee 1982:456) (**Table 5**).

Middle Archaic environments developed within the framework of the Hypsithermal climatic period (Anderson et al. 2007:457; Sassaman 2010:22; Kippel and Parmalee 1982:449). The Hypsithermal was a global warming event that saw temperatures and aridity intensified at varying scales (Anderson et al. 2007:457). The temperature during the Hypsithermal was similar to modern temperatures, although seasons during the Hypsithermal may have been hotter and

Table 5. Environmental Conditions At Cheek Bend Cave(Kippel and Parmalee 1982).

Stratum	Date	Environment/Climate
I and II	Pleistocene	Full Glacial, Boreal Forests Jack Pine and Spruce Fir Forests
III	Late Pleistocene	Late Wisconsin, Reduced Mole Species
IV	Early Holocene	Continental Climate, Increase in Open Areas Aggrading between 8000–5000 YBP
V	Ca. 7,500 +/-440 rcbp	Decreased rainfall/Drier Conditions. Cedar Glades transition into open habitat
VI	Ca. 7,500–2630 rcbp	Expansion of Deciduous Forest

colder than temperatures in modern times (Anderson and Sassaman 2004: 94). In the Mid-South, lakes and rivers may have been lower (Anderson and Sassaman 2004). During the Middle Holocene, warm winds resulted in a decrease in summer rainfall that caused changes in the vegetation communities and lowered water levels in Mid-South lakes and rivers (Anderson and Sassaman 2004:94; Dye 1996:141). Warmer and drier conditions impacted upland vegetation communities with increased soil erosion (Anderson 1995:158) while cypress swamps and pine forests spread along the coastal plain and river valleys became covered in hardwood stands (Anderson et al. 2007:459).

Anderson et al. (2007:11) point out that the Hypsithermal was a global phenomenon but impacted different areas in different ways. Interpretation of the Hypsithermal climatic data has led some archaeologists to associate the change in climate with the appearance of shell mounding cultures and the rise of more complex/hierarchical hunter-gatherer societies in Eastern North America (Anderson et al. 2007:460). Backswamp sloughs developed and expanded while shoals became prevalent, stocked with expanding shellfish communities (Anderson 1995:158). Shellfish mound and shell bearing archaeological sites do appear in the Mid-South circa 8000 B.P (Anderson and Sassaman 2012).

In contrast, Claassen (2010:75) believes that the Hypsithermal had very little impact on shell bearing communities in the rivers of the Mid-South. Claassen (2010:80) argues that while temperatures were drier during the Hypsithermal, there was no increase in surface run off water (Claassen 2010:76). According to Claassen (2010) shellfish were available to hunter-gatherers prior to the Hypsithermal. The increase in shell at Middle Archaic sites was driven by social and cultural needs and not a product of enhanced availability (Claassen 2010).

The Mid-South Region

The Mid-South is a region defined by Lewis and Kneberg (1959:161) as the area of the central Southeastern United States between the “33 degree and 38 degree latitude”. They divided the Mid- South into four regions that included the Kentucky region, the Tennessee region, the Alabama region, and the Georgia region (Lewis and Kneberg 1959:161). The Tennessee region is a 60 mile stretch of river valley situated along the Tennessee River between northern Alabama and Kentucky (the lower Tennessee River Valley). This region is part of the Western Valley physiographic area that includes the Western Mesophytic Forest Region (Lewis and Kneberg 1959:161). The Western Mesophytic Forest Region is a transitional zone that separates the Mesophytic Forest Region to the east from the Oak–Hickory Forest and Bluestem Prairie Regions situated to the west (Braun 1950).

The Western Mesophytic Forest Region is populated by different environmental niches that include prairies, karst uplands, mesic deciduous forests, dry cedar forests, and swamp forests (Kresja and Hargrave 2006:10). Approximately 50 percent of the forests is covered in oak and hickory trees, although mesophytic species are occasionally found on slopes and in ravines (Braun 1950:151–154).

The Mesophytic Forest Region is home to a variety of mammals, birds, shellfish, reptiles, and amphibians. Many of these taxa were important to both precontact and historic populations, including certain species that have since become extirpated from the region. Large herbivores, including elk (*Cervus elaphas*), white-tailed deer (*Odocoileus virginianus*), and American buffalo (*Bison bison*), and small- to medium-sized mammals, including raccoon (*Procyon lotor*), woodchuck (*Marmota monax*), beaver (*Castor canadensis*), eastern cottontail (*Sylvilagus floridanus*), swamp rabbit (*Sylvilagus aquaticus*), and gray squirrel (*Sciurus carolinensis*), were

part of precontact diets. Predatory species, including wolf (*Canis lupus*), cougar (*Puma concolor*), black bear (*Ursus americanus*), coyote (*Canis latrans*), and bobcat (*Felis rufus*), have also been noted in the region. Elk, bison, cougar, black bear, and wolves no longer inhabit the Western Highland Rim (Kresja and Hargrave 2006:10).

In addition to mammals, numerous species of birds live in the region include various dabbling duck species (Anatinae), geese (Anserinae), swans (Cygninae), passerine (perching) birds, and non-passerine species like wild turkey (*Meleagris gallopavo*). Passenger pigeon (*Ectopistes migratorius*) were known from this area prior to its extinction in the late 19th to early 20th centuries (Peterson 1980). The grasslands are home to many bird species (Giocomo et al. 2008:111) that include the Henlow's sparrow (*Ammo-dramus henslowii*), field sparrow (*Spizella pusilla*), grasshopper sparrow (*A. savannarum*), and the eastern meadowlark (*Sturnella magna*). Grass species include little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), switch grass (*Panicum virgatum*), Indian grass (*Sorghastrum nutans*), and broom sedge (*Andropogon virginicus*) (Giocomo et al. 2008:112).

Various fish species were also present and formed an important part of both precontact diets. They included bass, crappie, bluegill, sunfishes, several varieties of large catfish, some smaller catfish (e.g., black, and yellow bullhead), small mouth buffalo, white sucker, quillback or carp sucker, longnose gar, spotted gar, and bowfin (Walden 1964). Additionally, the area housed various turtles, reptiles, amphibians, and freshwater mussels.

The Early Archaic Period 11,500-8900 cal yr B.P.

The Early Archaic period, circa, 11,500-8900 cal yr B.P., occurred at the conclusion of the Paleoindian period (circa 11,500 cal yr B.P.) and ended with the onset of the Middle Archaic period (8900 cal yr B.P.) (dates are taken from Anderson and Sassaman 2012). Most information

concerning the Early Archaic lifeways of hunter-gatherers has come from rock shelters and deeply stratified archaeological sites on floodplains because open air sites left sparse archaeological signatures (artifact scatters) across the eastern United States. Two major changes coincided with the inception of the Early Archaic period, the extinction of the megafauna and environmental changes linked to the Younger Dryas. The different landscape that emerged during the Younger Dryas required Early Archaic hunter-gatherers to use smaller corner notched projectile point types (Anderson and Sassaman 2012). Although Early Archaic groups remained small, mobile, egalitarian hunter-gatherers, the increase in sites from this time period point to either population growth or groups staying in locations for longer periods of time. Community organization is believed to have been organized through a residential pattern (Hollenbach 2009). A residential pattern is when hunter-gatherer-groups established themselves at a resource patch and made daily trips back and forth from the residential base to the resource (Binford 1980:5). While most southeastern Early Archaic hunter-gatherers practiced a hunting and gathering lifestyle organized around a residential pattern, there were areas (like northeastern Arkansas and eastern Florida) where the presence of oversized Dalton projectile points and the use of cemeteries for human burials suggest that at least some hunter-gatherers organized themselves in a different manner than a pure egalitarian structure (Anderson 2014:920; Doran 2002; Walthall and Koldehof 1998). The timing and appearance of these regional differences is not well understood, but Anderson (2014:921) believes that oversized Dalton projectile points and human cemeteries demarcated territorial areas and boundaries.

In northeast Arkansas, along the central Mississippi River Valley, hunter-gatherers manufactured oversized Dalton projectile points (Walthall and Koldehof 1998). The geographical distribution of oversized Dalton projectile points was limited to a regional footprint described by Sassaman

(2010:99) as “thirty locations along a seven-hundred-kilometer stretch of the central Mississippi Valley.” The Dalton projectile point was a side notched projectile point that occurred at the end of the Paleoindian period and disappeared during the beginning of the Early Archaic dating to 10,000 to 7500 cal B.P. (Anderson 2014:922). Walthall and Koldehof (1998) point to the manufacture of oversized Dalton projectile points and their association with cemeteries as evidence that some hunter-gatherers developed a social organization beyond a strict egalitarian community. Anderson (2002, 2004) also described this distribution of oversize Dalton project points as possibly reflecting a tribal level organization.

Another example that is suggestive of Early Archaic social complexity is the human burials placed in ponds with oxygen-free environments. The Windover site (8BR246) near Titusville Florida, with 168 interred individuals, is one of the few examples of Early Archaic pond/water burial sites (Doran 2002). The Windover interments occurred sometime from 8000 to 7000 cal yr B.P and were sunk 1.8 meters into the water and held in place using wooden stakes. Isotopic studies indicated a subsistence geared toward aquatic resources like catfish, ducks, and turtles with a limited consumption of terrestrial animals like white-tailed deer and rabbits (Tuross et al. 1994:295). The Windover community most likely practiced a seasonal hunting and gathering round with base camps located at some distance from the burial pond. (Doran 2002).

The Early Archaic Period Organization In the Mid-South

A picture of Early Archaic social and subsistence organization for the Mid-South can be garnered from a landscape study conducted by Jefferies et al. (2005) of Archaic sites along Cypress Creek, a waterway situated in south-western Kentucky just northwest of the dissertation study area. Cypress Creek is a tributary of the Green River, a river valley known for numerous shell mound sites that date primarily to the Late Archaic period (Jefferies et al. 2005:9). The

fieldwork and investigation integrated data from previously excavated shell mound and upland sites, along with contemporary data analyzed from 40 newly identified upland (non-shell mound) sites (Jefferies et al. 2005).

The spatial data and low density of artifacts recovered from Jefferies et al. (2005) study area point to an Early Archaic settlement pattern of small, highly mobile hunter-gatherers that preferred resource rich niches on creeks, rivers, and swamps (Jefferies 2005:15). According to Jefferies et al. (2005), this residential pattern continued throughout the Early Archaic, transitioning to a more logistical organization by the late Middle Archaic period where hunter-gatherers shifted to groups that stayed for longer periods at base camps.

The Early Archaic Period in the Dissertation Study Area

The Early Archaic period in the lower Tennessee River Valley most likely mirrored the residential pattern of small mobile groups of hunter-gatherers that was identified by Jefferies et al. (2005) along Cypress Creek in Kentucky. The earliest occupations at the sites of Big Sandy (40Hy18) and Eva (40Bn12) produced evidence for ephemeral occupations by Early Archaic hunter-gatherers (Bissett 2014). Radiocarbon dates produced by Bissett (2014) at both sites failed to yield any Early Archaic dates, however the recovery of Early Archaic projectile point types from the earliest occupations at Big Sandy and Eva point to the presence of Early Archaic hunter-gatherers. A total of 25 Early Archaic projectile point types were recovered from the Big Sandy with the majority of projectile points of the Kirk variety (n=15). Smaller counts that date to the of Early Archaic period at Big Sandy included Dalton (n=1), Decatur (n=1), MacCorkle (n=3), St. Albans (n=1), and Hardin Barbed (n=3) points (Lewis and Kneberg 1959).

The Eva Site (40Bn12) also produced a small number of Kirk and hafted projectile points from Stratum V, the earliest occupation at the site (Bissett 2014). Stratum V was interpreted by Bissett

(2014: 242) as a period when hunter-gatherers utilized the site on a periodic basis. The infrequent utilization in Stratum V was determined by the low density of cooking features (n=3) and the low count of tools, especially when compared to the preceding Middle Archaic strata.

Additionally, the concentration of animal bone refuse in three distinct activity areas at Stratum V, also points to short-term occupations early in the site history at Eva (Bissett 2014: 242).

While Early Archaic hunter-gatherers utilized open-air locations near rivers and streams, they also incorporated caves and rock shelters in their site locations (Hollenbach 2009; Walthall 1998). Evidence for rock shelter and cave use appeared in the Eastern United States around 11,500 cal yr B.P., as hunter-gatherers integrated these places as fixed locations in their seasonal resource foraging patterns (Walthall 1998:235). The deeply stratified deposits at cave and rock shelter sites like Dust Cave in Alabama, and Rodgers Cave and Graham Cave sites in Missouri, highlight the continuous seasonal, multi-generational use by Early Archaic hunter-gatherers (Walthall 1998:234). Walthall (1998:235) believes that Early Archaic hunter-gatherers used caves and rock shelters as hunting stations for small hunting and gathering groups and as locations where larger family groups established residential camps. Recent research suggests some of these sites were also used by specialized male and female task groups seasonally (Hollenbach 2009; Homsey-Messer 2015). The end of the Early Archaic period is characterized by a transition to logistically organized groups and changes in projectile point types as side and corner notched forms are replaced by square and contracting stemmed projectile points (Anderson and Sassaman 2012). It was also during the Middle Archaic period that the construction of monumentality appears in different locations across the southeastern United States (Gibson 1994, Sassaman and Randall 2012, Thompson 2007).

The Middle Archaic Period 8900-5800 cal yr B.P.

The Middle Archaic period is a 3000 year period that lasted from 8000–5000 radiocarbon years before present, or 8900–5800 cal yr B.P. (Anderson et al. 2007: 457; Anderson and Sassaman 2012:66). The Middle Archaic period is distinguished from the preceding Early Archaic period by changes in projectile point styles, the construction of shell and earthen mounds, the use of atlatl weights, and an increase in interpersonal violence (Anderson et al. 2007:459; Sassaman 2010:23). Throughout the Mid-South, square and contracting stemmed projectile points, like Kirk Stemmed, Morrow Mountain I and Morrow Mountain II, Stanley Stemmed, and Eva, replaced the Early Archaic side notched and corner notched point types (Anderson and Cook 2017:276; Anderson and Sassaman 2004:94; 2012:73–74).

Technological changes were accompanied by transitions from an Early Archaic residential pattern to a more logistical pattern. The move to logistical organizations is a key attribute that defines Middle Archaic hunter-gatherers and is believed to have occurred throughout the Southeast and Mid-South. In addition to longer stays at open-air sites, hunter-gatherer use of rock shelters and caves continued; however Middle Archaic hunter-gatherers tended to stay longer at these locations as well (Walthall 1998).

While there was some homogeneity in the egalitarian social organizations across the Early Archaic landscape, some Middle Archaic hunter-gatherer groups moved beyond egalitarian social structures and are thought to have developed more complex hierarchical social organizations that included tribal level societies (Anderson 2002, 2004; Anderson and Sassaman 2004: 95). Socially hierarchical, possibly transegalitarian communities are thought to have emerged at several places including the Lower Mississippi Valley, the St. Johns River Valley in Florida, and in the Tennessee River Valley of Alabama and Tennessee. Hunter-gatherers at these locations constructed earthen and shell mounds,

evidence that labor and social consciousness was organized differently from the preceding Early Archaic period.

Reduced mobility tied groups to certain territories, although these territories were most likely fluid with waxing and waning boundaries (Anderson and Sassaman 2004: 95). Aquatic and riverine resources became important along coastal areas and within the major river valleys and provided a stable food base that allowed diminished mobility and the ability to organize and feed labor for mound construction (Anderson and Sassaman 2004: 95).

While hints of social inequality are present during the Middle Archaic period, the form that this inequality took is not well understood. While the construction of shell mounds and earthen mounds indicate social changes, Middle Archaic mortuary practices have provided evidence for only “achieved status; there is no evidence for heredity inequality” (Anderson and Sassaman 2004:100).

The Middle Archaic Period in the Lower Tennessee River Valley

Middle Archaic hunter-gatherers that lived in the lower Tennessee River Valley are thought to have practiced a logistical organization utilizing floodplain and upland environments through a series of hunting camps, extraction locales, base camps and also shell mound sites (Weitzel 2019). Shell mound sites were initially interpreted within settlement-subsistence, resource first or Optimal Foraging Models, where the consumption of fresh water shellfish were a response to declining white-tailed deer populations (Lewis and Lewis 1961). In his scenario, the decrease in a high rank resource like white-tailed deer would have prompted hunter-gatherers to focus on lower ranked resources that included fresh water shellfish. Miller (2014), using the diet-breadth model supports this idea of high ranked resource decline, and suggests that in some places white-tailed deer populations deteriorated in their overall availability. Weitzel (2019: 199) recognized two primary resource niches available in the Tennessee River Valley: wetland, and upland.

Wetland niches encompassed floodplains, and wetland areas that supported populations of aquatic and semi aquatic species of birds, fish, and shellfish. Uplands or terrestrial niches were defined as any non-wetland niche and included forest species like white-tailed deer, squirrels, raccoons, and rabbits. Using abundance indexes for wetland and terrestrial species, Weitzel (2019:200) plotted species stability patterns through the Archaic period. His abundance indexes reinforced Miller (2014), indicating that in some areas high ranked resources declined, in this case, the decline occurred in the wetland resource niches. However, Weitzel (2019:200) showed that while wetland environments were becoming stressed, high ranked resources (white-tailed deer) continued to be available in the terrestrial environments.

Sedentary communities may have existed, and Lewis and Lewis (1961) believed that the shell mound sites of Eva and Big Sandy were occupied year round. Miller (2014) points to an increase in population during the Middle Archaic period as one restrictive force that impacted overall mobility for some groups. Hunter-gatherers living in bounded territories would have transitioned to lower ranked species as their ability to procure higher ranked resources diminished.

While optimal foraging and diet breadth have been used to explain the utilization of lower ranked species (Lewis and Lewis 1961), social organization was not addressed specifically by these studies. Social hierarchy was addressed by Magennis (1977) who examined burial goods from Middle and Late Archaic deposits at sites of Eva (40Bn12) and Cherry (40Bn74) to determine if burial items could be correlated with social status and a ranked society. Her study cross-tabulated burial attributes that factored together burial orientation, sex, burial treatment, disposal facility, and grave goods. Magennis (1977: 44-45) divided grave goods into four categories that included 1) hunting, plant, and food acquisition, 2) domestic, 3) exotic trade goods, and 4) ornamental and entertainment. Hunting and plant and food acquisition consisted of

tools like hoes, projectile points, hooks; domestic grave goods consisted of bone tools, bone awls while exotic trade goods included copper and worked shell gorgets. Magennis (1977:134) believes that the distribution of grave goods at both the Eva and Cherry sites represented an egalitarian, unranked society based on the presence of utilitarian offerings and the equal distribution of grave goods for males and females.

However, she identified differences in the burial traditions at the two sites. Humans at the Eva site were randomly buried throughout the shell mound while humans at the Cherry site were placed in a distinct area separate from residential area described by Magennis (1977:136) as a “cemetery.” Other dissimilarities between burial the Eva and Cherry sites were the appearance of cremation burials at the Cherry site, an increase in ceremonial burial goods at the Cherry site, and a higher percentage of dogs buried with humans at the Cherry site (Magennis 1977:80). Although Magennis (1977:60) recognized that four humans were buried with dogs, dogs were not considered an exotic burial item, and the presence of dogs was not incorporated into the discussion concerning social organization and burial practices.

Claassen (2010, 2014) diverges from optimal foraging models, and views Middle and Late Archaic shell sites through historical based models. Claassen’s (2010, 2014) approach is discussed in more detail in subsequent sections, but a brief summary is presented here. Claassen (2010, 2014) views the Archaic landscape as organized with a ceremonial framework. As hunter-gatherers transitioned to logistical patterns across the landscape, these groups established ceremonial sites, or nodes, to manage the settlement and procurement system. Shell mounds and cave sites were incorporated into the landscape as visible representations of the ceremonial organization (Claassen 2010, 2014).

The Shell Mound Archaic Culture of the Lower Tennessee River Valley

The Shell Mound Archaic Culture in the lower Tennessee River Valley of western Tennessee consisted of a collection of Middle and Late Archaic shell mound and shell bearing sites (Claassen 2010). It is one of the best examined and known Shell Mound Archaic regions due to initial visits by C.B. Moore in the early 20th century and from Depression-era excavations and subsequent publications during the 1940s into the 1960s (see Bissett 2014). Two sites, Eva and Big Sandy, received a wide audience based on the publications by Lewis and Kneberg (1959), Lewis and Lewis (1961), and by David Osborne (1942). Lewis and Kneberg (1959) used the lower Tennessee River Valley to develop their cultural history for the region, a system that remains important to modern archaeological analysis and investigation.

Temporal Periods and Cultural Phases

Lewis and Kneberg (1959) developed an initial scheme to explain the Archaic diversity found in the lower Tennessee River Valley. In 2014, Bissett (2014) proposed a refinement of the Middle and Late Archaic occupations at these sites based on new radiocarbon dates produced from 2010 to 2014. The designations of the lower Tennessee River Valley into cultural phases and periods by Lewis and Kneberg (1959) and by Bissett (2014) are presented in the below discussion. The culture phase scheme provided by Lewis and Kneberg (1959) still provides relevant information, while the three period classification offered by Bissett (2014) provides much needed contemporary research and temporal refinement based on new C-14 dating.

Original Cultural Phases (Lewis and Kneberg 1959)

Lewis and Kneberg (1959) formulated Archaic cultural phases from the excavations conducted at the Eva, Big Sandy, Cherry, Kays Landing, Oak View, Ledbetter, West Cuba, and McDaniel sites. They thought that shell mound cultures in the lower Tennessee River Valley represented

culturally different groups from the other Shell Mound Archaic cultures found in other regions of the Mid-South.

Based on these differences, Lewis and Kneberg (1959) identified two cultural traditions the Eastern Tradition, and the Midcontinent Tradition. The Eastern Tradition was primarily confined to the Middle Archaic period while the Midcontinent Tradition was associated with Late Archaic occupations. Lewis and Kneberg (1959:173) linked each new cultural phase in both the Eastern and Midcontinent Traditions to changing environmental conditions. The exception was the Three Mile Phase which was identified as a unique shell mounding cultural deposit that they believed to be only found in Stratum II at the Eva site.

The Eastern Tradition consisted of the three cultural phases, the Eva phase, Three Mile Phase, and the Big Sandy Phase, while the Midcontinent Tradition consisted of the Kays Phase, the Weldon Phase, and the Ledbetter Phase (Lewis and Kneberg 1959). The Eastern Tradition

The Eva Phase

The Eva Phase represents the earliest occupation at the Eva and Big Sandy sites and was described by Lewis and Kneberg (1959) as a sedentary hunter-gatherer community that existed from 5000 B.C. until approximately 3500 B.C. The artifact assemblage associated with the Eva Phase included straight stemmed, side-notched points, a basal notched Eva type projectile point, antler projectile points, atlatl weights, uniface scrapers, bone awls, and bone fish hooks. Human interments were placed in pits and were fully flexed while dogs were buried in single burials (Lewis and Kneberg 1959:164).

The Three Mile Phase

The next phase was designated as the Three Mile Phase circa 3500 B.C. (Lewis and Kneberg 1959:164–165). During the Three Mile Phase, hunter-gatherers began to accumulate freshwater

shells giving the site its shell mound appearance. Lewis and Kneberg (1959: 164) only attributed the Three Mile Phase to the Eva site, Stratum II. In addition to the creation of the shell mound, other artifacts include straight stemmed projectile points, the use of winged, prismoidal, and cylindrical bannerstones, the manufacture of a new type of antler atlatl hook, and copper beads.

The Big Sandy Phase

The next phase, the Big Sandy Phase, covers the late Middle Archaic to Late Archaic transition, and the Late Archaic to Early Woodland transition. The Big Sandy phase was characterized by a decline in shellfish, a situation that Lewis and Kneberg (1959:165) believed to have resulted from the widening of waterways and increased siltation. As shoals disappeared and rivers infilled with washed in silt, shellfish communities declined and were not available to hunter-gatherers as a food source.

In addition to an end in shellfish accumulation, new artifacts appeared for the first time and included chipped stone adzes, stone gravers, and stemmed and side notched scrapers. Three new projectile points were identified by Lewis and Kneberg (1959: 169) and included the Frazier thinned base point, the Adena point, and the Ledbetter asymmetrical projectile point. Cooking pits and storage pits also appear during this phase.

The Mid-Continent Tradition

The Mid-Continent Tradition was dated by Lewis and Kneberg (1959) to the Late Archaic period and included the Kays Phase, the Weldon Phase, and the Ledbetter Phase (**Figure 6**). Several new cultural attributes arrive during the Mid-Continent Tradition that are relevant to understanding the human-animal relationships in the lower Tennessee River Valley. Lewis and Kneberg (1959) made statements that suggested that some of the hunter-gatherers in the lower Tennessee River Valley migrated to the area circa 2800 B.C. This migration was tied to the Kays

Climatic Period	Approximate Dating	Midcontinent Tradition		Eastern Tradition		
		Tennessee	Kentucky	Tennessee	Alabama	Georgia
Second Thermal Maximum	500			?		
	-			↑		
Medithermal	0	?	?	Ledbetter Phase		
	-	↑	↑	↑		
	-	Big Sandy Phase	Phase ? { Parrish	↑		
	1000	— ? —	Ward	— ? —	?	?
Altiethermal	-	↑	↑	Weldon Phase		
	-			↑		
	2000	Three Mile Phase	— ? —	— ? —		
	-	↑	↑	↑	Lauderdale Phase	Stallings Island Phase
	-		Indian Knoll Phase	Kays Phase		
	3000	↑	↑	↑		
	-	— ? —		?	?	?
Anathermal	4000	↑	?			
	-					
	-	Eva Phase				
	5000	↑				
	-					
	6000					

Figure 6. The Cultural Phases in the Mid-South as proposed by Lewis and Kneberg (1959:181).

Landing site where individuals exhibited a brachycranial skull type compared to a dolichocephalic or mesocranial skull type found with individuals from the Eastern Tradition. Individuals with a brachycranial skull type have a short and/or broad shaped skull while individuals with a mesocranial skull have a skull that has medium proportions.

Another important contrast between the Eastern Tradition and the Mid-Continent Tradition was a change in the human-animal relationships, especially the shift in the treatment of domesticated dogs. Dogs in the Eastern Tradition were buried at certain times (Stratum II at the Eva site) while dog burial declines and eventually disappeared during the Mid-Continent tradition. Lewis and Kneberg (1959:169) noted that disarticulated dog bones were present in the midden deposits at some Mid-Continent sites, evidence that is suggestive that some hunter-gatherer groups did not follow a strict taboo on dog consumption.

Three Period Sequence, 8900 to 3600 cal yr B.P. (Bissett 2014)

Bissett (2014) reviewed the original site notes from the lower Tennessee River Valley sites of Eva, Big Sandy, Cherry, Oak View, Ledbetter Landing and, with the generation of new radiocarbon dates from 2010 to 2014, developed a three period sequence (Periods I, II, and III) (**Table 6**) for the time from 8,900 to 3,600 cal B.P. (Bissett 2014:480). He proposed two Middle Archaic periods (8900 to 7600 cal yr B.P., and 7600 to 6300 cal. yr B.P.) and one Late Archaic period, 5600 to 3600 cal. yr B.P. Here we focus on Periods I and II, dating to the Middle Archaic, while Period III is examined later in this chapter in the discussion about the Late Archaic Period.

Period I, 8900–8200 cal yr B.P.

Period I, 8900–8200 cal B.P., was the earliest Middle Archaic occupations at the Eva and Big Sandy sites. Hunter-gatherers were at the Eva site circa 8900 to 8700 cal yr B.P., while hunter-

Table 6. Cultural Phases For The Lower Tennessee River Valley (Dates from Bissett 2014)

Period	Date	Description	Lewis and Kneberg (1959)	Articulated Dog ABGs?
Period III	5600-3600 cal yr B.P.	Late Middle to Late Archaic.	Big Sandy Phase	Yes, Dogs are now individual or private property
Period II	7600-6300 cal yr B.P.	Period of most intensive shell mounding at Eva.	Three Mile Phase	A cluster around 6300 yr cal B.P.
Period I	8900-8200 cal yr B.P.	Eva-Stratum V and Stratum IV Before Shell Mound at Eva. Most Intensive Occupation at Big Sandy Earliest Middle Archaic occupations at the Eva and Big Sandy sites.	Eva Phase	Possibly at Big Sandy but not at Eva

gatherers may have been at the Big Sandy site as well, but the radiocarbon dates point to a more intensive occupation at Big Sandy circa 8600–8200 cal yr B.P. The 8900-8700 cal yr B.P. period at Eva (Stratum V) coincided with a heavy density of animal bones, distributed in clusters across the site. The animal bone distribution has been interpreted as an intensive use of the site over a short period of time through successive periods of ephemeral, but intensive, site habitation. By 8600-8200 cal yr B.P., hunter-gatherers began to collect and deposit shellfish at the Eva and Big Sandy sites, although this accumulation of shell was different at each site. Hunter-gatherers at the Big Sandy site began to accumulate shells around 8600 cal yr B.P and terminated around 8200 cal yr B.P. At the Big Sandy site, occupants began to deposit shell in the area downslope from the ridge top creating a shell deposit that was accompanied by a shift in burial patterns. Humans and dogs were now buried in the shell deposit instead of the shell-free ridge top. At the Eva site, Stratum IV represents the start of shellfish accumulation from 8400 to 8200 cal yr B.P. Unlike the situation at the Big Sandy site, there is no evidence that shell-free and shell bearing areas were present, and the freshwater shell was deposited throughout Stratum IV. Stratum IV at Eva had a high density of animal bones (approximately 14,000) suggesting a continuous, intensive habitation during this time. After 8200 cal yr B.P., the accumulation of freshwater shells disappear at the Eva and Big Sandy sites. The intensive occupation at Eva, Stratum IV, is discontinued and replaced by a substantial reduction in use with almost no animal bones or artifacts (identified as Stratum III) , although 14 human interments were present at Stratum III. A similar circumstance occurred at the Big Sandy as the site was most likely abandoned or used minimally by hunter-gatherers. Post 8200 cal yr B.P. is interpreted by Bissett (2014:486) as a time when Eva and Big Sandy were minimally used, especially compared to pre 8200 cal yr B.P.

occupations. A period of 600 years elapsed before hunter-gatherers once again made the Eva site a focus of occupation and use, including a return to freshwater shell accumulation.

Period II, 7600-6300 cal yr B.P.

Period II, 7600-6300 cal B.P., represents the period of most intensive shell mounding /accumulation at the Eva site. Hunter-gatherers returned to the site beginning circa 7600 cal yr B.P. and began to accumulate shell in large amounts over the next 1200 years. During this 1200 year period, hunter-gatherers buried 109 people and fifteen dogs within the accumulated shell deposit. In contrast to Lewis and Kneberg (1959), Bissett (2014:487) believes that Eva, Stratum II, was not a period of intensive habitation or use. Hunter-gatherers were at the Big Sandy site circa 7400 to 7100 cal yr B.P., although the occupation at the site is poorly understood. The Cherry site was occupied although Bissett (2014:488) believes that most of the cultural features and burials are Late Archaic in origin. Unlike the intensive shell accumulation occurring at the Eva site, intensive shell collection was absent at the Big Sandy and Cherry sites.

Cave and Rock Shelter Use During the Middle Archaic Period

In addition to open-air, earthen, and shell mound sites, across the Mid-South, hunter-gatherers also occupied caves and rock shelters. Hunter-gatherer use of cave and rock shelter sites provide another site type to discuss changes that occurred during the Early Archaic to Middle Archaic transition, including the changes in social organization that were happening regionally by the Middle Archaic period. Archaeological excavations at major cave and rock shelter sites have been undertaken at places like Dust Cave, Russell Cave, Stanford Worley Bluff Shelter, and Modoc Rock Cave. Three of the cave sites, Dust Cave, Russell Cave, and Stanford Worley Bluff shelter are located in northern Alabama in the Tennessee River Valley while Modoc Rock shelter is located in southwestern Illinois. The presence of stratified occupational strata at these sites has allowed a snapshot of regional Middle

Archaic utilization. Homsey-Messer (2015:334) compared changes in cooking and storage features from Dust Cave, Russell Cave, Stanford Worley Bluff Shelter, and Modoc Rock Cave (**Figure 7**) to determine if Archaic hunter-gatherers shifted their economic focus during the Early to Middle Archaic transition. She believes that caves and rock shelters transitioned to specialized locations where mast collection and processing occurred during the late summer and fall. Three observable changes were identified following the end of the Early Archaic period. The specialization in mast preparation was interpreted as a shift from an Early Archaic residential organization (where hunter-gatherers spent limited time at these sites) to a more logistical organization into the Middle Archaic period where specialized work groups focused on one resource type and stayed at locations for longer periods. The economic specialization at cave and rock shelter sites has also been linked to the development of these places as culturally important places on the landscape. In addition to economic changes at Dust Cave, Russell Cave, Stanford Worley Bluff Shelter, and Modoc Rock Cave, Homsey-Messer (2015) believe that subsistence specialization was accompanied by social changes that included new ways to manage resource patches and an altered division of labor.

For Homsey-Messer (2015), the Early to Middle Archaic transition placed women in more active roles in the management of mast resource patches. Although not explicitly stated by Homsey-Messer (2015), the specialized subsistence mode was most likely comprehended within new mental frameworks. The Early Archaic natural landscape was conceptually reorganized and engendered through new social practices (human and dog burials) at newly ritualized locations. For Homsey-Messer (2015) caves and rock shelters became important to female working groups as visible, permanent landmarks, where ritual activities were performed to normalize these new ways of interpreting and exploiting the Middle Archaic landscapes. Some more recent interpretation s also see the uses of caves, besides being possible special ritual and burial sites,

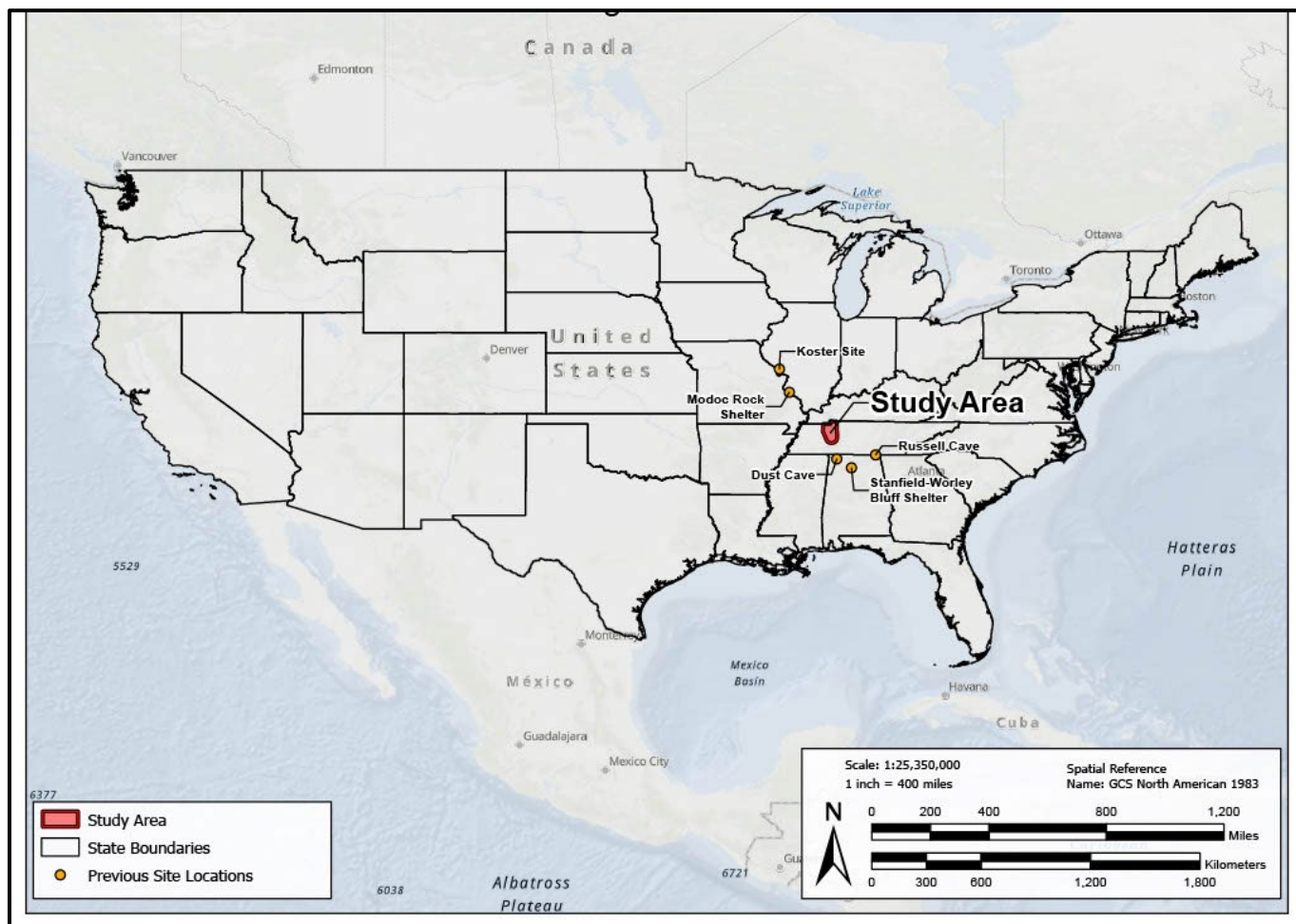


Figure 7. The Location of the Study Area with Major Cave Sites in the Eastern United States.

as female task group work areas themselves imbued with gender-linked ritual meaning (Homsey-Messer 2015). These people lived over a lot more of the landscape than just in caves and rockshelters at this time, of course, as the shell mound assemblages demonstrate. Claassen (2014) echoes this idea that caves and rock shelters helped to shape the Middle Archaic social landscape. Claassen (2014:175) believes that caves were places where Middle Archaic shamans concealed their rituals in the interior of caves, while rock shelters developed into ceremonial locations where certain social segments, like witches and shamans, were buried and/or became locations for child to adult transition or rite of passage rituals (Claassen 2014:22). Caves and rock shelters also became specialized burial locations for the burial of shamans and ritual specialists. For example, she links the unique burial practice at the Stanfield-Worley Shelter site as evidence for the burial of ritual specialists. Ten human interments at Stanfield-Worley were surrounded by three burials. One burial contained four Morrow Mountain projectile points, two blades, two triangular points, a knife, and an atlatl hook (Claassen 2014:120). Rock shelters may have functioned for different types of rituals than those conducted in caves. Claassen (2014:283) describes rock shelters as “... large crevices-entry points-for people to cross onto Otherworld and as exists for earth/water/game keep spirits.” Rituals in rock shelters may have included fertility rituals, medicine rites, and rebalancing rites where Indigenous communities sought to maintain balance between the Upper and Lower worlds (Claassen 2014:276).

The Late Archaic Period (5800–3200 cal yr B.P.)

Similar to transitional periods that occurred in the preceding Early and Middle Archaic periods, the Late Archaic period was a time of change as new cultural landscapes emerged, and hunter-gatherers created new social patterns different from their Middle Archaic ancestors (Sassaman 2010). The most visible shift was a hiatus in shell accumulation during the Middle Archaic/Late Archaic transition followed by the return of shell accumulation at new sites during the end of the

Late Archaic period (Bissett 2014; Lewis and Kneberg 1959). As the practice of accumulating shell faded, former shell bearing sites became shell-free sites, like Eva, while new, shell-free sites were founded in the river valleys (Lewis and Lewis 1961). The exception was Stratum II at the Kays Landing site. Stratum II was an artifact bearing deposit that Lewis and Kneberg (1959) explained as the work of new migrants to the area, specifically, hunter-gatherers from the Stallings culture, a shell mound culture that originated along the Savannah River, along the Georgia-South Carolina border. Around 2500 B.C., hunter-gatherers living along the Savannah River produced the Stallings Culture, which utilized and collected freshwater shellfish and were the first to manufacture fiber tempered pottery (Sassman 2001) While the identity of the hunter-gatherers that built the shell mound at the Kays Landing site, Stratum II, remains undetermined, the movement of different hunter-gatherers is inferred from the appearance of artifacts like Benton projectile points and soapstone.

The Benton Interaction Sphere was situated in an area that encompassed western Mississippi, northern Alabama, and central Tennessee and is demarcated by the presence of oversized Benton projectile points, Turkey tail projectile points, and caches of knives. Benton projectile points are thought to represent a trade or status item and dated circa 6500 to 6000 cal B.P. (Anderson and Cook 2017:277). Anderson (2002, 2004) believes that the earlier Dalton Complex of the Central Mississippi Valley and the Benton Interaction Sphere may have been similar forms of networking and interaction, possibly achieving a social organization at the tribal level.

Another area where a high level of social complexity may have occurred was in the Lower Mississippi Valley of northeastern, Louisiana where Late Archaic hunter-gatherers returned to mound building following an apparent hiatus of several hundred years, constructing the Poverty Point mound complex (Anderson and Cook 2017:280; Kidder 2012). Poverty Point has garnered

a lot of attention based on the scale of the mound complex and the conundrum over the function of the site at both local and regional scales (Sassaman 2004). Poverty Point consisted of a five square kilometer site constructed around 3600 to 3100 cal yr B.P. The site contained four earthen mounds and six nested earthen ridges resulting in the movement of approximately 1,000,000 cubic meters of soil (Sassaman 2004). Two mounds are thought to resemble bird effigies and are interpreted as ritual mounds (Ortmann and Kidder 2013:66).

Ortmann and Kidder (2013:73) believe that Mound A at Poverty Point was constructed in 90 days “rapidly in a single continuous effort”. The labor needed to construct Mound A within 90 work days is thought to have required up to 1000 to 3000 laborers. Additional, non-labor, individuals were probably present during mound construction episodes driving this number beyond 3000 individuals (Ortmann and Kidder 2013).

Similar to the preceding Middle Archaic period, the Late Archaic period (5800–3200 cal yr B.P.) is defined through changes in projectile point types, the appearance of pottery, changes in subsistence economies, and a restructuring of the cultural landscape (Anderson and Sassaman 2012:74–76). These changes occurred over a large geographical area prompting a diverse cultural landscape across the Mid-South and Southeast (Anderson and Sassaman 2012).

As discussed earlier, the initial cultural sequence for the lower Tennessee River Valley was proposed by Lewis and Kneberg (1959) while Bissett (2014) refined this and proposed a three period sequence. Lewis and Kneberg (1959) proposed three cultural phases for the Late Archaic, the Kays Phase, the Weldon Phase, and the Ledbetter Phase while Bissett (2014) described the Late Archaic in his Period III .

The Kays Phase

The Kays Phase occurred circa 2800 B.C., a time when water levels in the Tennessee River became lower than in preceding years (Lewis and Kneberg 1959:169). The artifact assemblage included straight stemmed points, stemmed scrapers, conoidal pestles, prismoidal atlatl weights, and turtle shell rattles. The people at the sites that comprised the Kays Phase did not bury domesticated dogs although disarticulated dog bones were reported from the site matrix. Lewis and Kneberg (1959:169) believed that the Kays Phase existed at the same time as the Three Mile Phase of the Eastern Tradition.

If true, then two types of human-animal relationships were practiced at the same time in the same region. Additionally, Lewis and Kneberg (1959:169) reported that individuals of the Kay Phase exhibited a different skeletal type than found with individuals of the Eastern Tradition.

Individuals from the Kay Phase exhibited a brachycranial skull type in contrast to those individuals from the Eastern Tradition that exhibited a more mesocranial skeletal type.

These differences in skull types prompted Lewis and Kneberg (1959:169) to compare the brachycranial skulls with individuals that lived along the Savannah River of the Stallings Island culture of the South Carolina-Georgia border. They found these skull types to be different: “The typical Kays individual was brachycranial and often orthognathous while in the Eva phase the typical individual was dolichocranial or mesocranial and shows alveolar prognathism” (Lewis and Kneberg 1959:169). Besides the Kays Landing site, the Stallings Culture of South Carolina and Georgia is the only documented areas where individuals have the brachycranial skull type (Lewis and Kneberg 1959:169).

The Weldon Phase

The Weldon Phase is associated with a three feet thick shell midden at Stratum II at the Kays site and dated by Lewis and Kneberg (1959:163) to 2100 B.C. to 1630 B.C. Stratum II contained fire pits, burials, and a high density of artifacts. Artifacts associated with the Weldon Phase included increased frequencies the Ledbetter stemmed point, a piece of copper, and fish hooks.

The Ledbetter Phase

The Ledbetter Phase was associated with Stratum III at the Kays site, and was also found at the Ledbetter site, the Thomas site, the Oak View site, and the West Cuba site (Lewis and Kneberg 1959:172). The Ledbetter phase was divided into two sub-phases: the early Ledbetter phase and the late Ledbetter phase. The early Ledbetter phase consisted of shell-free deposits along with Ledbetter asymmetrical projectile points and Adena projectile points. The late Ledbetter phase was recognized as different from the early Ledbetter phase based on the reappearance of fresh water shell accumulation and the appearance of stone gorgets.

Period III, 5600-3600 cal yr B.P. (Bissett 2014)

Period III, 5600 to 3600 cal B.P., represents the Late Archaic period and the Late Archaic-Early Woodland transition in the lower Tennessee River Valley in Bissett's (2014) sequence.

Archaeological sites included in Period III include Kays Landing, Oak View, McDaniel, and Ledbetter with habitation occurring over a 1600-year period. Hunter-gatherers established new sites. Interestingly, high density shell accumulation reappeared at the McDaniel, Ledbetter, and Oak View sites, sometime around 4800 to 4500 cal. yr B.P.(Bissett 2014:493). Prior to 4800 cal yr B.P., hunter-gatherers began to accumulate fresh water shells at the Kays Landing site (circa 5600 to 5100 cal. yr B.P.) described by Bissett (2014:490) as a site where domestic activities

were not apparent. After 5100 cal. yr B.P., the Kays Landing site was abandoned until a relocation back to the site location circa 4800 to 4700 cal. yr B.P.

The interval from circa 4800 to 4500 cal. yr B.P. witnessed habitation at the Kays Landing, McDaniel, Ledbetter, and Oakview sites. These sites produced evidence that hunter-gatherers were constructing some type of structures accompanied by a high density of domestic features for food storage and food preparation.

The Shell Mound Archaic: Regional Differences

The Shell Mound Archaic is an umbrella term used to describe hunter-gatherer cultures that deposited freshwater mussel shells at Middle and Late Archaic period archaeological sites (Randall 2015:27). Although shellfish were available throughout the eastern United States (Claassen 2010), shell bearing sites appeared at specific locations across the Southeast and Mid-South that included the St. Johns River Valley of Florida, the Tennessee River Valley of northern Alabama, the Georgia and Carolina coastal environments, Western Tennessee, and the Green River Valley of southwestern Kentucky (Lewis and Lewis 1961, Randall 2015:26, Webb 1974). The density of freshwater mussel shells varied between individual sites through time and by geographic location. (Randall 2015). Claassen (2010) narrows the definition for a Shell Mound Archaic site to those shell bearing sites that contained human burials. Although not universally accepted, Claassen's (2010) definition does highlight the diversity found throughout the Shell Mound Archaic and the difficulty in framing these sites in a single common narrative. However, the diversity in regional Shell Mound Archaic cultures affords an opportunity to compare and contrast different hunter-gatherers across the Archaic landscape. The geographical span of the Shell Mound Archaic and the noticeable regional cultural diversity has resulted in different

theoretical models, tied to distinctive regional Shell Mound Cultures (Claassen 2010, Randall 2015).

Several distinctive cultural practices are associated with regional shell mound groups that are relevant to the current study. Architectural styles are the most observable difference. Hunter-gatherers in the St. Johns River Valley (Florida) built circle, semi-circle, and U-shaped shell configurations (Sassaman and Randall 2012) while hunter-gatherers in the Tennessee River and Green River Valleys built more mound-like shapes (Claassen 2010, Webb 1974). More importantly, the different types of public performances (feasting vs animal burial) that were conducted at regional shell mound sites draw attention to different types of regional human-animal relationships practiced during the Archaic (see Hayden 2003:461).

One variation in regional human-animal relationships was in the difference in how groups enacted public performances. Lower Tennessee River Valley groups incorporated human and animal burials in their public performances (Lewis and Lewis 1961) while hunter-gatherers living in the St. Johns River Valley held feasting events, but these were absent of animal burials (Sassaman and Randall 2012). Below is a discussion that briefly highlights the diversity in regional Shell Mound Archaic Cultures.

The St. Johns River Valley

The St. Johns River Valley and its tributaries are located in eastern Florida. These Archaic period shell configurations and shell mound sites provide valuable information on hunter-gatherer lifeways (Sassaman and Randall 2012:35). Hunter-gatherers in the St. Johns River Valley constructed different shaped shell configurations that included linear shell ridges, shell mounds, and U shaped shell deposits (Sassaman and Randall 2012:35). The shell mound cultures of the St. Johns River Valley provide an effective case study for the Shell Mound Archaic in general,

but more importantly as a case study that can be compared to the shell mound cultures of the lower Tennessee River Valley. The value of contemporary archaeological research in the St. Johns River Valley is the documentation there that shell mounds were socialized locations where hunter-gatherers managed social change and stability, and not just areas of shell processing and meal refuse (Sassaman and Randall 2012:35).

As Sassman and Randall (2012) show in their excavations, feasting was an important part of the hunter-gatherer socialization process. However, this process in both the Mount Taylor and Orange periods, did not employ public performances that included animal burial, in contrast to animal burials as public performance in the lower Tennessee River Valley.

The environmental/subsistence models, or resource first models, (Sassaman and Randall 2012), which were initially used to describe shell sites in the St. Johns River Valley are similar to those initial models used to describe shell mound sites in the lower Tennessee River Valley (Lewis and Lewis 1961). As changes in the hydrology of the St. Johns River occurred circa 7,000 to 6,000 cal yr B.P., shellfish communities thrived and became available for hunter-gatherer consumption (Randall 2013:196). As shellfish communities expanded, hunter-gatherers collected, processed, and consumed these food items in larger numbers, leaving the shells as food debris mounds (Randall 2015:22). The depth, shape, and continued use of these shell deposits were determined by the availability of shellfish at each location (Randall 2013:193).

In contrast to a pure environment explanation, Sassaman and Randall (2012) and Randall (2013, 2015) interpreted their excavations at St. Johns River Valley sites through a historical lens, stating “the shell mounds of the St. Johns River Basin offer some of the best evidence for interpreting mounds as historical practice because they span centuries, if not millennia, and thus register, in stratified fashion, many depositional acts” (Sassaman and Randall 2012:59). Their

approach is non-evolutionary, positioning shell sites in a historic context where Archaic hunter-gatherers produced and reproduced social relationships (Sassaman and Randall 2010:11). Social relationships were maintained through the continued socializing and feasting at shell sites, where the building and repurposing of shell mound sites represent a three thousand year record of hunter-gatherer socialization, social change, and social transition (Sassaman and Randall 2010:11; Randall 2011:141).

Shell sites (at least in the St. John River Valley), were places where culturally and ideologically diverse groups came to negotiate a common belief system that acted as the glue that link multi-cultural and/or diverse ethnic groups within an accepted single cosmology (Sassaman and Randall 2010:11). Randall (2011:124) believes that this process invented social histories which are visible in the archaeological record as “depositional narratives.” These “depositional narratives” are visible through stratigraphic changes at shell sites described by Randall (2011:132) as, “Such places were thus imbued with a new kind of history that was reproduced through depositional acts and social bodies of practitioners.”

The “depositional narratives” are apparent by the temporal construction of different forms of shell sites; linear shell ridges and U-shaped shell mounds/rings. Linear shell ridges were constructed during the Mount Taylor period (circa 6000–4200 rcbp) while U-shaped shell mounds appeared circa 4100-3600 radio carbon years before present (rcbp) during the Orange period. After 4100 rcbp, the construction of shell sites fade with shell ring construction ending circa 3600 rcbp (Claassen 2014:45).

The spatial distribution of linear shell ridges influenced their social function (Sassaman and Randall 2012:62). Linear shell ridges built in areas impacted by frequent flooding served as ceremonial

places, while sites situated in areas with minimal to no flooding were primarily used for habitation (Sassaman and Randall 2012).

Sassaman and Randall (2012) identified an archaeological signature at linear shell ridges that they linked with the creation of “depositional narratives.” Shell sites that functioned as ceremonial places displayed a cultural stratigraphy or “depositional narrative” that involved three soil/cultural horizons, reflecting major periods of change. The different horizons represent the history of the social activities that homogenized regional hunter-gatherers into a common history. At least three distinct periods of shell ridge and shell mound construction have been offered for Mount Taylor shell ridges and mounds (Randall 2013:195). The laying down of these different stratigraphic zones at Mount Taylor sites has been interpreted as distinct cultural events or “depositional narratives” (Sassaman and Randall 2012). The stratigraphy of “depositional narratives” consisted of an initial soil layer, followed by a clean shell “capping event,” that was then followed by a series of repeated, frequent, occupational deposits of soil, animal bones, and shells. The lowermost occupation, comprised of debris from domestic activities, is interpreted as the preliminary stage when the shell mound served to bring culturally different communities together. Above the initial cultural layer, the “capping event” was laid down consisting primarily of clean shells with very little domestic debris. The “capping event” redirected the shell mound from a place for habitation to a new role where public performances and human burials (and funerals) were held by the community (Sassaman and Randall (2012).

The repurposing of shell ridges included the burial of humans in these clean shell deposits. Human burials could reach in the hundreds like the use of the Harris Creek site (8VO24) as burial location. The Harris Creek site measured five acres in size with shell deposits that reached 10 meters in height (Sassaman and Randall 2012:67). A total of 175 human burials were recovered from the

site, placed in constructed “platforms” (Sassaman and Randall 2012:67). These different periods are thought to represent a social and landscape reorganization. The first period began circa 7400–6350 cal yr B.P., the second period occurred circa 6350–5700 cal yr B.P., while the last period occurred circa 5700–4600 cal yr B.P. During the 7400–6350 cal yr B.P. interval, the hydrology of the area changed resulting in a wetter environment that flooded existed riverine based sites. The next period of intensive shell deposition occurred circa 6350–5700 cal yr B.P. and was where shell mounds were constructed at new locations and year around residence focused on these locations. The third period, circa 5700–4600 cal yr B.P., resulted in the Orange Culture. During this period new sites were established on smaller ridges along with shell free sites and mortuary sites that included conical mounds. Shell accumulation becomes focused at a select few sites where high densities of shell were concentrated by hunter-gatherers. These new sites were established around fresh-water springs and stream confluences (Randall 2013:211).

However, by the Orange period (circa 4100–3600 rcbp), a new third social order emerged characterized by changes in mound construction (a shift to sand and dirt mounds), a trend that began in the later years of the Mount Taylor period. During the Orange period, a physical separation of residential and sacred spaces was materialized by the presence of decorated pottery in a few locations, while plain pottery was found at habitation areas (Sassaman and Randall 2012).

The Green River Valley of Kentucky

The Green River Valley of western Kentucky is another regional manifestation of the Shell Mound Archaic and appeared primarily from 5700 to 2500 cal yr B.P. (Marquardt and Watson 2005:630; Webb 1974:115). The Green River Valley is located in western-central Kentucky and is drained by the Green River and its tributaries (Marquardt and Watson 2005.) The topography is characterized by a riverine environment that includes floodplains, natural levees, and oxbow

lakes (Webb 1974:116). Major sites in the region include the DeWeese site (Bt6), Haynes (Bt11), Bowles (Oh13), Chiggersville (Oh1), Indian Knoll (Oh 2), and the Read (Bt10) site (Marquardt and Watson 2005:635). The shell mounds found in the Green River Valley are mainly understood within an environmental/subsistence or resource first framework (Moore and Dekle 2010; Marquardt and Watson 2005; Webb 1974), although Claassen (2010) has offered a historical approach that places these shell mounds as part of a regional ceremonial complex. The discussion below summarizes both the environmental/subsistence model and the historical/ceremonial model.

Howard Winters (1974: xv) penned the term Indian Knoll Settlement System (also see Marquardt and Watson (2005:635) to describe the Archaic shell bearing sites in the Green River Valley. Winters (1974) published the data from the original excavation notes produced by William S. Webb during the excavation of the site in the 1940s. The Indian Knoll Settlement System included base camps, settlements, transient sites, and camp sites. The different site types were determined by the type of artifacts and activities practiced at each individual site. For example, woodworking was prevalent at settlements and base camps but absent at hunting camps (Winters 1974: xvii).

Based on the excavation at the Indian Knoll site, Winters (1974:x) stated that the Green River Valley shell sites were part of a complex “harvesting economy” that relied on a few animal and plant species for survival., i.e., a narrow spectrum economy. Winters (1974:x-xi) defined the Green River Valley shell sites as complex based on several attributes that included a division of labor into specific task groups (not based on age or gender), the ability to store surplus foodstuffs, trade goods from different regions, the occupation of locations for long periods of time, usually seasonally, violence, and ceremonial activities. Moore and Dekle (2010: 602)

reiterate Winter's (1974) idea of a narrow spectrum economy in the Green River Valley Archaic. They believe that during the late Middle Archaic and Late Archaic periods a narrow spectrum economy spread throughout the Mid-South as hunter-gatherers were able to focus on select resource types like shellfish and mast resources. The result was that hunter-gatherers spent more time at these resource locations, which had an impact on social organization. Shell mound sites became central points on the late Middle Archaic and Late Archaic landscape where hunter-gatherers aggregated to collect, procure, and consume large densities of shellfish. However, Green River Valley shell mounds were not the only resource aggregation locations; areas with large quantities of acorns were present were also likely places where groups of hunter-gatherers met to collect and process mast food sources.

Marquardt and Watson (2005:637) reexamined the Indian Knoll Settlement System idea and offered a different model for Archaic hunter-gatherer occupations in the Green River Valley. Instead of a settlement system with distinct site types, shell mounds formed as hunter-gatherers spent summer and fall seasons along the Green River before returning to upland sites during the winter and spring. While exotic trade goods, like copper and the bones of northern species like fishers and martens are present in the Green River Valley, their quantities are small and not indicative of a complex trade network centered in Western Kentucky Marquardt and Watson (2005:637). Claassen (2010:25) has expanded the idea of shell bearing sites as nodes for hunter-gatherer socialization in her research. While Claassen's (2010) model throws a wide net, bringing together the Shell Mound Archaic together under one explanatory model, her thoughts on the Green River Valley are discussed in greater detail later in the dissertation.

While Claassen (2010:25) recognizes the diversity of site types (shell free middens, lithic scatters, and rock shelters) that was needed to support the Archaic subsistence system, it was the

construction of shell heaps that represented the physical manifestations of the ceremonial and social cosmology. The ceremonial system was carried out through three types of shell deposits: 1) sites situated on small tributaries, 2) shell sites on bluff-tops, and 3) sites located on the banks of the Green River (Claassen 2010:31). This tripartite division is further categorized by three geographical clusters of shell bearing sites; a cluster of four sites in Henderson County, a cluster of two sites in McLean County, and eight sites constructed on the northern part of the Green River (Claassen 2010:40).

The fundamental tenant of Claassen's (2010) model is that a socially complicated landscape existed in the Green River Valley that necessitated activities that brought people together and in the process created a unified social system. While researchers explain the Middle and Late Archaic subsistence economy as a logistical pattern (after Binford 1980), Claassen (2010) organizes the social/ceremonial landscape along similar lines.

Different shell bearing sites represented different social functions that supported the entire social/ceremonial system. For example, the bluff-top sites could have functioned to prepare the deceased for burials before being transferred to the shell bearing sites located on the Green River. Location was also important. Bluff-top sites required more labor to construct because more labor was needed to move shells the distances between river and bluff top. If shell bearing sites in the Green River Valley were just part of seasonal movements to exploit available resources, then there was no reason for hunter-gatherers to invest the labor in the transport of shells to bluff tops (Claassen (2010:25).

The Middle Cumberland River Valley

The Middle Cumberland River Valley is located in middle Tennessee stretching from the confluence with the Obey River to the mouth of the Harpeth River (Deter-Wolf and Peres

2019:3). Archaic shell mounds in the Middle Cumberland River have been known to archaeologists for almost two centuries, although systematic investigation has lagged behind other regions in the Shell Mound Archaic (Deter-Wolf and Straub 2019:23). Recent fieldwork and research on shell bearing sites in the Middle Cumberland River Valley offer several possible connective points to shell mound sites in the lower Tennessee River Valley.

Limited archaeological investigations transpired in the Middle Cumberland River Valley during the 1970s and 1980s (Deter-Wolf and Straub 2019:31). In 2010, a flood event occurred along the Cumberland River near Nashville that resulted in heavy river bank erosion that exposed shell artifact bearing sites. In response to the flood event, the Tennessee Division of Archaeology (TDOA) conducted an archaeological survey to assess the damage to these sites (Deter-Wolf and Straub 2019:31).

A team of archaeologists, supported by the TDOA and led by Aaron Deter-Wolf and Tanya M. Peres (2019), and a second team, led by David Anderson and Shane Miller, conducted surveys of the impacted area, documented sites and conducted limited investigations at select sites. Below is a brief discussion of two Archaic bearing sites, 40DV7 and 40CH171, that had limited archaeological investigations. These excavations point to a long period of Native American use along the Cumberland River from the Late Paleoindian period into the Mississippian period. Peres et al. (2019:57) conducted limited archaeological investigations at Site 40DV7, a shell bearing site that was constructed at the “confluence of the Cumberland River and a fourth -order stream”. The site history (Peres et al. 2019:66) consisted of Archaic through Mississippian deposits with an uppermost shell free stratum that overlaid clusters of bivalve shells (Stratum III-Mississippian period) and thick layers of gastropod shells and minor amounts of bivalves

(Stratum IV-Archaic levels). The shell bearing Archaic levels were dated from 6860 to 4773 cal yr B.P. (Peres et al. 2019:63).

A small sample of mammal and plant remains was collected from the site and analyzed, offering a limited view into the subsistence economy. Fresh water gastropods and bivalves comprised the majority of food items, but mammals, fish, turkeys, and reptile bones were also present in the site matrix. Mammal bones included white-tailed deer (197 NISP; MNI 5) squirrels (NISP 23; MNI 2), beaver (NISP:4; MNI 1), and rabbits (NISP 5; MNI 2), while turkeys (NISP 45; MNI 1) represent the bird species. Reptiles included both terrestrial and aquatic species and included box turtle (NISP 47; MNI 1), while fish included drum (NISP 4; MNI 1) and catfish (NISP 16; MNI 3). Botanical remains were restricted to the remains of walnut and hickory nuts (Peres et al. 2019:71).

Site 40CH171 was a multi-component site with evidence for Late Paleoindian occupation through the Late Archaic period examined by Anderson and Miller in 2010 as part of field schools conducted by the University of Tennessee. An intact Middle Holocene shell deposit was identified (circa 6965 to 5895 cal yr B.P.) and probably represents the appearance of fresh water shellfish communities (Miller et al. 2019:83).

The investigations in the Middle Cumberland River Valley have produced a picture of subsistence adaptation and not one of culture change. The increase in shell bearing deposits during the Middle Holocene is attributed to changes in the hydrology of the Cumberland River and not necessarily a product of cultural change (Miller et al. 2019:89; Bissett et al. 2019:92; Peres et al. 2019:71). In contrast to the lower Tennessee River Valley, Peres et al. (2019:71) point to a lack of, or small number of, human and dog burials. This absence of social activities meant that hunter-gatherers occupied sites in the Middle Cumberland River Valley to exploit

natural resources including shellfish and lithic resources (Miller et al. 2019:89; Bissett et al. 2019:92; Peres et al. 2019:71). Unlike the shell bearing sites in the St. Johns River Valley, living floors or distinct “depositional narratives” have yet to be identified in the Middle Cumberland River Valley (Peres et al. 2019).

Conceptual Models for the Shell Mound Archaic

The regional aspects of the Shell Mound Archaic attest to the diversity of these groups and the conceptual models researchers have developed to explain the creation of shell bearing sites among these groups. Conceptual models rely on hunter-gatherer intent; were shell bearing sites just remains of food/consumption debris, or did hunter-gatherers intentionally use shells to construct mounds (Claassen 2010, Colaninno 2012:358; Marquardt 2010; Randall 2015:25; Sassaman and Randall 2012:55). These two questions form the basis for explanatory models for the Shell Mound Archaic and two basic models have been proposed: the environmental/subsistence model (or the resource first model), and the human agency/historical model.

The resource first model is tied to environmental changes, particularly to the period when the climate underwent drier conditions during the Hypsithermal (Randall 2015). During this period, lowered river levels created ripples where freshwater mussel communities expanded their numbers and became available to Archaic hunter-gatherers. As accessibility increased, hunter-gatherers migrated to the formally vacant river valleys taking advantage of the new riverine resources. In places where large quantities of shellfish became available, hunter-gatherers spent longer periods of time and included these locations in their seasonal resource rounds. The agency/historical model considers environmental conditions, but frame shell mound construction as directed by social forces (Randall 2015).

Resource First Models

The “resource first model” (Randall 2015:25) or the “subsistence-centric” model (Sassaman and Randall 2012:55), or the “accumulation” model (Colaninno 2012:358; Marquardt 2010)

hypothesizes that hunter-gatherers utilized mussels as food sources. The shell mounds or shell heaps were the remains of the processing and consumption of shellfish. Once consumed, mussel shells were deposited in heaps as left-over meal debris. These communities were organized as egalitarian or as non-hierarchical groups that practiced a logistical pattern that included seasonal stays in different environmental zones like riverine and upland niches. These groups are not thought to have used a regional ceremonial/ritual structure to homogenize different groups of hunter-gatherers. The resource first model was championed by early researchers going back to the 19th century and early 20th century (Lewis and Lewis 1961) and continued to be the focus to explain site diversity by some researchers well into the 21st century (Randall 2015).

Marquardt (2010) perceives the construction of shell rings in southern Florida as different from just food debris depositions. He comprehends climate change through shifts in the hydrological history of Florida and proposes his “water capture” hypothesis for shell ring construction (Marquardt 2010: 564). During drier periods, hunter-gatherers built circular shell rings as “water tanks” to retain drinking water (Marquardt 2010:564). Marquardt (2010:567) states:

Of course, the choice of a particular response (a shell ring, a water court, a mound, or a canal) also changes the environment, which can lead to further adaptations and cultural adjustments. For example, a shell ring may be built to capture fresh water, but it may also convey other advantages: a better view, relief from flying insects, or a place of refuge during floods. It may even impress the neighbors, and lead to opportunities for aggrandizement or political or economic

advantage. But at its most basic level, if it conserved water for drinking and cooking during a dry climate episode, this in large part explains its form, composition, position on the landscape, and placement in time.

Agency/Historical Models

Several scholars (Claassen 2010; Sassaman 2010; Randall and Sassaman 2011) diverge from strict “resource first” and “subsistence-centric” models and instead described the Archaic shell mounds as physical human-caused creations used to transform cultural landscapes (Claassen 2010, 2014; Sassaman 2010; Randall and Sassaman 2011:11). Under this approach or model, shell mounds were social, used to build and maintain regional identities that were negotiated, memorized, and traditionalized through ceremonial and ritual practices at these locations. More importantly, shell mounds served to construct the social identities needed to operate and maintain cultural/social systems (Claassen 2010, 2014; Randall and Sassaman 2011:11).

Claassen (2010, 2014) developed a regional model to explain the construction of shell bearing sites. She believes that Early Archaic hunter-gatherers used natural spaces, like caves, to practice localized ritual ceremonies (Claassen 2014:21). The transition to the Middle Archaic period is not well understood but environmental changes, migration of new ethnic groups, population increases, and/or internal social pressures have been suggested as the reasons for the changes found in the Middle Archaic period (Sassaman 2010). This new landscape homogenized hunter-gatherer social systems into a larger, regional ideology, manifested through ritual performances conducted at shell mounds (Claassen 2014:21). Claassen (2014:26) supports her model through several important observations. First, the size of some Archaic shell mounds exceeded the volume and size of many earthen mounds, especially those constructed in the Middle and Late Archaic periods in the Lower Mississippi Valley. Secondly, at least some Archaic shell mounds

were not built haphazardly but were constructed following a spatial plan that may have incorporated topographic conditions. For example, her analysis of Green River Valley shell mound sites show that hunter-gatherers placed these shell mound sites in specific locations, a pattern that Claassen (2014:27) refers to as “ritual districts.”

Claassen (2010) has identified six ritual districts that include the Green River District, the central Ohio district, the upper Ohio River district, the Wabash/White River district, the Harpeth River district, the lower Tennessee River district. According to Claassen (2014:41):

The benefits and consequences of the ritualizing evident in the archaic would have included the following: ethnicity formation, alliance making; the spread of ideas, genes, objects, and technologies; the movement of raw materials: migration; expenditures of raw resources and human effort; the rise of “labor;” and violence.

The maintenance of these “ritual districts” would have required a social class to maintain the ideological system, maintain the physical shape and appearance of the ritualized shell mound, and direct labor to construct shell mounds. Arnold (1996:78) points to the control of labor and permanent leadership roles as attributes that define socially complex hunter-gatherers. Social complexity arises with the institutionalization of unequal social relationships and permanent leadership roles (Arnold 1996:79). This social class at Archaic shell mounds is referred to by Claassen (2014:29) as “cults or secret societies” and included shamans, ritual specialists, and priests, not to mention any family members associated with these individuals. Similar to Sassaman and Randall (2010), Claassen (2010, 2014) believes that shell mounds represent a transition in social relationships that demarcate regional changes in hunter-gatherer lifeways,

identified in archaeological terminology as the Early-Middle Archaic transition and the Middle-Late Archaic transition.

In her 2014 publication *Beliefs and Rituals in Archaic Eastern North America* (Claassen 2014), Claassen describes in detail numerous types of rites that could have been included in shell mound performances. She proposed that Archaic hunter-gatherers were concerned with fertility and societal renewal. Several types of Archaic rites used to maintain the social cosmological structure included the “four-age rite, hunt god rite, dog sacrifice rite, decommission rite for a place, infant sacrifice, cache offering, first-kill rite, rebalancing rite, turtle shell rite, and spirit release rite” (Claassen 2014:38).

The “ritual districts” in places like the Tennessee River and Ohio River Valleys represented structured locations laid out across a ceremonial landscape that was used to organize Archaic hunter-gatherer communities.

Hybrid models, considering a mixture of environmental and historical approaches, have been applied to Archaic shell ring sites situated along the Georgia and Florida coastlines with less application to Mid-South shell bearing sites. Researchers that use hybrid models employ an interpretive framework that looks at mobility, presence/absence of monumentality, and feasting behaviors (Colaninno 2012; Thompson and Andrus 2011). Thompson (2007) elsewhere defines his hybrid approach as the “developmental model.” Under this model, shell ring sites include complex occupational histories, which alternated with periods of daily use and periods that were more ceremonial in nature.

Colaninno (2012) analyzed faunal remains from the Late Archaic St. Catherine Shell Ring site located on St. Catherine Island on the Georgia coast. Colaninno (2012) used faunal remains to demonstrate that the exterior shell ring was formed through long term, but continuous debris

accumulation, while faunal remains recovered from internal pit features resembled the expectations for feasting events. This finding complements and intersects with the use of mollusks from the shell ring, which Colaninno (2012) states supports a year around occupation at the site. The faunal remains recovered from the shell ring exhibited 91 percent fish remains, contrasted to an increase in deer bones to 52 percent from the internal features. The increase in deer remains from specific feature contexts was interpreted as feasting events by Colaninno (2012).

Thompson and Andrus (2011:316) applied Thompson's (2007) "development model" to the Late Archaic occupation at the Sapelo Island Shell Ring site identified the southern coast of Georgia. Their investigation was oriented to ascertain hunter-gatherer mobility and the intent behind shell ring construction. The site includes three Late Archaic shell rings (circa 4400–3000 cal yr B.P.), shell rings 1, 2, and 3. Shell ring 1 is approximately three meters in height and 95 meters in diameter while shell rings 2 and 3 have no real height (shells are at ground surface) with shell ring 2 having a 90 meter diameter and shell ring 3 with a 54 meter diameter (Thompson and Andrus 2011:321).

Thompson and Andrus (2011) conducted isotope analysis and growth band ring studies on the clams and oyster shells, providing a seasonal occupational history at the site. They found that the shell and artifactual debris at shell rings 2 and 3 accumulated over time, year round, and point to village debris. The accumulation at shell ring 1 exhibited a different historical trajectory with shells deposited during the wintertime. Based on these differences, Thompson and Andrus (2011) suggest that some shell rings may have developed through feasting events.

Sassaman (2010) proposes that the early part of the Middle Archaic period was a moment where culturally diverse groups moved into the Southeast and Mid-South. These "diasporic

communities” (Sassaman 2010:93) formed cultural units across landscapes that needed to be interconnected into some type of homogenized culture, usually through the creation of a shared history.

For example, Sassaman (2010: 38–50) conceptualizes Archaic diversity through the historical trajectories of different cultural groups that consistently interacted to form regional and local communities. His basic model describes two primary migrations, Ancestry I and Ancestry II, into the Southeast and Mid-South. Ancestry I constituted the arrival of Clovis peoples and their descendants that populated the region through the Early Archaic and into the Middle Archaic periods. This group practiced a highly mobile tradition supported by the gathering of wild plants and the hunting of smaller game and megafauna (Sassaman 2010:39).

Ancestry I continued along this trajectory until 12,900 cal yr B.P. Post 12,900 cal yr B.P., the climatic event known as the Younger Dryas introduced a warmer, seasonal character to the Southeast and Mid-South, a change from the colder temperatures during Clovis times (Sassaman (2010:42). These changes prompted Ancestry I populations to abandon parts of the Southeast and Mid-South and migrate toward coastal resources or to the Great Lakes region where the climate was similar circa 9500 B.P. (Sassaman (2010:42). About 8900 B.P., Ancestry II peoples began to migrate into the vacant area between the Ohio and Tennessee River Valleys of the Mid-South, establishing themselves in the main river valleys (Sassaman (2010).

Conclusion

The Archaic period was a 5000-year period that is recognized within three general periods: the Early Archaic period (circa 11,500–8900 cal yr B.P.), the Middle Archaic period (8000 –5800 14 cal yr B.P.) and the Late Archaic period (5800 –3200 cal yr B.P.) (Anderson and Sassaman 2012). Each period represented the appearance of new cultural attributes that differentiated it

from the preceding period. The cultural landscape during the Early Archaic period was one of highly mobile, egalitarian hunter-gatherers that depended on a residential subsistence pattern to support their subsistence economy (Sassaman 2010). There are hints that socially complex hunter-gatherers emerged with the Dalton complex, like the hypertrophic Dalton points manufactured and distributed in the Central Mississippi River Valley and the aqueous human cemeteries in eastern Florida (Doran 2002, Walthall and Koldehof 1998). By 8900 cal yr B.P., new artifact types and new settlement patterns materialized including the first archaeological evidence for mound construction (Gibson 1994). Hunter-gatherers in the Lower Mississippi Valley constructed earthen mounds and mound complexes while hunter-gatherers in the lower Tennessee River Valley (Lewis and Lewis 1961), the St. John's River Valley (Sassaman and Randall 2012) and along the Atlantic coasts (Thompson 2007) deposited heaps of shellfish that formed ridges and mounds. Traditional views encompassed these shell cultures under the umbrella term of the Shell Mound Archaic (Sassaman 2010). Recent investigations in these river valleys now show that while the consumption and heaping of shell was the common denominator, these cultures were culturally unique and experienced their own historical trajectories (Claassen 2010).

While shell mound cultures were different, two basic questions continue to direct research on the Shell Mound Archaic: (1) were shell mounds just refuse piles of food debris left by egalitarian hunter-gatherers (resource first models)? or (2) did hunter-gatherers construct shell ridges and shell mounds as places of socialization that created and/or reinforced some type of social hierarchy at either a sacred or secular level?

Resource first models point to those shell bearing sites that lack evidence for living floors, the actual low density of shells, and the absence of burial items that would indicate a ranked society

to argue that they represent subsistence activities (Randall 2015). These models lean heavily on the timing of shellfish availability. Once shellfish communities became easily accessible, hunter-gatherers stayed at these shoals and ripples collecting, processing, and piling the remnants of shellfish (their shells). A slight variation of the resource first model is the idea that shell collecting locations developed into persistent places that were incorporated into the human interaction sphere as important places (Thompson 2007).

In contrast, shell ridge and shell mound construction are understood as deliberate monuments used to create, maintain, and restructure Archaic reality. Shell monuments represented the physical presence of the social system. The St. John's River Valley shell mound works are theorized as places for the homogenization of culturally different hunter-gatherers while shell mounds in the lower Tennessee River Valley are thought to represent nodes on the landscape that supported a regional ceremonial belief system (Sassaman and Randall 2012)

Several important local and regional cultural differences have been noted at shell mound sites. Different types of public performances occurred at St. John's River Valley sites while public performances that spotlighted dog burials were conducted at the Middle Archaic Big Sandy and Eva sites in the lower Tennessee River Valley. Another difference in the lower Tennessee River Valley was the random burial pattern at the Eva site when compared to distinct cemetery areas at the Cherry site (Lewis and Lewis 1961, Sassaman and Randall 2012). By 5600 cal yr B.P., shell mound cultures in the lower Tennessee River Valley transitioned to include areas of shell-free deposits with new sites established in the lower Tennessee River Valley (Bissett 2014, Lewis and Lewis 1961). These new sites, Oak View, Ledbetter, Cherry, Kays Landing, differed from the Middle Archaic occupations of Eva and Big Sandy. Hunter-gatherers built structures at these new sites and buried humans in cemeteries that were separate from residential areas. Sometime

around 3600 cal yr B.P., hunter-gatherers in the lower Tennessee River Valley, returned to collecting and depositing shell at some site locations. This return to shell mounding coincided with the Late Archaic–Early Woodland transition (Bissett 2014). The archaeological records at the sites used in this study are discussed in the chapter that follows.

CHAPTER IX

ARCHAEOLOGICAL SITES USED IN THE STUDY

Introduction

In this chapter, the sites analyzed for this study are presented and described in detail. The sample of sites were chosen for two reasons: to provide both local and regional comparisons to sites in the lower Tennessee River Valley, and because these sites had some level of excavation integrity (Bissett 2014, Osbourne 1942, Lewis and Lewis 1961) where animal use could be tied to time periods. Information for each site was taken from previously published sources. The information for the lower Tennessee River Valley sites (**Figure 8**) was taken from Lewis and Kneberg (1959) and from Bissett (2014). Details about faunal remains were published for the sites of Eva and for the Big Sandy sites (Bissett 2014, Lewis and Lewis 1961), the Indian Knoll site (Webb 1974), the Dust Cave Site (Walker 1998) and the Black Cat Cave site (Peres et al. 2023). Faunal remains have not been published for the sites of Cherry, Oak View, Ledbetter, and Kay's Landing. The published report on the faunal remains from the Late Archaic site of Indian Knoll (from the Green River Valley) was used as an example of Late Archaic faunal remains (Webb 1974).

The chapter highlights contemporary research that has occurred in the Shell Mound Archaic including research by Thaddeus Bissett (2014), Walker (1998), and Peres (2019). This contemporary research has made possible a model for the human-animal relationship during the Middle to Late Archaic periods. Bissett 's 2014 PhD dissertation is an invaluable resource as he was able to examine and date many lower Tennessee River Valley sites. Bissett's (2014) interpretation of the lower Tennessee River sites and his radiocarbon dates are presented in the analyses that follow, in Chapter X.

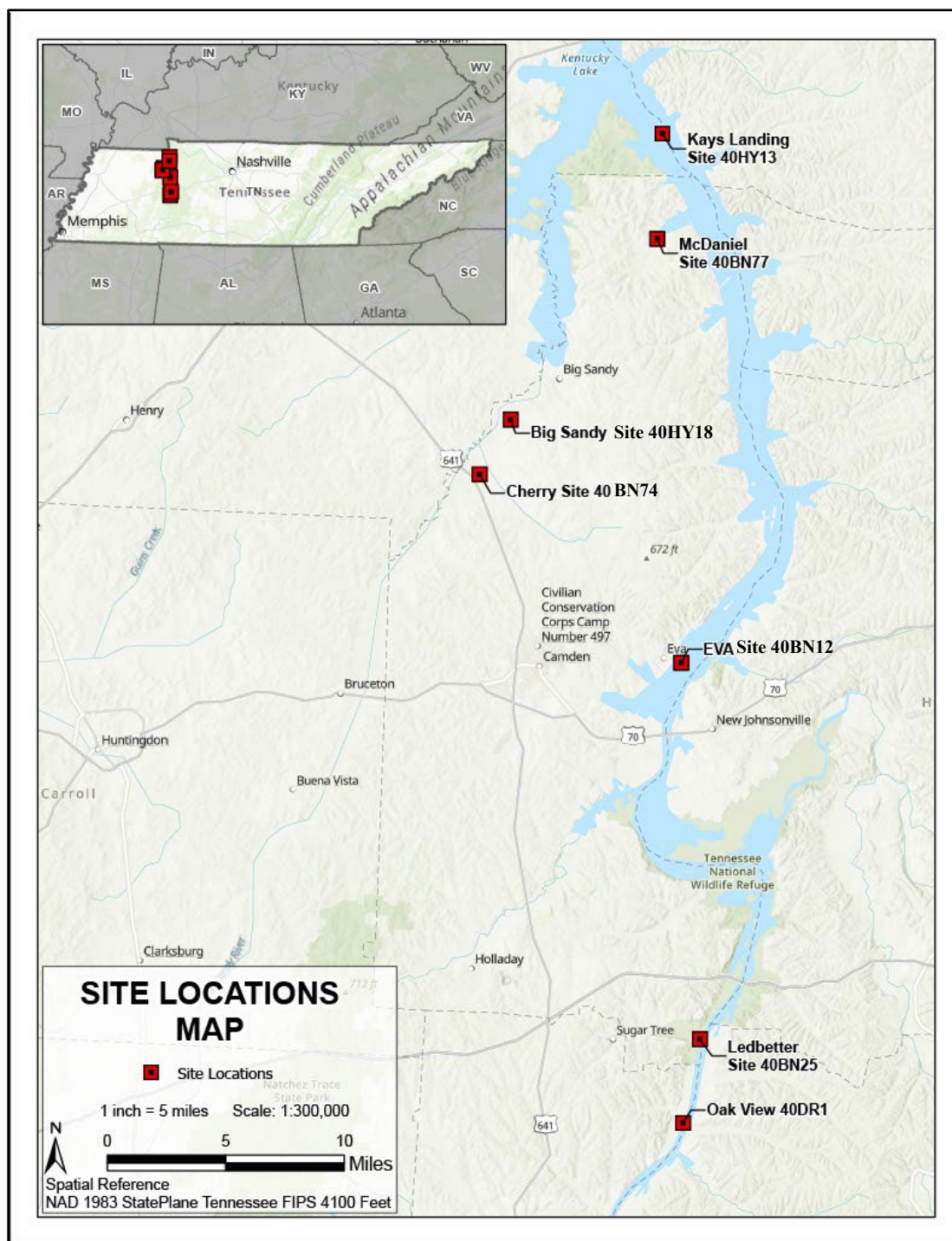


Figure 8. The Locations of the McDaniel, Big Sandy, Cherry, Eva, Ledbetter, and Oak View Archaeological Sites.

Sample Sizes and Area Excavated at Each Archaeological Site

Table 7 shows the excavated area in square meters and square feet for each site used in the study; depth and hence overall volume cannot be adequately determined from the extant records for several sites. The data from the Big Sandy site and from the Eva site are large and hence likely fairly representative analytical samples. The faunal sample from the Big Sandy site was 3114 individual animal bones compared to 14,000 animal bones from the Eva site, although the more area was excavated at the Big Sandy when compared to the area excavated at the Eva site. The excavators reported that the animal bone preservation was good at the Eva and Big Sandy sites due in part to the preservation nature of freshwater shells. The preservation of animal bones at sites Kay's Landing, Cherry, Oak View, Ledbetter Landing, and McDaniel was not reported. Articulated dogs were found in good preservation at these sites, although these remains were not placed in shell deposits (Bissett 2014, Lewis and Lewis 1961).

The Eva Site (40BN12)

The Eva Site (40BN12) was located on a terrace of Cyprus Creek, which is located a few miles from the present day location of the Tennessee River in Benton County, Tennessee (Bissett 2014:161, Lewis and Kneberg 1959:162). The site is currently beneath Kentucky Lake and is not accessible. Clarence B. Moore (Moore 1915) conducted excavations at the site in 1915 followed by more systemic investigations in the 1940s by archaeologists from the University of Tennessee. The 1940 team established a 10 meter x 10 meter grid and excavated two trenches across the site. The first trench was excavated 210 feet in length while the second trench was a 200 foot long trench. A total of 34 10 m by 10 meter hand excavated blocks were excavated in the center of the landform. The total depth of the site was approximately 5.2 meters from the ground surface to culturally sterile subsoil (Bissett 2014:170, Lewis and Lewis 1961).

Table 7. The Size and Total Area Excavated at Each Site Used in the Study.

Site	Area Excavated Meters Squared	Area Excavated Feet Squared
Big Sandy (40HY18)	930	10,000
Eva (40BN12)	315.9	3400
Kays Landing (40HY13)	244.4	2265
Cherry (40BN74)	474.8	5111
Oak View	371.6	4000
Ledbetter Landing (40BN25)	226.8	2441
McDaniel (40BN77)	304.9	3300
Total For Lower Tennessee River Valley	2,868.4	30,517

Figure 9 shows the site while **Figure 10** shows the stratigraphic profile at the Eva site that Lewis and Kneberg (1959) linked to the three cultural phases and the sub-strata identified within each stratum. Eva experienced precontact utilization and habitation during the Early, Middle, and Late Archaic period (Lewis and Lewis 1961). There are no radiocarbon dates for the Early Archaic period, although Early Archaic projectile points have been recovered from the earliest occupation levels. (Stratum V). The Early Archaic occupation was most likely part of a residential pattern where mobile hunter-gatherers stayed at the site for short time periods. Lewis and Lewis (1961) identified five occupational strata based on changes in shell density, number of cultural features, changes in artifact types, and density of human and dog burials. The earliest cultural occupation was designated as Stratum V, which represented the original terrace surface. Stratum IV was situated above Stratum V and contained the highest density of disarticulated animal bones and cultural features. Stratum III was reported by Lewis and Lewis (1961) as a natural flood deposit that separated Stratum IV from Stratum II. Stratum II was identified as a long occupation when the highest density of shell was deposited at the site (Lewis and Lewis 1961).

Re-Analysis Eva Site (Bissett 2014)

Bissett (2014) produced eight radiocarbon dates that allow a much tighter time sequence for the occupation for the Eva site than provided by the relative dating of Lewis and Lewis (1961). The new C-14 dates by Bissett (2014) are presented in **Table 8** which shows all eight radiocarbon dates. The animal bones recovered by species along with the frequencies of carcass part distribution are provided in **Table 9**. **Table 9** lists the reported NISP from the Eva site by species and by cultural phase (developed by Lewis and Kneberg (1959)).

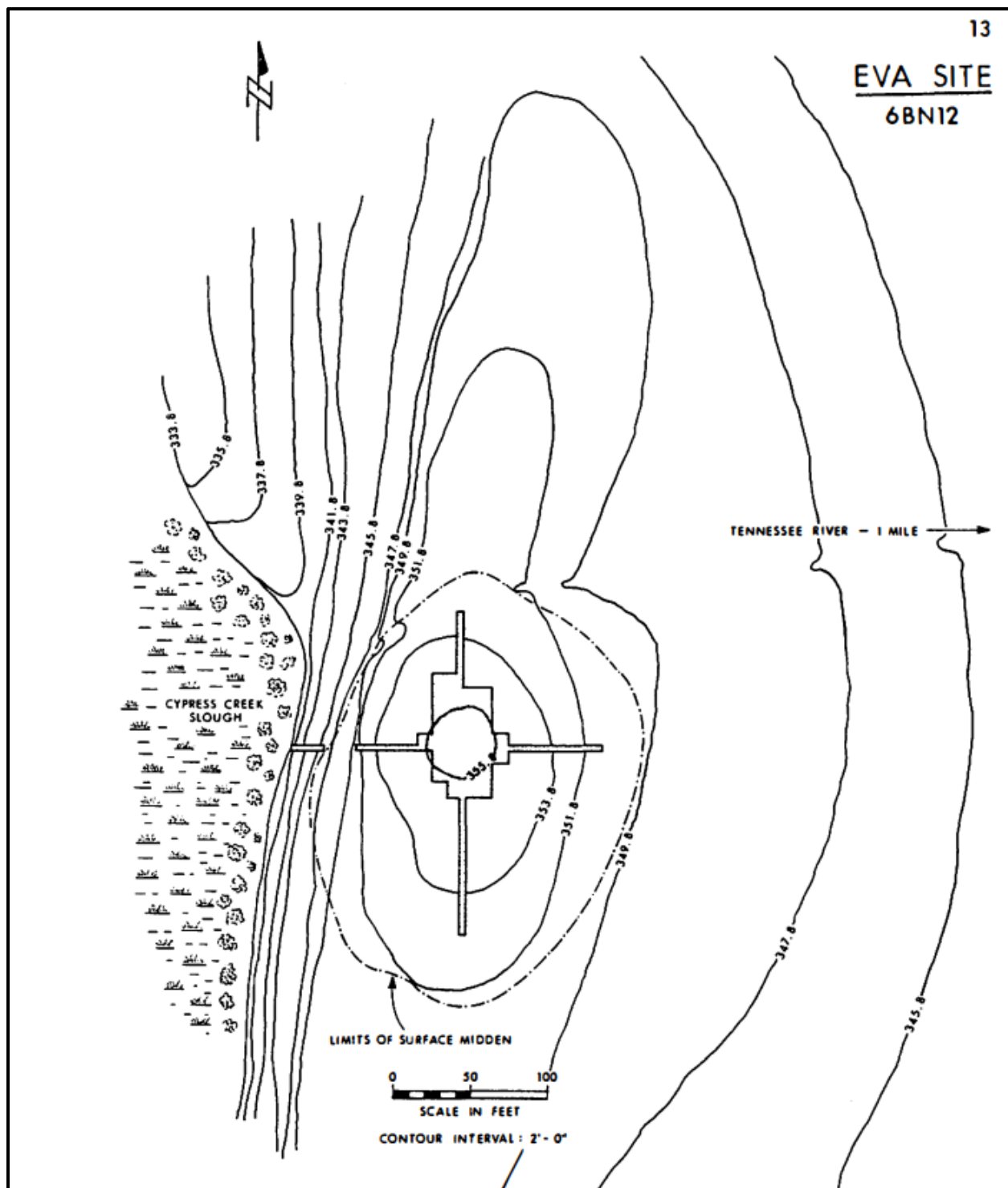


Figure 9. The Excavation Plan at the Eva Site (Lewis and Lewis 1961).

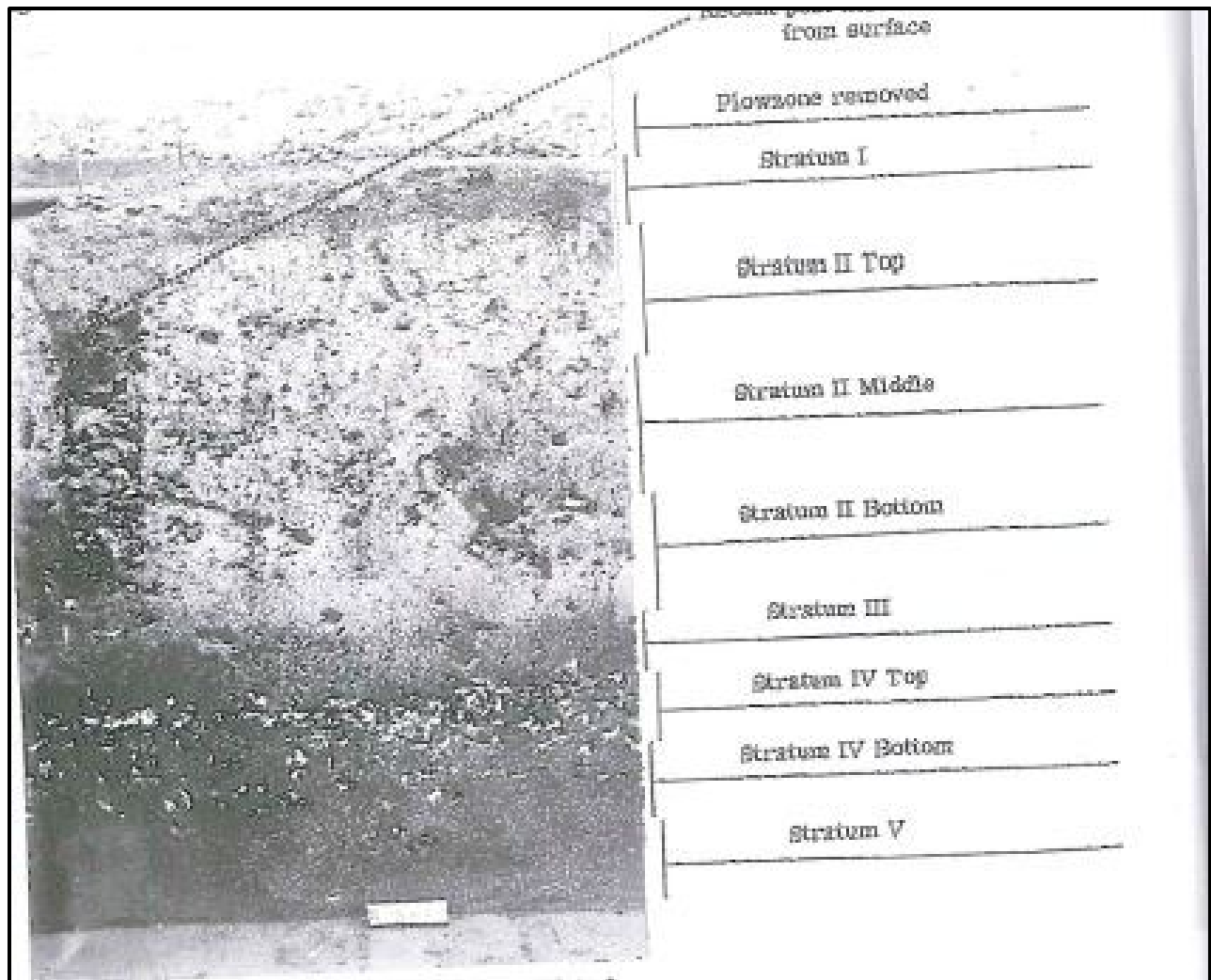


Figure 10. The Archaeological Stratigraphy From the Excavation at the Eva Site Showing Lewis and Lewis's (1961) Strata Identification.

Table 8. Radiocarbon Dates From the Eva Site.

Context	C-14 Dates , Modeled Cal B.P. (Bissett 2014)
Stratum I	7021 +/- 93
Stratum I	6636 +/- 83
Stratum II	7214 +/- 93
Stratum II	7304 +/- 78
Stratum II	7526 +/- 57
Stratum II	7417 +/- 66
Stratum II	7219 +/- 92
Stratum II	8392 +/-51
Stratum IV	8351 +/- 51
Stratum IV	8389 +/- 50
Stratum IV	8400 +/- 50
Stratum IV	8308 +/- 58
Stratum V	8879 +/- 114
Stratum V	8794 +/- 98
Stratum V	8811 +/- 98

Table 9. NISP By Species and by Phase From Eva (Lewis and Lewis 1961:22).

Species	Big Sandy Phase	Three Mile Phase	Eva Phase
Deer	524	1813	12,407
Bear	13	26	449
Raccoon	29	168	294
Opossum	11	44	51
Beaver	1	25	92
Rabbit	4	28	13
Muskrat	1	1	1
Rat	3	0	0
Mink	1	5	0
Fox	1	1	0
Groundhog	1	15	0
Wildcat	0	2	6
Otter	0	2	1
Squirrel	0	0	1
Turkey	21	97	176
Bird Species	12	82	33
Turtle	40	138	452
Drumfish	33	91	103

Table 9. NISP By Species and by Phase From Eva (Lewis and Lewis 1961:22) Continued.

Species	Big Sandy Phase	Three Mile Phase	Eva Phase
Garfish	5	17	9
Catfish	6	14	11
Fish Species	1	2	0

parts) for deer and bear (see **Tables 10 and 11**), while **Figure 11** shows the distribution of small mammal species by cultural phase. **Figure 12** shows the NISP for large mammals by cultural phase. The below discussion is based on these reported numbers for species at the site. Stratum V had little to no freshwater shell, three possible thermal cooking features, and a single human burial (Bissett 2014:206). There was a high density of animal bone refuse and based on the descriptions of Lewis and Lewis (1961) and Bissett (2014), the bones were disarticulated animal bones. The animal bones in Stratum V were concentrated in three areas, Locus A (southwestern portion at the site); a second area, grid squares 501 and 502; and a third area, square 47R2 (Bissett 2014:244). These three areas of animal bone concentrations may point to distinct activities where whole deer skeletons were brought to the site and butchered on-site and consumed.

Stratum IV, circa 8450–8200 cal yr B.P., was identified by an increase in freshwater shells, cultural features (n=25), and the presence of fifteen human burials (Bissett 2014:190).

A high density of disarticulated animal bones was also present throughout Stratum IV, although distinct concentrations of animal bones were not identified like the animal bone concentrations in Stratum III (Bissett 2014). 8,200 to 7,500 cal yr B.P., represents a break between Strata IV and V and Stratum II where hunter-gatherers deposited the highest density of water mussel shells.

Lewis and Kneberg (1961) described a silt flood soil that separated Stratum IV from Stratum III. Stratum III was a period of decreased habitation evident by the presence of a few thermal cooking features, 13 human burials and one domesticated dog burial (Bissett 2014). Stratum II represents an approximate 1200 year occupational period, circa 7,600–6,300 cal B.P., when hunter-gatherers began to deposit a high density of mussel shells creating the mound-shape of the site encountered by 20th century excavations (Lewis and Lewis 1961). Although Stratum II

Table 10. NISP Of White-tail Deer Carcass Parts From Eva (Lewis and Lewis 1961).

Species	Big Sandy	Three Mile	Eva
Deer			
Antler	61	241	908
Astragalus	28	81	482
Calcaneus	46	146	697
Femur	13	27	331
Humerus	21	66	805
Mandible	33	97	879
Maxilla	5	19	280
Pelvis	19	68	716
Phalange	51	263	612
Radius	39	82	1054
Rib	25	67	561
Skull	7	13	62
Scapula	14	66	789
Tibia	30	112	906
Vertebrae	35	83	1605
Tarsal	3	15	103
Ulna	35	74	502
Total	524	1813	12,407

Table 11. Bear Carcass Parts Raw Number from Eva (Lewis and Lewis 1961:24).

Species	Big Sandy	Three Mile	Eva
Bear			
Calcaneus	1	0	0
Humerus			3
Rib	0	0	1
Vertebrae	12	0	0
Tarsal	0	26	444
Ulna	0	0	1
Total	13	26	449

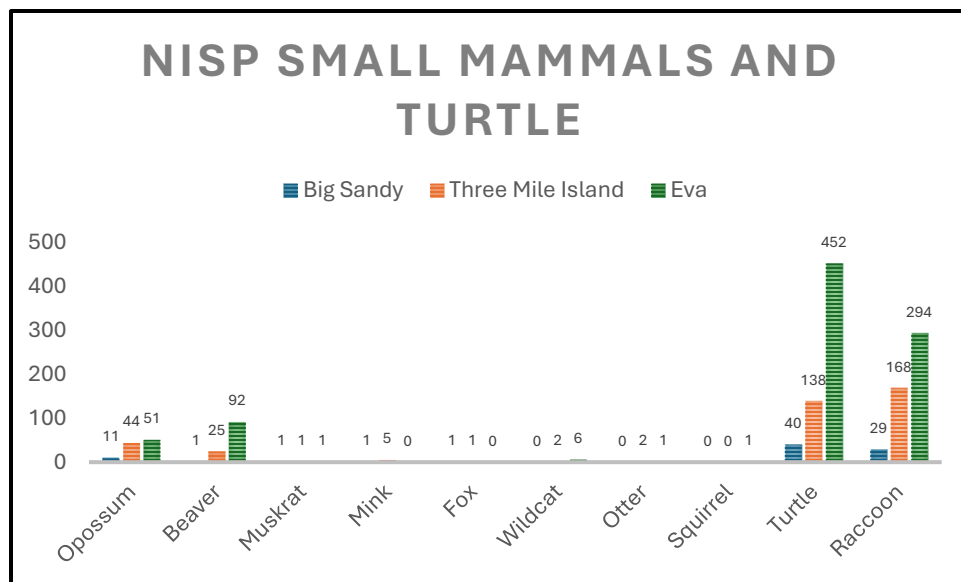


Figure 12. NISP Small Mammal and Turtle at the Eva Site (Lewis and Kneberg 1961:24).

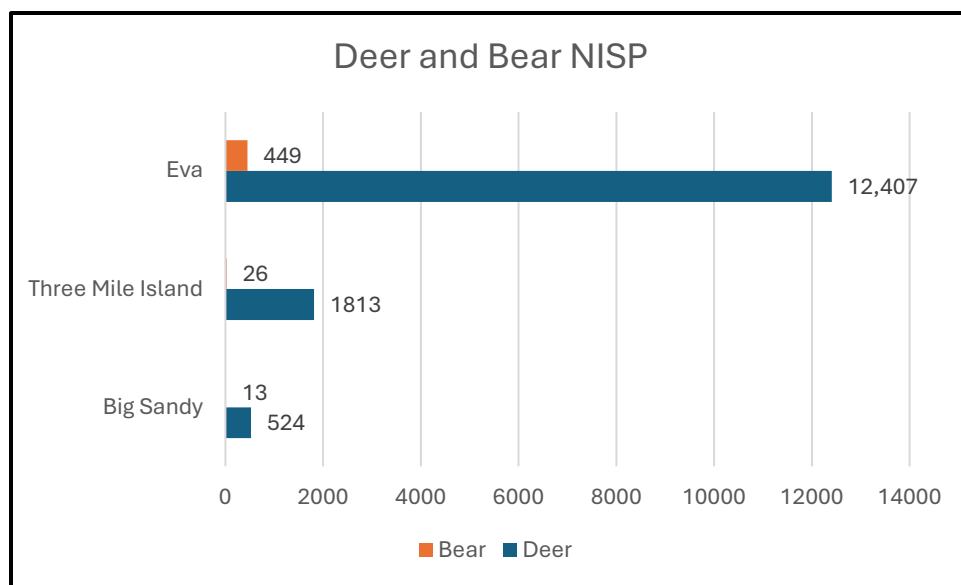


Figure 11. Large Mammal NISP (Deer and Bear) at the Eva Site (Lewis and Kneberg 1961:22).

enjoyed a long occupation (evident by the 1.25 meter thickness of the shell deposit), the Stratum II occupation was different from the preceding strata. A rather dramatic reduction in the amount of disarticulated animal bone occurs, while human burials (n=109) and dog burials (n=15) increase dramatically in Stratum II (Lewis and Lewis 1961). Stratum II was rather unique, different from preceding strata by a high density of shell accumulation intermixed with human and dog burials. Although Stratum II had the longest occupational period, Bissett (2014:253) reports that of the approximate 14,000 disarticulated animal bones recovered from the Eva site, Stratum II contained a NISP of only 17 percent of animal bones from the entire site. Stratum I, circa post 7,000 cal B.P., exhibited some mixing and is best dated by the recovery of Late Archaic projectile points. The accumulation of shell virtually comes to a halt, although humans and dogs continued to be buried in Stratum I (Lewis and Lewis 1961)

The Big Sandy Site (40HY18)

The 1942 Master Thesis by Osborne (1942)

The Big Sandy site (40HY18) was located on the Big Sandy River which runs north/south forming the county line for Henry and Benton counties (Osborne 1942:3) (**Figure 13**). The excavation team established a 10 meter x 10 meter grid and excavated two trenches across the site (Osborne 1942:27). A north-south trench was placed across the ridge and extended for a 110 feet (Osborne 1942: 30). A second east-west trench was placed beginning at the first trench and excavated toward the river for 110 feet. A third north-south running trench was placed 70 feet from the first trench and excavated across the site, parallel to Trench 1. Once the three trenches were complete, the crew hand excavated other areas of the site.

The 1940 excavation revealed a different stratigraphic situation than that found at the Eva site. Although Osborne (1942) described the cultural features and artifacts by Stratum, Bissett (2014) reanalyzed the excavation and, based on radiocarbon dates produced in 2014, believes that



Figure 13. The Big Sandy Site during the excavations (Osborne 1942).

Stratum I and Stratum II represent the same occupation (Bissett 2014). The reanalysis conducted by Bissett (2014) is presented following the discussion of David Osborne's report (1942). Two different soil strata were identified by Osborne (1942) and reported as two separate occupations. Stratum I was identified below the plowzone and ranged from one to three feet in thickness (Osborne 1942: 43). Based on soil type and artifact density, Osborne (1942:43) divided Stratum I into an uppermost "Stratum I top" and a "Stratum I bottom". Stratum I top consisted of a red to brown soil with a low density of animal bones and contained all of the precontact ceramics found at the site.

The abrupt transition from red brownish soil to a very dark black midden soil prompted Osborne (1942:45) to designate this midden soil as Stratum I bottom. Stratum I bottom is composed of a dark black midden that lacked precontact ceramics, with increased numbers of animal bones and lithic artifacts. Osborne designated this as Stratum II.

Stratum II was identified as a gray to black soil with heavy ash contact separated from the Stratum I bottom by a thin deposit of black soil that measured approximately $\frac{1}{4}$ of an inch in thickness (Osborne 1942:45).

Cultural features identified on the ridgetop included 40 basin shaped features and 9 shaped pit features, 62 human burials, and 12 dog burials (Bissett 2014:125). sequence of the occupation for the Big Sandy site than provided by the relative dating of Osborne (1942). Like the Eva site, an ephemeral Early Archaic occupation is evident by the recovery of Early Archaic projectile points. Bissett (2014:156) believes bulk of the occupation at the site occurred from 8900 cal B.P. to 8200 cal B.P., with Stratum I and Stratum II representing the same occupation but with different activity areas.

Bissett (2014) Re-Analysis of the Big Sandy Site

Bissett (2014) produced ten radiocarbon dates that allow a much tighter time The Middle Archaic occupation, circa 8900 to 8200 cal yr B.P. (**Table 12**), witnessed the most intensive use of the site with a residential area (Stratum I) and a cemetery with human (n=62) and dog burials (n=12). Stratum I, located on the hilltop, was used by the inhabitants for everyday activities like cooking, food processing, and other daily activities. Of the 53 pits and basins reported from the site, 51 pits and/or basins were assigned to Stratum I while two pits and/or basins were assigned to Stratum II.

The pits and basins ranged in size from small to large, and most likely used food storage and/or food production. A total of 256 Middle Archaic projectile points were recovered at the site and include Benton, Big Sandy, Elk River Stemmed, Eva I, Eva II, Morrow Mountain (Bissett 2014:139).

Animal Bone Assemblage From Big Sandy (40HY18)

Species Abundance

Animal bones were recovered during the 1940 excavation and the data presented by Osborne (1942). Osborne (1942) noted 3,651 animal bones recovered from Site 40HY18. **Figure 14** shows the relative frequency of NISP by for the main utilized species at the Big Sandy site. Based on NISP, white-tailed deer represent the most numerous species (n=3114) at 86 per cent of the animal bones, followed by bear (n=418), at 10 percent of the total animal bone assemblage. Disarticulated dog bones (n=42) were present in the matrix and represent less than one percent of the animal bone assemblage. The NISP for dogs does not include those dogs that were buried at the site. Raccoon (n=59) and opossums (n=18) were utilized at the site with both species providing 3% of the animal bone assemblage.

Table 12. C-14 Dates From The Big Sandy Site.

Context	C-14 Dates, calibrated cal yr B.P. (Bissett 2014)
Stratum I	7371+/- 63
Stratum I	8603 +/- 121
Stratum I	8512 +/- 86
Stratum I	8223 +/- 88
Stratum II	7173 +/- 94
Stratum II	8588 +/- 116
Stratum II	8453 +/- 73

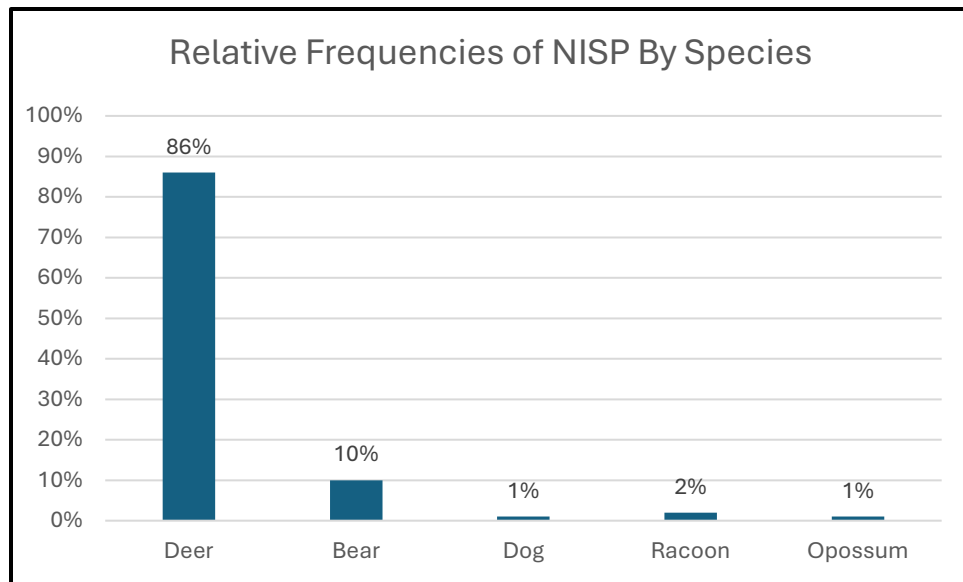


Figure 14. The Relative Frequency of Species By NISP at Big Sandy (40HY18).

Carcass Part Distribution

The distribution of the animal skeleton parts for white-tailed deer are presented in **Figures 15 - 16** while **Figure 17** shows the frequency of hind and fore limbs for bear. The NISP counts for deer and bear by skeletal part are listed in **Tables 13 and 14** while the NISP for small mammals (dog, raccoon, opossum, beaver, otter, fox, and wildcat) are listed in **Tables 15 and 16**.

White-tailed Deer

For white-tailed deer, carcass parts were formulated into categories that included the head (cranial, maxilla), Front Quarters (humerus, calcaneus, radius, and scapula), Hind Quarter (tibia, astragalus, femur), and Axial (vertebrae and rib). The fore quarter (n=1095) and the hind quarter (n=961) represent the arrival of both fore and hind quarters at the site. The Head (n=60) category included fragments from the Skull and from the Maxilla, while the Axial (n=465) category included vertebrae (n=461) and rib fragments (n=4).

Bear

The carcass part distribution for bear is almost 99 percent axial (vertebrae n=370, rib n=6), followed by fore limbs (n=26; humerus n=5, scapula n=21), hind limbs (n=15), pelvis fragments (n=15), and head (n=1), mandible fragment (n=1).

Domesticated Dog

The carcass part distribution for domesticated dogs includes Head (n=7), Fore (n=30), Hind (n=16). The disarticulated dog bones were not used in this analysis due to the uncertainty if these bones came from disturbed dog interments or actually represented the remains of meals.

Animal Interments at 40HY18

Osborne (1942) reported 12 dog burials at 40HY18. A total of five dog burials were recovered in Stratum I while six dog burial were recovered in Stratum II (Osborne 1942:89).

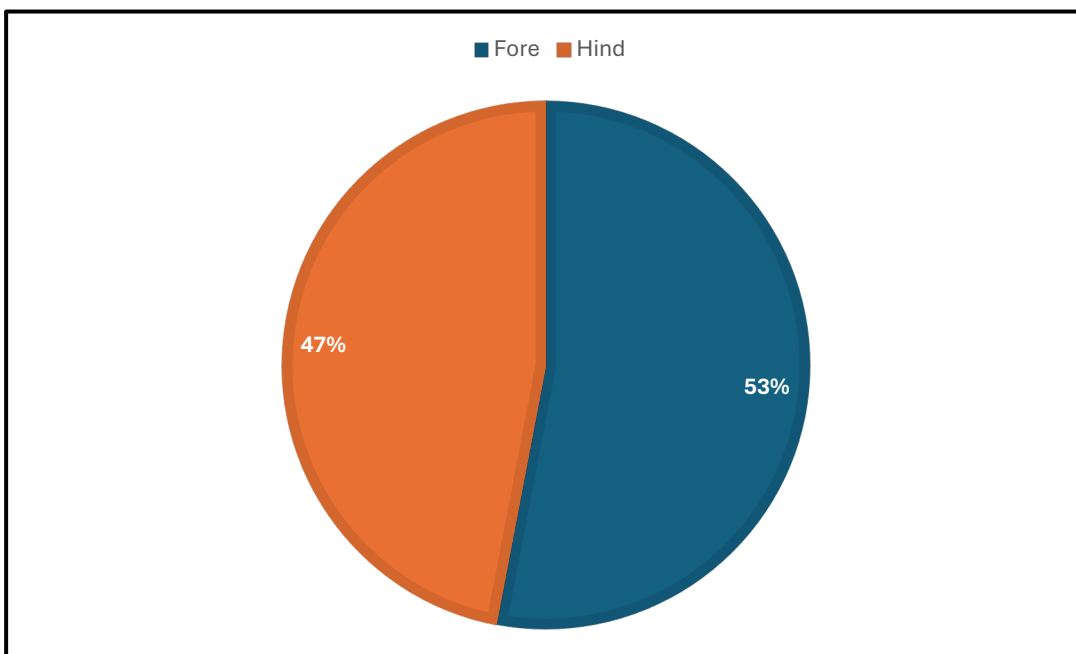


Figure 15. Percentages of the White-Tailed Deer Carcass Parts- Fore and Hind Limbs From the Big Sandy Site (40HY18).

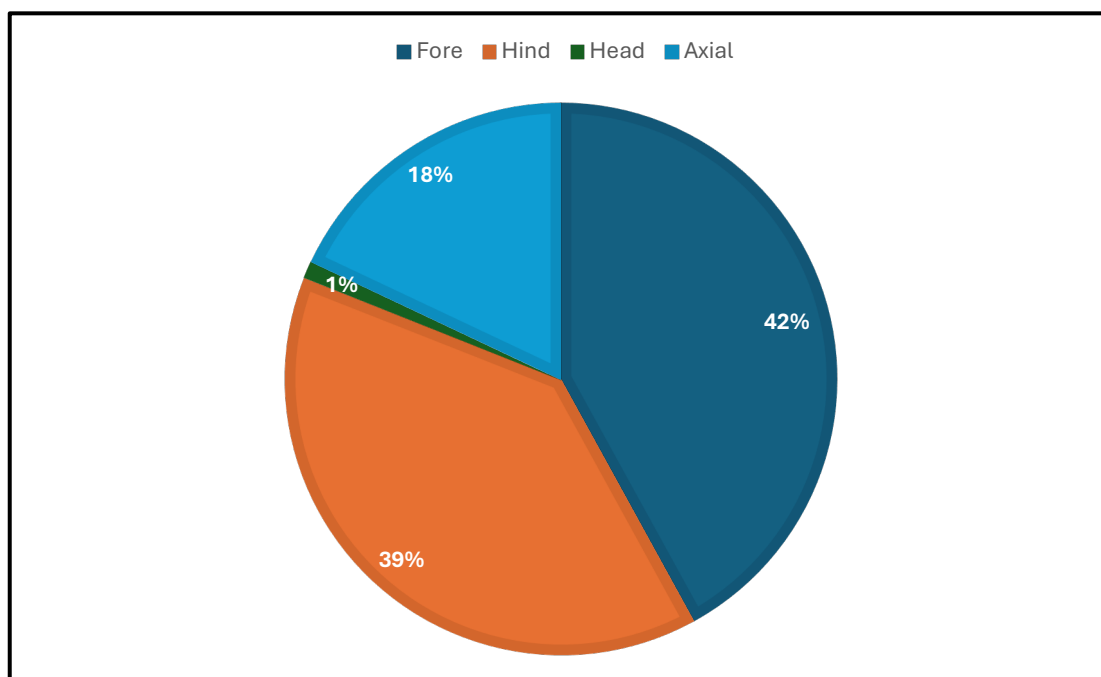


Figure 16. Skeletal Part Distribution for White-Tailed Deer From the Big Sandy Site (40HY18).

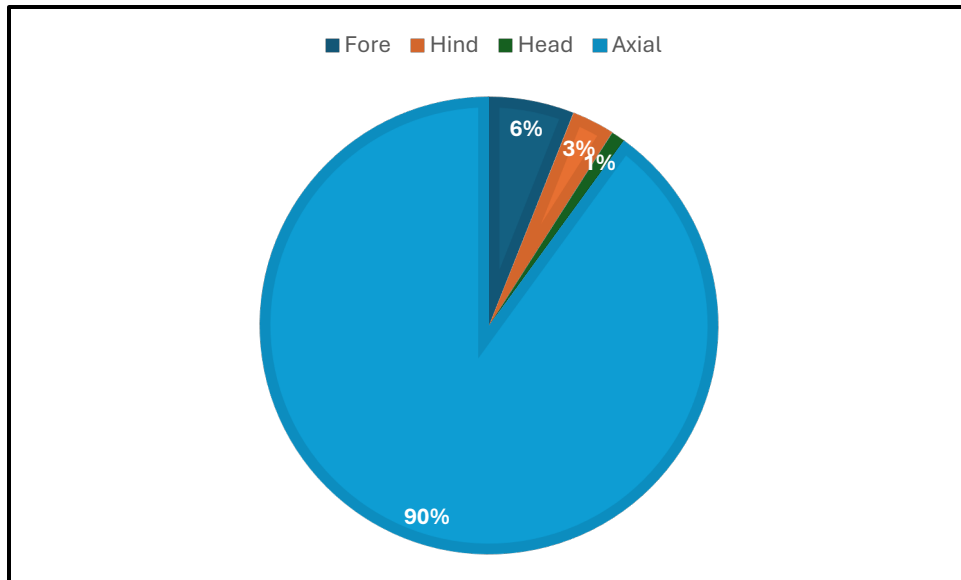


Figure 17. Distribution of Bear Carcass Parts from the Big Sandy site, 40HY18.

Table 13. Deer and Bear Bones Recovered From the Big Sandy site (40HY18), Stratum I and the Plowzone.

Deer	NISP	Bear	NISP
Antler	142		
Astragalus	116		
Calcaneus	95		
Femur	60		
Humerus	176	Humerus	3
Mandible	152		1
Maxilla	23		
Pelvis	265	Pelvis	6
Phalange	43		
Radius	144		
Rib	1	Rib	4
Skull	16		
Scapula	264	Scapula	
Tibia	168		
Vertebrae	287	Vertebrae	205
Total	1952		219

Table 14. Deer and Bear Bones Recovered From the Big Sandy site (40HY18), Stratum II.

Deer	NISP	Bear	NISP
Antler	101		
Astragalus	62		
Calcaneus	93		
Femur	35		
Humerus	131	Humerus	2
Mandible	70		
Maxilla	12		
Pelvis	146	Pelvis	9
Phalange	25		
Radius	74		
Rib	3	Rib	2
Skull	9		
Scapula	118	Scapula	21
Tibia	109		
Vertebrae	174	Vertebrae	165
Total	1162		199

Table 15. Domesticated Dog, and Small Mammals NISP By Skeletal Element from the Big Sandy site (40HY18), from Stratum I and Plowzone.

	Dog	Raccoon	Opossum	Beaver	Muskrat	Fox	Groundhog
Astragalus	0	0	0				
Calcaneus	0	0	0				
Femur	3	1	0	2			
Humerus	7	4	1	6		1	1
Mandible	7	23	9	10	1	5	
Maxilla	0	1	0	1			
Pelvis	6	3	0				
Phalange	0	0	0				
Penis	0	1	1				
Radius	2	0	0				
Rib	0	0	0				
Ulna	5	7	1			2	
Skull	0	0	0				
Scapula	0	0	0				
Tibia	6	0	0				
Vertebrae	4	4	0				
Teeth	0						
Total	42	44	12	19	1	8	1

Table 16. Domesticated Dog, and Small Mammals NISP By Skeletal Element from the Big Sandy site (40HY18), Stratum II.

	Dog	Raccoon	Opossum	Beaver	Otter	Fox	Wildcat
Astragalus	0	0	0				
Calcaneus	0	0	0			1	
Femur	1	0	0	3			1
Humerus	3	3	1	3	1		
Mandible	1	7	5	2		6	
Maxilla	1	3	0				
Pelvis	1	0	0				1
Phalange	0	0	0				
Penis	0	2	0				
Radius	0	0	0				
Rib	0	0	0				
Ulna	0	0	0				
Skull	0	0	0				
Scapula	1	0	0				
Tibia	3	0	0				
Vertebrae	0	0	0				
Total	11	15	6	8	1	7	2

The Indian Knoll Site

The Indian Knoll site (**Figure 18**) was located on the second terrace of the Green River in Ohio County, Kentucky and was one of the many shell bearing sites in the Green River Valley of Kentucky (Webb 1974). The Indian Knoll site was initially excavated by C.B. Moore (Moore 1915) in 1915, and 298 human burials were removed from the site. William Webb returned to the site in 1939 (Webb 1974) and published the results in 1946 with a later edition in 1974 containing a forward by Howard Winters (Winters 1974).

The Indian Knoll site was chosen for this study because of its dense faunal assemblage, and because other Late Archaic sites from the lower Tennessee River Valley (the Cherry, Oak View, and Ledbetter Landing Sites) do not have published faunal data. The Indian Knoll site presents a Late Archaic sample that can be compared to the Middle Archaic faunal samples from the shell sites of Eva and Big Sandy.

Webb (1974:125) excavated a series of 10 foot wide trenches across the site that resulted in the recovery of 880 human burials and 21 dog burials. Similar to Late Archaic shell sites in the lower Tennessee River Valley, the Indian Knoll site exhibited post molds that Webb (1974:129) interpreted as a permanent residential location with small houses.

Animal Bone Assemblage From Indian Knoll

Species Abundance

Animal bones recovered during the excavation were analyzed by Opal Skaggs at the University of Kentucky and reported by Webb (1974). The faunal report only lists the animal bones that were identified at the species level and did not list those bone fragments that could not be identified to a species (Webb 1974:333).

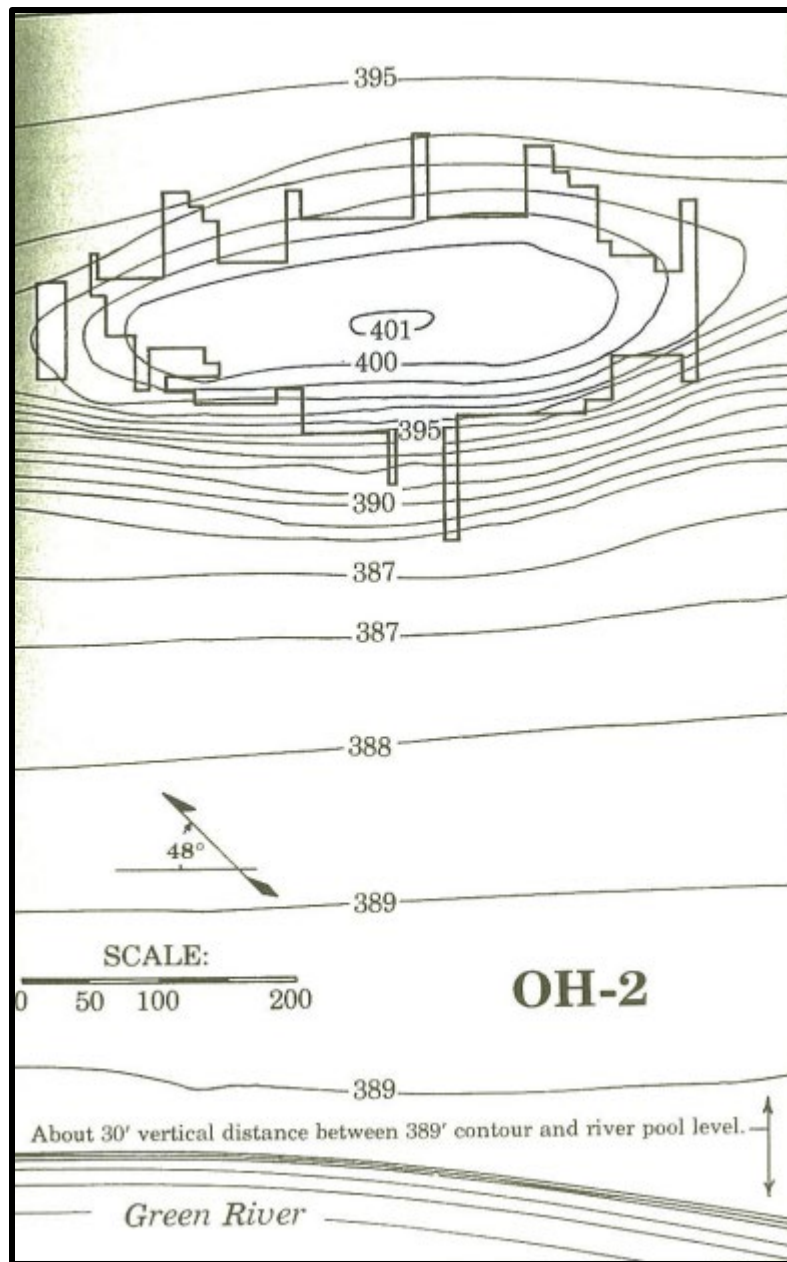


Figure 18. The Excavation of the Indian Knoll Site (Webb 1974).

Table 17 and **Figures 19 and 20** show the data that was used to formulate the ABGs for the Indian Knoll site. A few patterns emerge from the faunal overabundance of mandibles for domesticated dogs, raccoon, and opossum mandibles. A review of the animal bone tools by Webb (1974: 286) suggests that certain animal bones were stored or cached at the site for future use as tools. analysis by Opal including the use of white-tailed deer as a primary subsistence species and an White-tailed deer represent the majority of NISP with 18,024 bones followed by raccoon with a NISP of 410. Domesticated dog had a NISP of 101. Rabbit, squirrel, opossum, and ground hog represent small bone counts that range from 10 NISP to 36 NISP. Bear was almost absent at the site with only a NISP of two bones (Webb 1974).

The MNI of 561 for deer was calculated using the left humerus while racoon had an MNI of 33., calculated from 33 baculum bones (penis bones). The baculum bones point to a high number of male raccoons at the site. Webb (1974:286) described that raccoon baculum were used to manufacture awls.” Usually they were cut off at the point of greatest curvature and the proximal end only used , the cut end of the shaft being resharpened. Webb (1974:335) reported 260 raccoon mandibles from the site matrix but did not provide a side (right or left side) restricting the MNI based on mandibles. The recovery of 260 mandibles should correspond with a comparable number of other skeletal elements, especially fragments of skulls and fragments of the upper jaw (the maxilla). The NISP for skulls was 38 while the NISP for the maxilla was also 38. The NISP for domesticated dog at 101and an MNI of 4 animals. The NISP for dogs included 34 mandibles which probably skews the number of dogs in the midden. Webb (1974:234) reported that 12 canine teeth were recovered from the general matrix and 104 perforated canine teeth found in human burials. The high number of perforated canine teeth may indicate that the 34 dog mandibles were being cache as a source for dog teeth to be used for adornment.

Table 17. NISP and MNI For Deer and Bear Bones By Skeletal Element, Indian Knoll Site (Webb 1974)

Deer	NISP	MNI	Bear	NISP	MNI
Antler	698	N/A	0		N/A
Calcaneus	2619	N/A			
Astragalus	3101	N/A			N/A
Femur (Right)	275	137			N/A
Femur (Left)	276	138			N/A
Humerus (Right)	917	458			N/A
Humerus (Left)	1122	561			N/A
Mandible	1165	N/A	Mandible	1	1
Maxilla	351	N/A			
Pelvis	568	N/A	Pelvis	1	1
1 st Phalange	383	49			N/A
2 nd Phalange	39	9			N/A
3 rd Phalange	55	7			N/A
Radius (Distal Right)	369	185			N/A

Table 17. NISP and MNI For Deer and Bear Bones By Skeletal Element, Indian Knoll Site
Continued.

Deer	NISP	MNI	Bear	NISP	MNI
Radius (Distal Left)	389	195			N/A
Radius (Proximal- Right)	387	194			N/A
Radius (Proximal- Left)	449	225			N/A
Ulna (Proximal- Left)	487	244			N/A
Ulna (Proximal- Right)	206	103			N/A
Rib	1553				N/A
Scapula	1925				N/A
Tibia (Distal- Left)	722	361			N/A
Tibia (Distal- Right)	628	314			N/A

Table 17. NISP and MNI For Deer and Bear Bones By Skeletal Element, Indian Knoll Site Continued.

Deer	NISP	MNI	Bear	NISP	MNI
Tibia (Proximal- Left)	316	158			N/A
Tibia (Distal- Right)	289	145	0	0	N/A
Vertebrae - Atlas	293	N/A	0	0	N/A
Vertebrae- Axis	276	N/A	0	0	N/A
Vertebrae- other cervical	403	N/A	0	0	N/A
Vertebrae- Thoracic	301	N/A	0	0	N/A
Vertebrae- Lumbar	352	N/A	0	0	N/A
Vertebrae- Sacral	9	N/A	0	0	N/A
Total	18,024		2		

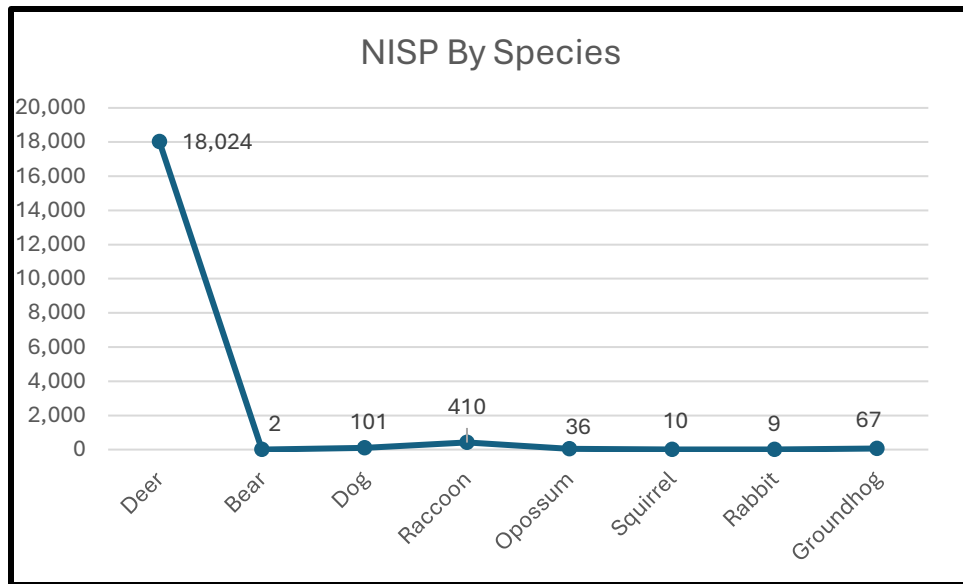


Figure 19. NISP Major Mammal Species At The Indian Knoll Site.

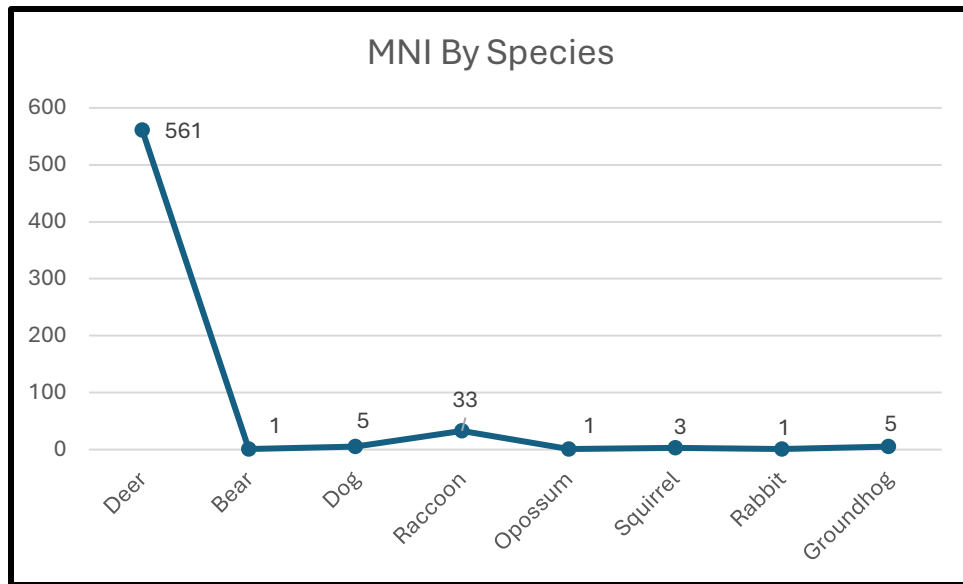


Figure 20. MNI Major Species At The Indian Knoll Site.

.The presence of skeletal elements (**Table 18**) are similar for the opossum with an overabundance of mandible fragments. The opossum has a NISP of 36 and a MNI of 1, however the NISP is skewed with 34 mandibles. Similar to the raccoon, opossum mandibles may have arrived at the site detached from the rest of the skeleton (**Table 19**).

Carcass Part Distribution

White-tailed Deer

For white-tail deer, carcass parts were formulated into categories that included the Head (cranial, maxilla, and mandibles), Front Quarters (humerus, ulna), Hind Quarter (tibia, femur), and Axial (vertebrae and rib). The fore quarter (n=1609) was based on the left humerus and the left distal ulna, while the Hind quarters was based on the left femur and the right distal tibia. And the hind quarter (n=971) represent the arrival of both fore and hind quarters at the site. Head (n=37) and Axial (n=456). The Axial category consisted of vertebrae (n=452) and rib (n=4).

Bear

The carcass part distribution for bear at Indian Knoll is almost 99 percent axial (vertebrae n=370, rib n=6), followed by fore limbs (n=26; humerus n=5, scapula n=21), hind limbs (n=15, pelvis fragments n=15), and head (n=1, mandible fragment n=1).

The Kays Landing Site (40HY13)

1940 Excavation

The Kays Landing Site was identified on a relict channel of the Tennessee River in Henry County, Tennessee and excavated in 1940 (Bissett 2014). Lewis and Kneberg (1959) reported five strata at the site in their 1959 article *The Archaic Culture in the Mid-South* that appeared in the journal *American Antiquity*, and that for many years was the primary synthesis of local shell mound research. Lewis and Kneberg (1959: 171) recognized that the site was unique and

Table 18. NISP and MNI For Dog, Raccoon, and Opossum Bones By Skeletal Element, Indian Knoll Site (Webb 1974).

Dog	NISP	MNI	Raccoon NISP	MNI	Opossum NISP	MNI
Astragalus	0	0	0	0	0	0
Calcaneus	0	0	0	0	0	0
Femur (Proximal- Left)	3	3	0	0	0	0
Femur (Proximal- Right)	3	3	4	4	0	0
Femur (Distal- Left)	1	1	4	4	0	0
Humerus (Left)	1	1	5	5	1	1
Humerus (Right)	2	2	2	2	0	0
Mandible	34	N/A	260	N/A	34	34
Maxilla	3	N/A	9	N/A	0	0
Pelvis	8	N/A	0	0	0	0

Table 18. NISP and MNI For Dog, Raccoon, and Opossum Bones By Skeletal Element, Indian Knoll Site Continued.

Dog	NISP	MNI	Raccoon NISP	MNI	Opossum NISP	MNI
Radius	1	1	0	0	0	0
Rib	0	0	38	N/A	0	0
Ulna	0	0	0	0	0	0
Skull	0	0	38	38	0	0
Scapula	3	0	0	0	2	0
Tibia (Left)	1	1	1	1	0	0
Tibia (Right)	1	1	3	3		
Ulna (Right)	1	1	0	0	0	0
Ulna (Left)	3	3	0	0	0	0
Vertebrae- Atlas	4	4	1	1	0	0
Vertebrae- Axis	2	2	0	0	0	0
Lumbar	2		7	0	0	0
Cervical	0	0	1	1	0	0
Metacarpals	9	1	1	0	0	0

Table 18. NISP and MNI For Dog, Raccoon, and Opossum Bones By Skeletal Element, Indian Knoll Site Continued.

Dog	NISP	MNI	Raccoon NISP	MNI	Opossum NISP	MNI
Metatarsals	14		3	0	0	0
Fibula	2	0	0	0	0	0
Tarsal						
Tibia tarsal	3	0	0	0	0	0
Penis Bone	0	0	33	33	0	0
Total	101		410		37	

Table 19. NISP and MNI For Squirrel, Rabbit, and Groundhog Bones By Skeletal Element, Indian Knoll Site Webb 1974)

Squirrel	NISP	MNI	Rabbit (Cotton Tail)	MNI	Ground Hog	MNI
Femur	6	N/A	0	0	0	0
Femur (Left)	0	0	1	1	2	2
Femur (Right)	0	0	0	0	3	3
Humerus	0	0	1	1	1	1
Humerus (Left)	0	0	0	0	1	1
Humerus (Right)	0	0	0	0	2	2
Mandible	0	0	2		16	N/A
Pelvis	1	0	0	0	1	1
Radius	1				0	0
Radius (Left)	0	0	0	0	2	2

Table 19. NISP and MNI For Squirrel, Rabbit, and Groundhog Bones By Skeletal Element, Indian Knoll Site Continued.

Radius (Right)	0	0	0	0	2	2
Rib	0	0	0	0	7	0
Ulna	1	0			0	0
Skull		0	1	1	0	0
Scapula	0	0	0	0	3	0
Tibia	1	1	0	0	0	0
Tibia (Left)			1	1	0	0
Ulna (Right)	0	0	0	0	6	6
Ulna (Left)	0	0	0	0	8	8
Vertebrae- Atlas	0	0	0	0	3	3
Vertebrae- Axis	0	0	0	0	4	4
Lumbar	0	0	0	0	1	1
Thoracic	0	0	0	0	5	5
Metacarpals	0	0	0	0	0	0
Metatarsals	0	0	3	0	0	0
Total	10		9	2	67	

different from other Archaic sites in the lower Tennessee River Valley and stated that the inhabitants were similar to populations at the Stallings Island site, situated along the Savannah River. The reported differences included a population with brachycranial cranial features compared to more mesocranial cranial features found in the lower Tennessee River Valley, the absence of dog burials, and the dominance of stemmed scrapers, and disarticulated dog bones in the midden. Lewis and Kneberg (1959:162) reported five distinct strata at the site but believed that the micro-stratigraphy might also provide evidence for an immigrant population.

Soil Stratigraphy at the Kays Site (Lewis and Kneberg 1959)

The earliest occupation at the site was in Stratum V and Stratum IV, which collectively produced a four foot thick deposit of cultural material that included fresh water shells, cooking features and human burials. A sample of antler was dated from Stratum 5 to 2800 B.C.+/- 500 (Lewis and Kneberg 1959: 163). Stratum IV had visible alternating lenses of cultural deposits above what Lewis and Kneberg (1959:162) referred as lenses of “alluvium” deposits. At some point in time, Stratum IV was capped by a two foot thick deposit of culturally sterile soil (Stratum III) that separated Stratum IV from Stratum II. Stratum II was a fundamentally different cultural deposit characterized by the mounding of fresh water shells that reached three feet in thickness and 60 feet in diameter. Dates taken from Stratum 2 produced dates of 2100 B.C +/- 300, and 1630 B.C. +/- 300.

Re-Analysis Kays Landing Site (Bissett 2014)

Bissett (2014:267) reviewed the original excavation notes and profile drawings produced by the field supervisor, G. Lidberg, and provides additional clarity to site description presented in the 1959 *American Antiquity* article by Lewis and Kneberg (1959). The earliest occupation, Stratum V, was a distinct deposit of shell and sand that contained 45 human burials. Stratum IV was

described in the field supervisor's notes as bands of "carbon stained bands" interrupted by deposits of clean sand (Bissett 2014:268). These alternating "carbon stain deposits" and sand deposits formed an approximate three foot thick stratum. Stratum III ranged in thickness from two to three feet and consisted of a sand deposit. Although Lewis and Kneberg (1959:162) pointed to a flood event(s) as the origin for Stratum III, the field supervisor G. Lidberg recorded that the sand deposit lacked the qualities (in this case the striations and banding) expected in deposited sands from a flood event. Additionally, Stratum III did contain a small amount of artifacts and five human burials (Bissett 2014:268). Stratum II consisted of the shell mound with the base of the shell mound dated to 4800–4700 cal B.P. (**Table 20**) and the uppermost portion of the shell mound dated to 3104 +/- 87 cal yr B.P. Shell mounding reach approximately three feet in depth. Dating of Stratum III and Stratum II led Bissett (2014) to state that the upper part of Stratum III and the lower part of Stratum II were "contemporary" no later than 3014 and the period after 3104 cal yr B.P. was designated as Stratum I.

The Cherry Site (40BN74)

The Cherry site (40BN74) is located at the headwater of the Big Sandy River and excavated in 1941 (Bissett 2014:332; Lewis and Kneberg 1959:162). Lewis and Kneberg (1959:162) offered a small paragraph on the Cherry site in their 1959 *American Antiquity* article. They described the Cherry site as a 1.5 to 2 foot thick cultural midden that was Archaic in age and coeval with Stratum I at the Eva site. The cultural midden was not a shell mound and Lewis and Kneberg (1959:162) described the fresh water shell accumulations as being "sparse."

Re-Analysis Cherry Site (40BN74) (Bissett 2014)

Bissett (2014:267) reviewed the original excavation notes and profile drawings produced by the field supervisor, David Osborne, during the 1941 excavation of the site.

Table 20. C-14 Dates From the Kays Landing (40HY13).

Context	C-14 Dates, calibrated cal yr B.P.(Bissett 2014:315)
Stratum I	3588+/- 84
Stratum II	3104 +/- 87
Stratum II	3956 +/-83
Stratum II	4041 +/- 80
Stratum II	3975 +/- 90
Stratum II	4804 +/- 94
Stratum II	4698+/-85
Stratum III	4271 +/- 89
Stratum III	4702 +/- 84
Stratum III	4704 +/-84
Stratum IV	5430 +/- 83
Stratum V	5517 +/- 76

According to Bissett (2014:355) the primary occupations at the Cherry site was during the late Middle Archaic period and during the Late Archaic period. Both Middle Archaic and Late Archaic projectile point types were recovered from Stratum I (the only cultural stratum at the site) and intermixed through disturbances that included plowing of the site. Nonetheless, Bissett (2014: 267) believes that the cultural features and most of the burials are associated with the Late Archaic occupation based on the number of Late Archaic projectile points and the recovery of Late Archaic projectile points from the cultural features. During the Late Archaic period, hunter-gatherers constructed small structures at the site and used a large density of features to cook and store foodstuffs. The recovery of four Early Archaic projectile types and the recovery of pottery from the plowzone point to minimal use by Early Archaic and Early Woodland populations (Bissett 2014:359). Interestingly, a high number of pit features (n=44) were recorded at the site, however a small number animal bones (n=79) were reported in the field specimen log. The site exhibited a large number of cultural features (n=238), that included post molds (n=193), pits (n=44), and three features from the plowzone. The post molds were most likely the location of some type of structures built across the site. The average structure was approximately four square meters (Bissett 2014:354). The pits averaged 1.25 square meters, although four large pits were excavated at the site and reached up to 23 square meters. The function of the four large pits remains undetermined. Bissett (2014:366) produced three new radiocarbon dates from the Cherry site. These dates are presented in **Table 21**.

Animal Interments at 40BN74

A total of seven domesticated dogs were excavated at the Cherry site. All dog burials were recovered from Stratum I and could date to the Late Middle Archaic to Late Archaic periods (Bissett 2014).

Table 21. C-14 Dates From the Cherry Site (40B N74).

Context	C-14 Dates, calibrated cal yr B.P (Bissett 2014)
Stratum I	4056 +/- 67
Stratum I	4847 +/- 84

The Oak View Site (40DR1)

The Oak View site (40DR1) originally contained an uppermost shell mound strata that was thought to be several feet in thickness. Prior to the 1941 excavation, this uppermost shell layer had been disturbed through plowing and/or removed (Bissett 2014:332, Lewis and Kneberg 1959:162).

Stratum I was identified below the removed shell layer and consisted of cultural features and projectile points that dated to primarily the Late Archaic period. Cultural features at the site included pits (n=44), post molds (n=23), basin features (n=2), and thermal cooking features (n=6) (Bissett 2014:391). The post molds were distributed randomly throughout the site restricting any determination on size and type of possible structures. The Oak View site contained 81 human interments and two dog burials, all recovered from Stratum I. The human burials contained burial items that included copper beads, dog bones, and projectile points. Bissett (2014:366) produced three new radiocarbon dates from the Cherry site. These dates are presented in **Table 22**.

The Ledbetter Landing Site (40BN25)

The Ledbetter Landing site is located on the bluff overlooking the Tennessee River. The site was excavated by Clarence Moore in 1915 (Moore 1915) and again by the University of Tennessee in 1941 (Bissett 2014). The 1941 excavation revealed two soil strata, a Stratum I and a Stratum II (Bissett 2014:405). Stratum I was identified below the plowzone and consisted of a loam intermixed with freshwater shells while Stratum II contained a yellow sand horizon. Human burials (n=80) and dog burials (n=3) were recovered from Stratum I while Stratum II contained human burials (n=34) and a single dog burial (n=1) (Bissett 2014:408). Exotic items were found

Table 22. C-14 Dates From the Oak View Site (40DR1).

Context	C-14 Dates, calibrated cal yr B.P (Bissett 2014:366)
Stratum I	6975+/- 90
Stratum I	7056 +/-77
Stratum I	6189 +/- 65

in burials including copper beads, copper pieces, and shell beads. The site was occupied beginning in the Late Archaic period with a minimal occupation during the Early Woodland period. Bissett (2014:366) produced three new radiocarbon dates from the Cherry site.

These dates are presented in **Table 23**.

Cave Sites Used In The Study

Dust Cave (1Lu496)

Dust Cave (1Lu496) (**Figure 21**) is a multicomponent cave site located in northern Alabama near the Tennessee River. Components identified by Boyce Driskell during the 1990s and early 2000s included Late Paleoindian, Early Archaic, and Middle Archaic. The Middle Archaic components included the Eva/Morrow Mountain phase dated to from ca. 8400 to 6500 cal yr B.P. and the Three Mile Island phase dated to 6500 to 5600 cal yr B.P. (Sherwood et al. 2004:546, 550).

Occupations at the site began during the Late Paleoindian period and spanned 7000 years (Sherwood et al. 2004:534). Hunter-gatherers in the early Middle Archaic occupations at Dust Cave manufactured straight stemmed Kirk projectile points, built and cooked with prepared clay surfaces, and constructed small pits.

The stratigraphy for the Eva/Morrow mountain phase was divided into zones and designated by a letter of the alphabet. Zone N/P represents the transition from the Kirk straight stemmed zone to the beginning of the Eva/Morrow Mountain occupation. Human burials occur in this transition zone (Zone N/P). Sherwood et al. (1994:549) believed that the function of the cave changed during the Eva/Morrow Mountain phase, approximately 7720 cal yr B.P., from a habitation to a location for human burial (Sherwood et al. 1994). During this time, habitation activity shifted to the area around the front of the cave. Zones K, J, and E were laid down above Zone N and

Table 23. C-14 Dates From The Ledbetter Landing Site (40BN25).

Context	C-14 Dates, calibrated cal yr B.P (Bissett 2014).
1	2636+/-89
2	4489+/-88
2	4314+/-79

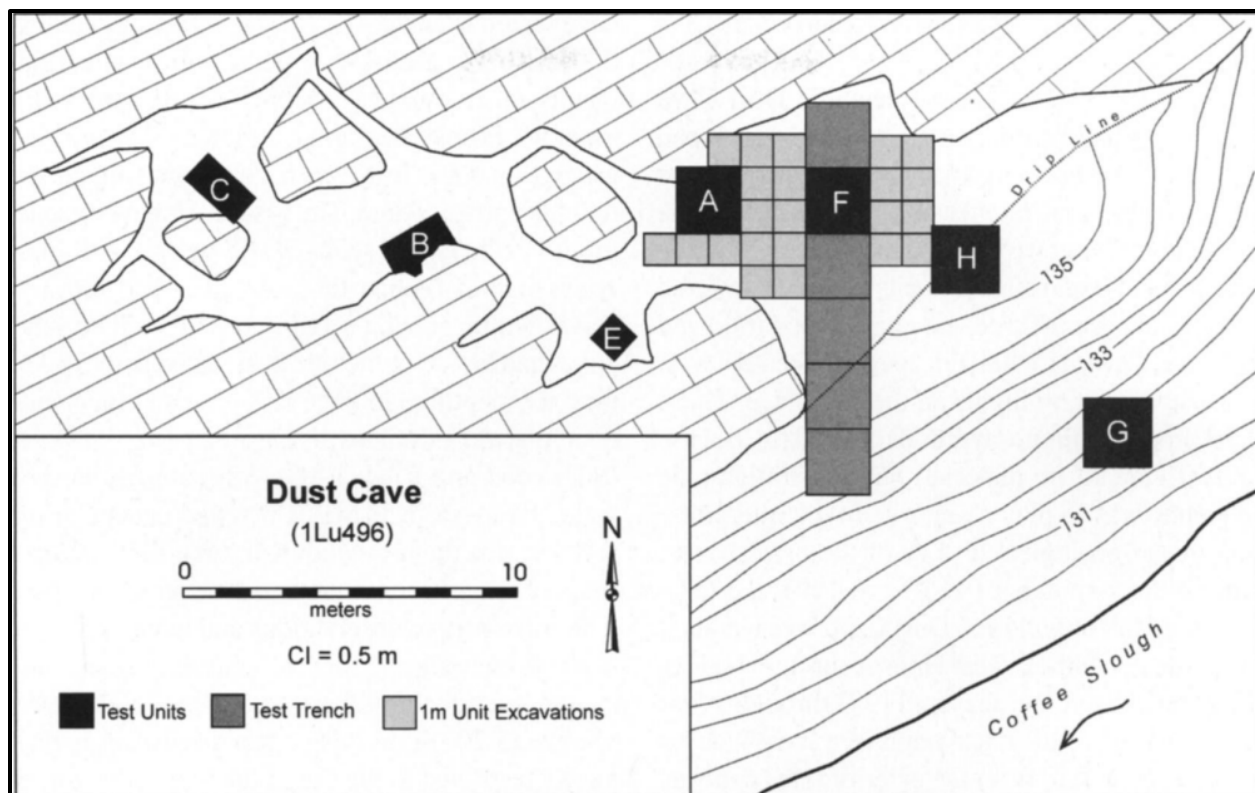


Figure 21. The Dust Cave Excavation (Sherwood et al. 1994:535).

included a concentrated habitation around the cave entrance. This period returned dates from 8400 B.C to 6000 cal yr B.P. (Sherwood 1994:550). Zone K was characterized by prepared clay surface and FCR cooking features, human and dog burials. Geomorphic analysis points to a rather dry environment in Zone K that transition to a wetter environment by Zone J. Zone J was a period when habitants used smaller pit features

while cave use became focused at the entrance of the cave. Zone E consisted of repeated use around the cave entrance, increased digging of pits, and intense occupational use (Sherwood et al. 1994:549).

The period from 6500 to 5600 cal B.C. was designated as the Benton (or Three Mile phase) and included Benton, Sykes/White Springs, Crawford Creek, and Morrow Mountain project points. Artifacts deposited during the Benton phase included bone awls, groundstone tools, bifaces, fishhooks, and animal bone points (Sherwood et al. 1994:550).

Renee Walker (1998) analyzed the faunal assemblage recovered at the site. Walker (1998:131) placed the Middle Archaic faunal assemblage into an Eva/Morrow Mountain period and in a Three Mile Island time period. The Eva/Morrow Mountain, circa 8,400 to 6,000 cal yr B.P. and corresponds to the early Middle Archaic period, while the Three Mile Island period corresponds to the late Middle Archaic period, circa 6,500 to 5,200 cal year B.P. (Walker 1998:130). During the Eva/Morrow Mountain period, inhabitants consumed a high amount of birds, NISP at 39 percent , and a high amount of mammal species, NISP at 32 percent. The inhabitants also consumed fish, NISP at 17 per cent, during the beginning years of the Middle Archaic (Walker 1998:128). White-tailed deer provided the bulk of the mammal protein with contributions to the meat diet from rabbits, squirrels, and racoons. Due to the higher fragmentation of bird bones, the majority of bird bones could only be assigned to a species. The bird bones that were complete

enough to identify the species, turkey was the most common consumed bird followed by ducks, passenger pigeon, and bobwhite. The inhabitants at the Eva/Morrow Mountain Dust Cave collected both terrestrial and aquatic turtles, including the land based Eastern box turtle and aquatic species of musk turtles, marsh turtles, and painted turtles (Walker 1998:134) (**Table 24**). By the late Middle Archaic, food strategies changed at Dust Cave as mammal bones became the most common animal bone type, NISP at 63 percent, while bird consumption decreased, NISP at 16 percent, with a decrease in fish consumption also, NISP at 12 percent. White-tailed deer provided the bulk of mammal protein, although the contribution of smaller species like squirrels, rabbits, and raccoons decrease in their overall contribution. Turtle bones also decrease during the Three Mile Phase at the site, as bones for the eastern box turtle are now absent, compared with an NISP for the Eva/Morrow Mountain period (Walker 1998:134). Aquatic turtle use also declines with musk turtles, NISP at 5, and marsh turtles, NISP at 2. Bones identified to painted turtles were absent during the Three Mile phase (Walker 1998:134). Four dog burials were recovered during the excavation of Dust Cave. The dog burials tracked to certain time periods. Dog burials #1 and #2 were buried during the later part of the site occupation during the late Middle Archaic period/Late Archaic period, while dog burials #3 and #4 were placed in the earlier Eva/Morrow Mountain period. Dog burial #1 had a Late Archaic Benton projectile point lying near the skull. One dog burial (Burial #3) was recovered from an area that was dated to 8400 cal yr B.P. while dog burial #4 was uncovered in an area that dated to 8400–5600 cal yr B.P. (Walker et al. 2005).

Black Cat Cave Site (40RD299)

The Black Cat Cave (40RD299) is a cave site located in Ruthford County, Tennessee near the town of Murfreesboro. The discovery of human bones the cave resulted in limited excavations in

Table 24. Animal Species From the Dust Cave Site (Walker 1998).

Species	Kirk Stemmed (Zone P)	Eva/Morrow Mountain	Three Mile Island
Deer	9	52	42
Eastern Cottontail Rabbit	8	10	3
Rabbit Species	6	3	2
Swamp Rabbit	2	1	1
Gray Squirrel	51	29	11
Red Fox		0	0
Raccoon	8	13	5
Opossum	7	7	2
River Otter	0	1	0
Beaver	0	2	1
Sandhill Crane	0	0	0
General Turtle Species	18	51	24
Mud or Musk Turtle	4	18	5
Pond, Marsh, Box Turtles	6	3	2
Eastern Box Turtle	2	25	0

2014 and 2015 by TDOA. Aaron-Deter Wolf led a team of TDOA archaeologists that cleaned and documented the site soil stratigraphy, screened the dirt piles left over from looter activity, produced two radiocarbon dates, and excavated a 1 meter by 1 meter test unit at the cave opening (Peres et al. 2016).

The Cave

The TDOA team cleaned one of the looter walls inside the cave and documented the site stratigraphy. The soil profile wall that was documented inside the cave did not go below the looter disturbance, but what was exposed revealed a thick stratigraphy of occupational lenses composed of ash, charcoal, and prepared clay surfaces. The TDOA team then screened the looter dirt piles in the cave interior but did not excavated any test units. Inside the cave, a large sample of faunal remains (n=8121) were recovered from the looter dirt piles and consisted of a variety of mammals, birds, reptiles, fish, and shellfish.

A total of 11 human burials were eventually determined to have been disturbed during looter activities inside the cave and additional human burials may still be present at the site.

Considering the human burials, the one dog burial, and the presence of fresh water shellfish, Peres et al. (2016) believed that the site was a ritualized, mortuary location (Peres et al. 2016).

Test Unit 1 was excavated at the cave opening and exhibited a meter deep occupation. Test Unit 1 produced an incomplete dog burial associated with a biface. A total of 1065 animal bones (excluding the 48 dog bones from the burial) and shells were recovered from Test Unit 1. The largest number of animal remains were shellfish followed by smaller amounts of deer, rabbits, squirrels, and raccoons (Peres et al. 2016) (**Table 25**).

Table 25. NISP From the Black Cat Cave Site (Peres et al. 2016).

Species	NISP
Deer	7
Eastern Cottontail	1
Eastern Squirrel	1
Red Fox	1
Raccoon	3
Sandhill Crane	2
General Turtle Species	1
Mud or Musk Turtle	1
Freshwater Bivalves (Unionidae)	492
Three ridge Mussel	7
Elliptio Mussel	12
Club sail Mussel	11
Aquatic gastropods	41

Conclusion

This chapter has presented a description of the sites and assemblages used in the analyses that follow. The lower Tennessee River Valley sites of Eva, Big Sandy, Cherry, Oak View, Ledbetter, and Kays Landing were used in this dissertation because they were the primary shell midden sites excavated from the study region (Lewis and Kneberg 1959) and whose stratigraphy have been recently reanalyzed and dated by Bissett (2014). The radiocarbon dates provided by Bissett (2014) are important because they allow for a much more precise temporal sequence than existed previously, allowing researchers to interpret site assemblages more accurately, and specifically changes in Archaic human-animal relationships through time.

The sites of Eva and Big Sandy represent the primary data used to explore Middle Archaic human-relationships in the lower Tennessee River Valley. That is because these sites have published data on the recovered faunal remains, as well as detailed stratigraphic data on the interment of animals, that are used here to examine human-animal relationships for the period 8900 to 5600 cal yr B.P. Faunal data for the Cherry, Oak View, Ledbetter, and Kays Landing sites has yet to be fully published. but there is sufficient other data (like data on dog burials) to allow an examination of changes in human-animal relationships in the study area. Finally, two cave sites are also part of the study, Dust Cave and Black Cat Cave. The Dust Cave site is one of the better excavated cave sites and one of the best documented examples of an Archaic occupation at a cave location, and the recovery of faunal remains and the identification of dog burials present the opportunity to compare human-animal relationships between shell mound sites and cave sites. Although only limited investigations were conducted at the Black Cat Cave site, the data from this site provides additional comparative data from a Mid-South cave occupation. Additionally, published faunal data from the Indian Knoll site, a Late Archaic shell

bearing site located in the Green River Valley of Kentucky, was used to provide a comparative Late Archaic faunal assemblage.

CHAPTER X

HUMAN-ANIMAL RELATIONSHIPS IN THE LOWER TENNESSEE RIVER VALLEY CIRCA 8900 TO 3600 CAL YR B.P.: AN INTERPRETATION

Introduction

The Middle and Late Archaic periods in the Mid-South was a period where changes in social organization were physically manifested across the landscape (Lewis and Kneberg 1959, Saunders et al. 2005, Sassaman and Randall 2012). The most observable display of human agency was the construction of monuments using sand, shell, and earth as building materials (Lewis and Kneberg 1959, Saunders et al. 2005, Sassaman and Randall 2012). Research on the Shell Mound Archaic has traditionally compared and contrasted different types of “monumentality” and how this Archaic monumentality compared to later chiefdom and state level Mississippian period societies. This binary approach (Archaic versus Mississippian) was ingrained very early in American archaeological theory and thought (see Sassaman 2010). By the 19th century, sand and shell mounds were interpreted within an environmental approach that linked artifact bearing sites with the deposition of meal refuse. This approach has minimized the social and historical behaviors of Archaic hunter-gatherers and how these groups organized their communities to deal with environmental and cultural changes (Claassen 2010; Sassaman 2010). Contemporary research now offers new ideas and new avenues to interpret the Shell Mound Archaic. The Shell Mound Archaic was not a single cultural phenomena, but instead a cultural setting where regional hunter-gatherers aggregated at river ripples and shoals to produce culture and history (Claassen 2010; Sassaman and Randall 2012). While differences in regional shell configurations are known, it is the relationships that was shaped at these shell configurations and shell bearing sites that hold the best evidence for understanding Middle and Late Archaic hunter-

gatherers. Sassaman and Randall (2012) and Claassen (2010, 2014) have demonstrated that shell configurations and shell bearing sites were places for human interaction and human relationship building. However, the primary focus on human relationships gives only half of the equation. The inclusion of human-animal relationships is necessary to develop a holistic model. For this dissertation, the research departs from conventional methods that analyze animal bone assemblages just to understand subsistence patterns. Instead, this research employed the concepts of social zooarchaeology (Russell 2012, 2016). Social zooarchaeology promotes human-animal relationships as one conceptual model for interpreting social behaviors and can be applied to hunter-gatherers that lived at Archaic shell bearing sites in the lower Tennessee River Valley (Russell 2012, 2016).

This research examined three models to analyze shell mound cultures in the Mid-South within the context of human-animal relationships. These models and their associated archaeological correlates include (1) an egalitarian/ecological organization model, (2) a sacred organization model, and (3) a secular organization model.

- Ecological Based Models - Because the community is egalitarian, animals may be communally owned but may also represent a specialized feasting food. Whole deer carcasses arrived at the site with a high density of large mammal bones with all skeletal elements (low, medium, and high utility) present.
- Sacred Organization Model - While some animals may be collectively owned, they will be sacrificed in public rituals at sacred locales on the landscape. Because rituals are expected to occur at seasonal aggregation locations, animal sacrifices are expected to occur in well-patterned clusters, usually following the aggregation schedules.

- Secular Organization Model - A community that shifts from a sacred organization to a secular organization is expected to use ritualized locations to conduct competitive feasting to maintain individual power and to promote social inequality. In this case, some animals are expected to represent individual wealth and prestige and may receive special treatment.

In order to test these models, several lines of evidence were incorporated into the analysis and assessed concurrently, such as when during the year these sites were occupied, how often they were occupied, and whether other evidence for special status is present (i.e., grave goods or associations with people). Most of the sites used in this dissertation were excavated in the middle 20th century. When compared to modern excavation standards, some biases are expected in the faunal assemblages, especially in the collection of animal bones from fish and from smaller animals (like, racoon, rabbit, and squirrel). One method to deal with these potential biases is to group similar bone categories into Animal Bone Groups, or ABGs.

ABGs

As discussed earlier, ABGs are analytical categories that can be used to compare animal bone deposits within sites, between sites, between regions, and between temporal periods (Morris 2014:9). The ABGs are placed in their archaeological context and then compared with other archaeological contexts.

The basic ABGs developed for this analysis include:

Articulated ABGs- Articulated ABGs include those animal skeletons that were deposited as complete or nearly (50 percent or greater) complete skeletons.

Disarticulated ABGs-include disarticulated animal bones that were separated prior to burial, usually through preparation for subsistence.

Large Mammal ABG- includes the disarticulated animal bones of deer and bear.

Small Mammal ABG-includes the disarticulated bones of raccoons, opossums, rabbits, squirrels, groundhog, beaver, mink, and muskrat.

Data on articulated and disarticulated ABGs for the examined sites are presented in **Tables 26 and 27**, respectively. The only articulated ABG for mammals identified at sites in the lower Tennessee River Valley is the domesticated dog. Other large mammals like deer and bear were not deposited as articulated ABGs but as disarticulated ABGs. Small mammal ABGs, like raccoons, opossums, beaver, wildcats, squirrels and rabbits were also not deposited as articulated ABGs but as disarticulated ABGs (**Table 26 and Table 27**).

The Articulated and Disarticulated Dog ABGs

Articulated dog ABGs are present at both Middle and Late Archaic sites. The analysis of articulated dog ABGs indicates that Middle Archaic hunter-gatherers used the human-dog relationship in different ways than that of Late Archaic hunter-gatherers. **Table 26** shows the articulated and disarticulated dog ABGs through the Middle and Late Archaic periods in the lower Tennessee River Valley. The number of articulated dog ABGs, pre 6300 cal yr B.P., are clustered at only two sites, Big Sandy and Eva. The first cluster appeared at Big Sandy, circa 8600-8200 cal yr B.P., while the second cluster appeared at Eva, circa 6300 cal yr B.P. After 6300 cal yr B.P., articulated dog ABGs are spread throughout the lower Tennessee River Valley. Disarticulated dog ABGs were also recovered from the Middle Archaic contexts at the Eva and Big Sandy sites. The disarticulated dog ABGs recovered from Stratum IV and Stratum V at the Eva site were most likely consumed as meals while the disarticulated dog ABGs from Big Sandy and Eva Stratum II were most likely from disturbed burials. Disarticulated dog bones (n=206) were reported by Bissett (2014) from Stratum II at Eva, but the context is unreliable, and the bones may be from disturbed articulated dog ABG. If these dog bones were consumed, the low

Table 26. Articulated ABGs by Species and By Site Examined in this Study.

ABG	Species	Site	Present	Context
Articulated ABG	Deer	Eva	No	N/A
Articulated ABG	Deer	Big Sandy	No	N/A
Articulated ABG	Deer	Indian Knoll	No	N/A
Articulated ABG	Deer	Dust Cave	No	N/A
Articulated ABG	Deer	Black Cat	No	N/A
Articulated ABG	Deer	Cherry	Unknown	N/A
Articulated ABG	Deer	Kays Landing	Unknown	N/A
Articulated ABG	Deer	Oak View	Unknown	N/A
Articulated ABG	Deer	Ledbetter	Unknown	N/A
Articulated ABG	Dog	Eva	Yes	Stratum II and Stratum III
Articulated ABG	Dog	Big Sandy	Yes	Stratum I and Stratum II
Articulated ABG	Dog	Indian Knoll	Yes	Late Archaic
Articulated ABG	Dog	Cherry	Yes	Late Archaic
Articulated ABG	Dog	Kays Landing	Yes	Late Archaic
Articulated ABG	Dog	Oak View	No	Late Archaic
Articulated ABG	Dog	Ledbetter	No	Late Archaic
Articulated ABG	Bear	Eva	No	N/A

Table 26. Articulated ABGs by Species and By Site Examined in this Study Continued.

ABG	Species	Site	Present	Context
Articulated ABG	Bear	Big Sandy	No	N/A
Articulated ABG	Bear	Cherry	No	N/A
Articulated ABG	Bear	Kays Landing	No	N/A
Articulated ABG	Small Mammal	Eva	No	N/A
Articulated ABG	Small Mammal	Big Sandy	No	N/A
Articulated ABG	Small Mammal	Indian Knoll	No	N/A
Articulated ABG	Small Mammal	Cherry	No	N/A
Articulated ABG	Small Mammal	Kays Landing	No	N/A
Articulated ABG	Small Mammal	Oak View	No	N/A
Articulated ABG	Small Mammal	Ledbetter	No	N/A

Table 27. Disarticulated ABGs by Species and by Site Examined in this Study.

ABG	Species	Site	Present	Context
Disarticulated ABG	Deer	Eva	Yes	High Density in Strat V and IV
Disarticulated ABG	Deer	Big Sandy	Yes	Stratum I and Stratum II
Disarticulated ABG	Deer	Indian Knoll	Yes	Shell Mound
Disarticulated ABG	Deer	Dust Cave	Yes	Cave
Disarticulated ABG	Deer	Black Cat	Yes	Cave
Disarticulated ABG	Deer	Cherry	Yes	Late Archaic
Disarticulated ABG	Deer	Kays Landing	Yes	Late Archaic
Disarticulated ABG	Deer	Oak View	Yes	Late Archaic
Disarticulated ABG	Deer	Ledbetter	Yes	Late Archaic

Table 27. Disarticulated ABGs by Species and by Site Examined in this Study Continued.

ABG	Species	Site	Present	Context
Disarticulated ABG	Dog	Eva	Yes	Middle Archaic
Disarticulated ABG	Dog	Big Sandy	Yes	Stratum I and Stratum II
Disarticulated ABG	Dog	Indian Knoll	Yes	Late Archaic
Disarticulated ABG	Dog	Cherry	Unknown	Late Archaic
Disarticulated ABG	Dog	Kays Landing	Yes	Late Archaic
Disarticulated ABG	Dog	Oak View	Probably Not	Late Archaic
Disarticulated ABG	Dog	Ledbetter	Probably Not	Late Archaic
Disarticulated ABG	Bear	Eva	No	Middle Archaic
Disarticulated ABG	Bear	Big Sandy	Yes	Middle Archaic

Table 27. Disarticulated ABGs by Species and by Site Examined in this Study Continued.

ABG	Species	Site	Present	Context
Disarticulated ABG	Bear	Cherry	Unknown	Late Archaic
Disarticulated ABG	Bear	Kays	Unknown	Late Archaic
Disarticulated ABG	Small Mammal	Eva	Yes	Middle Archaic
Disarticulated ABG	Small Mammal	Big Sandy	Yes	Middle Archaic
Disarticulated ABG	Small Mammal	Indian Knoll	Yes	Late Archaic
Disarticulated ABG	Small Mammal	Cherry	Yes	Late Archaic
Disarticulated ABG	Small Mammal	Kays Landing	Yes	Late Archaic
Disarticulated ABG	Small Mammal	Oak View	Yes	Late Archaic
Disarticulated ABG	Small Mammal	Ledbetter Landing	Yes	Late Archaic

NISP count is more indicative of a special food type for feasting and not as a daily, or common food source. Prior to the discussion on the articulated dog ABGs by site, and temporal period, a few general interpretations about dog size and the taboo on dog consumption (**Table 28**) control of dogs, and dog ownership are presented below.

Size of Archaic Dogs

Archaeologists associate the size of artifacts with hunter-gatherer social organization and with the creation of socialized landscapes. Size, as a culturally influenced component, was used by Archaic hunter-gatherers to influence social perceptions, to accommodate and direct social space, and to align lived experiences with religious or cosmological ideas. Some Archaic hunter-gatherers are thought to have organized themselves in types of social organizations other than egalitarian (Sassaman 2010, 2011; Walthall and Koldehof 1998). For the Archaic period, hypertrophic artifacts have included projectile points, bannerstones, or grooved axes (Sassaman 2010, 2011; Sassaman and Randall 2007; Walthall and Koldehof 1998). The manufacture of hypertrophic projectile points occurred during the Late Paleoindian/Early Archaic Dalton Culture in the central Mississippi Valley (Walthall and Koldehof 1998), and again with the Benton Interaction sphere that appeared in eastern Mississippi, northern Alabama, and central Tennessee during the Late Archaic period (Sassaman 2010). Other artifact categories where hypertrophic examples have occurred include bannerstones and grooved axes, although their regional distributions are not as well documented (Sassaman 2010, 2011; Sassaman and Randall 2007). Additionally, the use of a Standard Unit of Measurement for earthen mounds in the lower Mississippi River Valley (Clark 2004), highlight the cultural importance that size and design held to Archaic hunter-gatherers as expressions of social identity. Shell ridges and shell rings

Table 28. Articulated and Disarticulated Dog ABGs in the Archaic Lower Tennessee River Valley.

Time Period cal yr B.P.	Site	Context	Articulated Dog ABGs	Disarticulated Dog ABGs
Late Archaic Period-- Houses Appear, Exotic Trade Items Appear, Increase in Items in Human Interments				
2560	Ledbetter Landing	Stratum I	Yes (n=3)	Animal Bones Not Reported
3800	Kays Landing	Stratum I	Yes (n=1)	Animal Bones Not Reported
3860-3990	McDaniel	Stratum I	Yes (n=4)	Animal Bones Not Reported
No dates but Late Archaic	McDaniel	Stratum II	Yes (n=3)	Animal Bones Not Reported
4005-3889	Ledbetter landing	Stratum II	Yes (n=1)	Animal Bones Not Reported
4280-3713	Oak View	Stratum I	Yes (n=2)	Animal Bones Not Reported
Post 6000	Cherry	Stratum I	Yes (n=6)	Animal Bones Not Reported

Table 28. Articulated and Disarticulated Dog ABGs in the Archaic Lower Tennessee River Valley Continued.

Post 6000	Eva	Stratum I-Non Shell Occupation	Yes (n=2)	No
Late Middle Archaic/Late Archaic Transition				
6300	Eva	Stratum II Top- Shell Mounding Comes to an End	Yes (n=15)	No
Articulated Dog ABGs appear at the end of Stratum II (Stratum II Top)				
7500-6300	Eva	Stratum II Shell Mound	No (n=0)	No
Eva Begins 1200 year period of shell mound construction, no articulated dogs ABGs				
7500-6300	Big Sandy	Stratum I and Stratum II	No (n=0)	No
8200-7500	Big Sandy	Stratum I and Stratum II	No (n=0)	No
8200-7500	Eva	Stratum III	Yes (n=1)	No
The main occupation at Big Sandy ends, Dust Cave transitions to habitation				
8900-8200	Big Sandy	Stratum I and Stratum II	Yes (n=11)	Yes
8900-8200	Dust Cave	Back of Cave	Yes (n=2)	No (n=0)

Table 28. Articulated and Disarticulated Dog ABGs in the Archaic Lower Tennessee River Valley Continued.

8900-8200	Eva	Stratum V	No (n=0)	Yes (n=46)
8900-8200	Eva	Stratum IV	No (n=0)	Yes (n=22)

were also most likely constructed using cultural influenced ideas about size and configuration. This intersection of size and design with culture was meant to historize traditions, to historize geography, and to create shared social identities (see Sassaman and Randall 2012). Size, either for hypertrophic projectile points, or for mounds/monuments, was a social expression embedded with meaning and agency. If the size of certain projectile points and the construction of monumentality were embedded with meaning and agency, then the size of Archaic domesticated dogs in the lower Tennessee River Valley might also be considered a form of social expression. The longevity of this standardized “beagle” sized dog (see Warren 2000) from 8600 to 3200 cal yr B.P. was a product of culturally influenced decisions. Hunter-gatherers, living in the lower Tennessee River Valley, could have chosen to create hybrids by breeding their domesticated dogs with wolves or other wild canids. Wolf bones have been reported from the Dust Cave site (Walker 1998), from the Big Sandy site (Osborne 1942), and from the Eva site (Bissett 2014). Although wolf bones were reported in very small numbers, their presence at shell bearing sites confirms that wolves were available for cross breeding during the Archaic in the Mid-South. The longevity of the standard Archaic dog size is interesting because domesticated dogs were not common at Middle Archaic sites but did occur as two clusters of articulated dog ABGs, separated by almost 1200 years. One articulated dog ABG cluster occurred at the Big Sandy site circa 8600 cal yr B.P. while the second cluster of articulated dog ABGs occurred at the Eva site around 6300 cal yr B.P. The cause for this longevity is Archaic dog size is most likely due to a cultural taboo on dog size or a cultural preference for dog size. Middle and Late Archaic dog size could have also been influenced by changes in social space where smaller dogs were perceived as better for living with humans (see Darcy 1990).

Food Taboos

Dogs were not an important subsistence food source during the Middle Archaic period evident by the small number of disarticulated dog bones at the Big Sandy and Eva sites. Based on the absence of domesticated dogs at the Eva shell mound (Stratum II) for almost 1200 years, some type of taboo on dog consumption and/or a taboo against dog ownership was in place very early in the lower Tennessee River Valley, beginning sometime around 8200 cal yr B.P.

The best context for pre-8200 cal yr B.P. dog consumption in the lower Tennessee River Valley was reported by Lewis and Lewis (1961) from the Eva site. A total of 68 disarticulated dog bones were reported from Stratum V, which has since been dated to 8900 to 8200 cal yr B.P. by Bissett (2014). These dog bones were deposited in areas that were clearly used for consumption activities and not from the disturbance from articulated dog deposits. Additionally, articulated dog ABGs were not recovered in either Stratum V or in Stratum IV at Eva.

The low number of disarticulated dog ABGs point to these dogs as unique food items, likely used in feasting. Hayden (2001:30) states

Notably, in order to create a favorable disposition among guests, hosts generally try to demonstrate the specialness and importance of the guests by presenting them with special foods, drinks, gifts, and ritual displays as indications of how much the hosts value their guests.

When dogs are utilized as a subsistence animal, disarticulated dog ABGs leave a large faunal signature in the archaeological record. Synder's (1991:364) analysis of faunal remains from sites located on the Nebraska Plains is one example. Synder (1991:364) reported dog bones for two sites, the Gray site (25CX1) and the Packer site (25SM9), occupied by the Pawnee Indians between A.D. 1010 and A.D. 1670. The density of disarticulated dog ABGs at Pawnee sites

(where dogs were consumed for subsistence) with the disarticulated dog ABGs from Stratum V at the Eva site (Lewis and Lewis 1961). When the number of dog bones from Eva are compared to the dog bones from the Gray and Packer sites, the data indicate that dogs were not a major part of the subsistence base at Eva in Stratum IV and in Stratum V (**Figure 22 and Figure 23**).

Dogs were known to be consumed by Native Americans. The Pawnee depended on a seasonal supply of buffalo meat for their protein supply; however, during winter months the Pawnee experienced periods of food scarcity and food shortages (Synder 1991). The Pawnee mitigated these winter food shortages through the consumption of dogs. A high density of disarticulated dog bones were recovered from the Gray and Packer sites, with 32 % of the faunal remains consisting of dog bones from the Gray site while dog bones comprised 28% of the Packer faunal assemblage.

Another part of a food taboo is the removal of a stable supply of calories from the subsistence system for some or all people. Synder (1991:370) reported that dogs from the historic Pawnee were purposely fattened and on average provided an estimated 111,000 calories (111.8 kcal) with 23.5 grams of fat and 20.5 g of protein. For comparison, an average deer can provide up to 554,000 calories (554 kcal). From a caloric standpoint, it would have taken 4 to 5 dogs to equal a single deer.

According to the American Kennel Club (www.akc.org), a beagle dog has on average 5 to 6 puppies per litter with the maximum of 10 puppies per litter, so Archaic hunter-gatherers could have efficiently produced dogs as a food supply if that were their objective or bred them to varying sizes. Taboos on dog consumption and dog ownership, and maintenance of size standardization, were most likely in place to help preserve the egalitarian organization that is

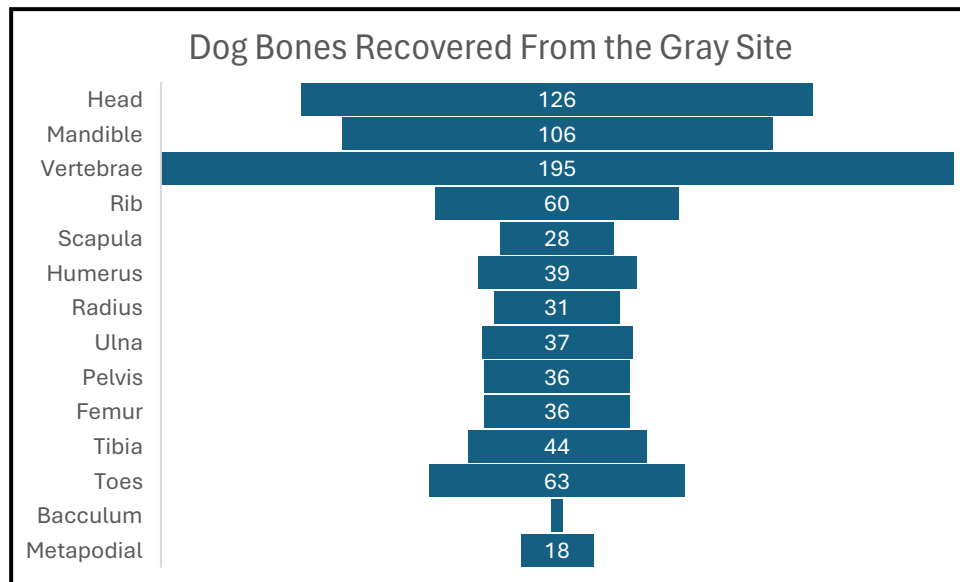


Figure 22. A Comparison of Disarticulated Dog Bones from the Gray Site and from the Eva Site.

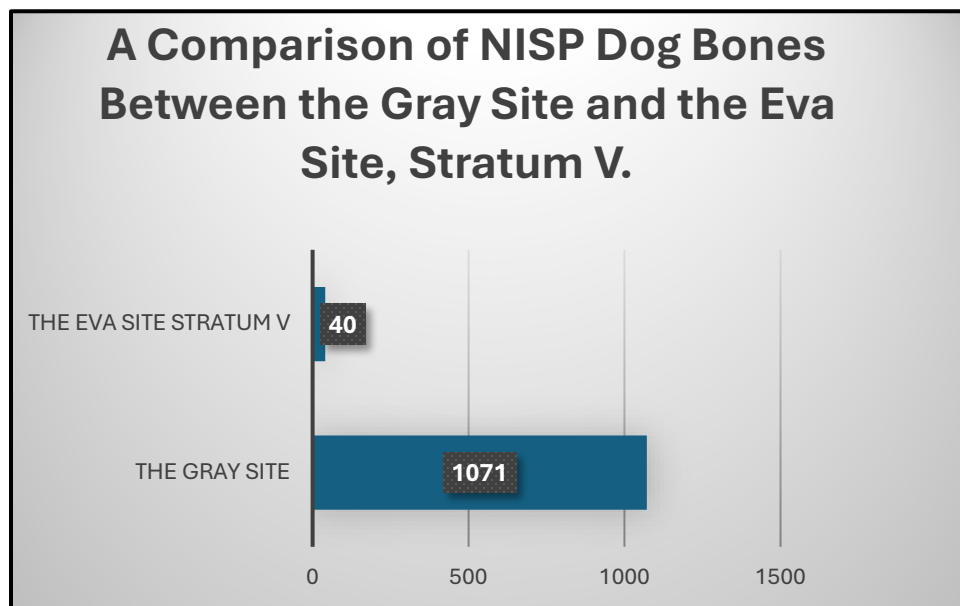


Figure 23. Bar Graph Showing the NISP for Disarticulated Dog Bones at the Eva and Gray Sites.

inferred to have been present during the interval from 8600 to 6300 cal yr B.P. in the lower Tennessee River Valley.

Gender and Dog Use

In egalitarian hunter-gatherer societies, the human-animal relationship between humans and small animals, when it comes to hunting/trapping, processing, and subsequent distribution, is typically within the realm of women (Kelly 2013; Snyder 1991). Ethnographic studies show that women hunt and distribute the fat and protein from small animals to other women as a social device to create and maintain woman to woman relationships. In contrast, men usually hunt large animals and follow a different set of cultural rules for sharing food. If animal size dictates gender relationships with animals, then the small sizes of Archaic dogs should correspond with the control/ownership/social sphere of women (Synder 1991).

The structure that hunter-gatherer groups used to integrate dogs into their communities can range from dog ownership by individuals, to the control of dogs that restricts individual ownership, and to a total restriction on ownership (a taboo). These different modes may be linked to certain hunter-gatherer social organizational types during the Archaic. Individual ownership is expected in transegalitarian hunter-gatherer communities where property ownership is allowed while restrictions on dog ownership is expected with egalitarian hunter-gatherers.

Dog ownership, especially if that ownership was oriented toward food production, may have been disruptive to existing egalitarian social structures, resulting in transegalitarian or social hierarchies. Domesticated dogs, used by men for hunting, may have increased higher yields for deer meat but the entrenched rules for sharing would have restricted males from using dogs to increase hunting success that could have then been used to develop unequal hierarchies. The biggest change would have been with women, as their procurement and distribution of small

animal protein and fat was not as socially regulated as that of men and thus more susceptible to the creation of surpluses through the use of hunting dogs. Additionally, the ownership of dogs by individual women could have created a surplus of small animal meat that would have increased the social power of those women that owned dogs.

The ownership of dogs by women would have allowed individual women to capture/kill more game animals, consequently leading some women to obtain more animal meat for sharing and for the creation of social debts with those women that did not own dogs. Changes in the power relationships of egalitarian women would have had ripple effects throughout the community, most likely resulting in larger organizational changes. The increased distribution of small game by women would have competed with the hunting of large animals, like deer, while at the same time helping create more complex social structures, and more formalized divisions of labor.

Articulated and Disarticulated Dog ABGs 8600 -8200 cal yr B.P.

Articulated and disarticulated dog ABGs was found at the Big Sandy, Eva, and Dust Cave sites during the 8600 to 8200 cal yr B.P. timeframe. **Figure 24** and **Table 29** compares the disarticulated and articulated dog ABGs between the Big Sandy, Dust Cave, and Eva sites. While Osborne (1942) reported Stratum I and Stratum II at the Big Sandy site as different temporal occupations, the dating by Bissett (2014) has confirmed that Stratum I and Stratum II were occupied roughly at the same time, during the interval from 8600 to 8200 cal yr B.P. Articulated dog ABGs at Big Sandy numbered only 11 bones in Stratum II while disarticulated dog ABGs numbered 42 from Stratum I while five articulated dog ABGs and six articulated dog ABGs were found in Stratum II at the Big Sandy site (Osborne 1942). There were no articulated dog ABGs at the Eva, Stratum V and Stratum IV site during this time period although the Eva site did produced 68 disarticulated dog ABGs from Stratum V and from Stratum IV (Bissett 2014, Lewis

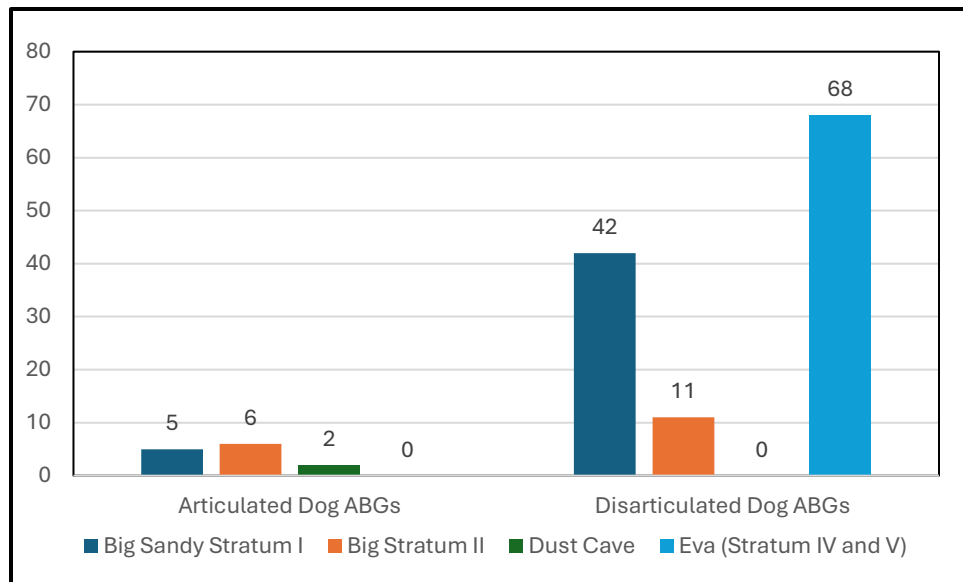


Figure 24. Articulated and Disarticulated Dog ABGs at the Eva, Big Sandy and Dust Cave Sites. There were no reported Disarticulated Dog ABGs from Dust Cave (Walker 1998).

Table 29. Articulated Dog ABGs Approximately 8900-7500 cal yr B.P.

Site	Articulated Dog ABGs	Disarticulated Dog ABGs
Big Sandy Stratum I	5	42
Big Sandy Stratum II	6	11
Dust Cave	2	0
Eva	0	68

and Lewis 1961). Two articulated dog burials and no disarticulated dog ABGs were recovered at the Dust Cave site during this time period (Walker et al 2005). The articulated and disarticulated dog ABGs for Big Sandy, Eva, and Dust Cave are discussed in more detail below.

Articulated and Disarticulated Dog ABGs and Social Space at Big Sandy, Eva and Dust Cave

The Big Sandy site provides the most visible transition in the use of social space and in changing human-animal relationships when dog ABGs are examined. The two distinct cultural strata (Stratum I and Stratum II) identified at the Big Sandy site are now believed to have developed during the same time, circa 8600 to 8200 cal yr cal B.P. **Figure 25** shows the location of Stratum I and Stratum II at the Big Sandy site. Stratum I was identified as a layer of red brown clays and humic layers that was spread across the whole site (Bissett 2014:106) with a focus of domestic utilization on the ridge top.

The ridge top at Big Sandy contained the majority of non-burial features (**see Figure 25**). Human and dog burials were placed in the eastern portion of the site, in an area slightly downslope from the ridge. Sometime from 8600 to 8200 cal yr B.P. the inhabitants at Big Sandy began to deposit shell, from freshwater shellfish) in the eastern portion of the site and continued to inter humans and dogs in this new shell deposit. Articulated dog ABGs was a practice that began in Stratum I with five articulated dog ABGs and continued after the shell deposit was initiated with six dog ABGs placed in Stratum II. Disarticulated dog ABGs were present at Big Sandy with 42 disarticulated ABGs reported from Stratum I and 11 disarticulated dog ABGs reported from Stratum II (Osborne 1942:82). The placement of shells at Stratum II at the Big Sandy site may

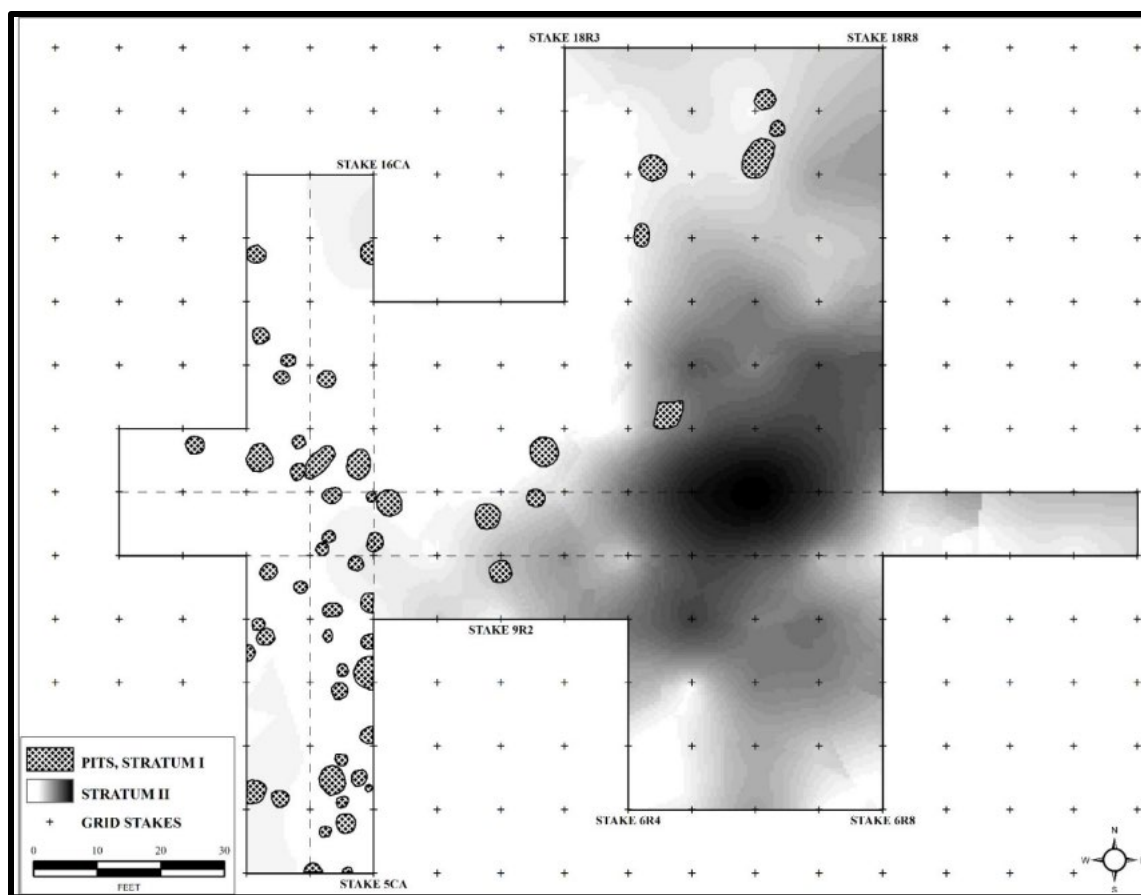


Figure 25. The Big Sandy Excavation Showing the Location of Stratum I Ridgetop and Stratum II Shell Covered Cemetery (Bissett 2014:110).

.have served as a capping event that covered the original articulated dog ABGs in Stratum I, creating a new surface. The ridgetop, where domestic activities were taking place, was not covered with this shell deposit.

A comparison of the disarticulated ABGs for Stratum I and Stratum II at Big Sandy shows very little variation in the percentage of carcass part distribution between the two strata. The percentage of hind and fore limbs (percent of NISP) are similar between Stratum I and Stratum II and it is suggestive that the same consumption activities continued at Big Sandy following the creation of Stratum II (this is discussed later in the chapter).

The two articulated dog ABGs recovered from the Dust Cave site were identified in the back portion of the cave west of the dripline. According to Sherwood et al. (1994:549), Dust Cave functioned as a place for human burials during the initial stages of this time period transitioning from a burial location to a denser habitation site toward the end of this period. The two articulated dog ABGs at the Dust Cave are dated circa 8400-6000 cal yr B.P. based on radiocarbon dating from the soil matrix adjacent to the articulated dog ABGs (Sherwood et al. 1994). At the same time, the inhabitants at the Eva site that produced Stratum V, and Stratum IV did not deposit articulated dog ABGs, but did deposit disarticulated dog ABGs in Stratum IV and Stratum V (the earliest occupations for the Middle Archaic period at the site). A total NISP of 68 disarticulated dog ABGs were recovered from Stratum IV and Stratum V (Stratum V=22, Stratum IV=46) (Bissett 2014). Disarticulated dog ABGs were also recovered from the Big Sandy site., however in a different context. The disarticulated dog ABGs from Big Sandy Stratum I and from Stratum II were most likely dog bones from articulated dog ABGs and not part of consumption events. While articulated dog ABGs were absent at the earliest occupational use at the Eva site, the disarticulated dog ABGs recovered from Stratum IV and Stratum V were

most likely leftover debris from consumption events. Bissett (2014: 244) described Stratum V as having three concentrations of disarticulated animal bone ABGs while the disarticulated dog ABGs in Stratum IV were distributed across the stratum. One concentration in Stratum V was in the southeastern part of the site, another concentration was in the southeastern corner of the site, while another concentration was in the western portion of the site.

The disarticulated dog ABGs that were recovered from Stratum V and from Stratum IV were intermixed with the other animal species that were consumed. As a result, the disarticulated dog bones from Eva Stratum V and IV were considered as meal debris. In contrast, the disarticulated dog ABGs from Big Sandy were most likely recovered from the cemetery area and represent the disturbance of articulated dog ABGs and not evidence for consumption (based on the small number of disarticulated dog bones).

The activities of the people at the Eva site (circa 8600-8200 cal yr B.P.) was fundamentally different with regard to the use of dogs from what was occurring at the Big Sandy and Dust Cave sites. Hunter-gatherers at Eva did not deposit articulated dog ABGs but instead deposited disarticulated dog ABGs. The differences between human-dog relations at the Eva, Big Sandy, and Dust Cave sites were that the Big Sandy and Dust Cave sites used articulated dog ABGs in public performance at their gatherings while hunter-gatherers at the Eva site used disarticulated dog ABGs at their gatherings. The difference in the overall animal densities at the Eva and Big Sandy sites is additional evidence for different activities. Hunter-gatherers at Eva deposited a large number of disarticulated animal bones (12,407 animal bones) when compared to the Big Sandy site (3,114 animal bones) (Lewis and Lewis 1961). The difference in the animal bone count at the two sites did not come from equivalent excavations. A total of 930 meters square (10,000 feet square) was excavated at the Big Sandy site while 315.9 meters square (3400 feet

square) was excavated from the Eva site (Bissett 2014). This large animal bone assemblage at Eva may be evidence for feasting at the Eva site that was absent the public performances associated with articulated dog ABGs at the Big Sandy and Dust Cave sites (Bissett 2014).

Articulated and Disarticulated Dog ABGs 8200 -7500 cal yr B.P.

The clustering of articulated dog ABGs disappear in the lower Tennessee River Valley circa 8200-7500 cal yr B.P. (see **Figure 26**). A single articulated dog ABG was present at the Eva site, identified in Stratum III. The deposit of a single dog ABG at Eva Stratum III is difficult to interpret as articulated dog ABGs were absent from Eva after this single deposit for the next 1200 years (see Bissett 2014, Lewis and Lewis 1961). The single articulated dog ABG appeared at the base of the shell mound stratum (Stratum II) and is similar to the deposition of dog ABGs at the cave sites. The deposit of a single articulated dog ABG at the base of the shell mound at Eva may have ceremonial implications.

The Absence of Dog ABGs 7500 to 6200 cal yr B.P.

After the deposit of the single articulated dog ABG in Stratum III at Eva, there is a 1200 year hiatus in any articulated dog ABGs in the lower Tennessee River Valley (see Lewis and Lewis 1961). Dogs were absent for most of Stratum II at Eva, however dogs appeared in the later stages of Stratum II right before the transition to the shell free Stratum I. Stratum II was a very distinctive deposit that contained 109 human interments and 15 articulated dog ABGs. Stratum II was a true shell mound that reached approximately 1.25 meters in thickness at the center and about a 30 cm thickness at the edges (Bissett 2014:250). Recovered artifacts and faunal material decrease in Stratum II, especially when compared to the high density of artifacts and faunal remains recovered from Stratum IV (Bissett 2014:253). Articulated dog ABGs in the lower Tennessee River Valley reappear at the Eva Stratum II/I transition. This clustering of articulated

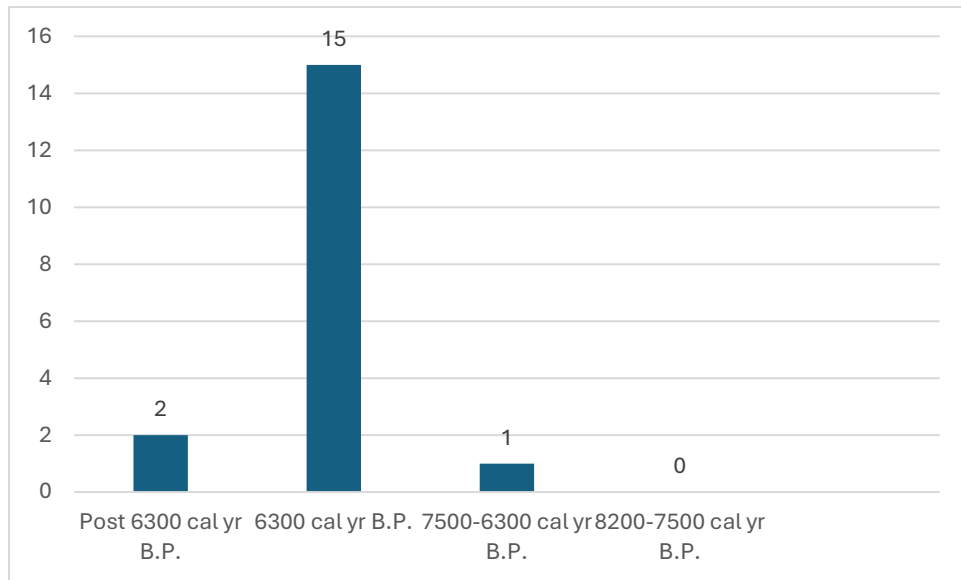


Figure 26. The Number of Articulated Dog ABGs through Time At the Eva Site. The 8200-7500 cal yr B.P. has Zero Articulated Dog ABGs.

dogs ABGs at Eva stratum II/I transition is discussed below.

Articulated and Disarticulated Dog ABGs post 6300 cal yr B.P.

The post 6300 cal yr B.P. time period interval represents the second, and largest temporal clustering of articulated dog ABGs in the lower Tennessee River Valley. This second cluster of articulated dog ABGs occurred at the Eva site at the Stratum II/I transition, or what Lewis and Lewis (1961) referred to as Stratum II Top. A total of 17 articulated dog ABGs were recovered from Stratum II Top (n=15) and from Stratum I (n=2) at the Eva site. Articulated dog ABGs were not deposited throughout most of the history of Stratum II, only at the end of Stratum II. It was at the end of this 1200 year period that hunter-gatherers began to deposit this second cluster of articulated dog ABGs at the end of Stratum II, a sub-stratum designated by Lewis and Lewis (1961) as Stratum II Top. Stratum I represents the shell free portion of the site that developed post 6300 cal yr B.P. (Bissett 2014).

After Stratum II, only two articulated dog ABGs were recovered from the shell free strata of Stratum I. Stratum I was heavily disturbed through years of plowing, which made it somewhat difficult to accurately date (Bissett (2014:256).

Stratum I at Eva was distinctive from Stratum II in that shell mounding ceases, burial goods double in number, articulated dog ABGs decrease to just two articulated dog ABGs, a decrease from 15 articulated dog ABGs just below Stratum I. Bissett (2014:255) suggests that the appearance of the shell free deposit in Stratum I could potentially be contemporary with Stratum II. If true, this would be the reverse situation that occurred at the Big Sandy site circa 8600–8200 cal yr B.P. where hunter-gatherers used a shell free context for articulated dog ABGs before switching to a shell context for articulated dog ABGs. Regardless, the decrease in articulated dog ABGs along with the decrease in shell accumulation points to cultural changes after 6000 cal

B.P. at the Eva site (Bissett 2014:256). During the period *post* 6000 cal yr B.P., hunter-gatherers deposited three articulated dog ABGs at Dust Cave and one articulated dog ABG at the Black Cat Cave site. The three articulated dog ABGs were dated using carbonized charcoal from the surrounding matrix and resulted a rather long date range circa 7851 to 6450 cal yr B.P. (Walker et al. 2005:86) while the single articulated dog ABG at the Black Cat Cave site dates circa to 6460 to 6360 rcbp (Peres et al. 2016:191). The presence of one to three articulated dog ABGs at these two cave sites correspond with the transition from Eva Stratum II Top to Stratum I where the clustering of articulated dog ABGs shift to smaller counts of articulated dog ABGs (from 15 to 2 at the Eva Stratum II/Stratum I transition) (Bissett 2014; Lewis and Lewis 1961).

Articulated and Disarticulated Dog ABGs 5600 to 3200 cal yr B.P

The time period from 5600 to 3200 cal yr B.P. is represented by changes in how articulated dog ABGs are deposited at Late Archaic sites throughout the lower Tennessee River Valley.

Radiocarbon dating at McDaniel, Ledbetter, and Oak View places their occupations sometime from 4280 to 2560 cal B.P., for the most part falling within this Late Archaic range.

During the Late Archaic period, large numbers of articulated dog ABGs are no longer deposited in clusters but instead were deposited in smaller numbers but spread out over more sites (**see**

Figure 27 and Figure 28). **Figure 28** shows a comparison of articulated dog ABGs at the Late

Archaic sites of Oak View, McDaniel, Kay's Landing, Ledbetter Landing, and the Cherry site.

The articulated dog count is also provided from the Indian Knoll site from the Green River Valley in Kentucky to add another Late Archaic shell bearing site to the analysis . This shift in the use of articulated dog ABGs after 5600 cal yr B.P. is interpreted as a shift in the human-dog relationship, from a more ceremonial use/control to individual ownership where dogs became private property. This interpretation is based on the regional distribution of articulated dog

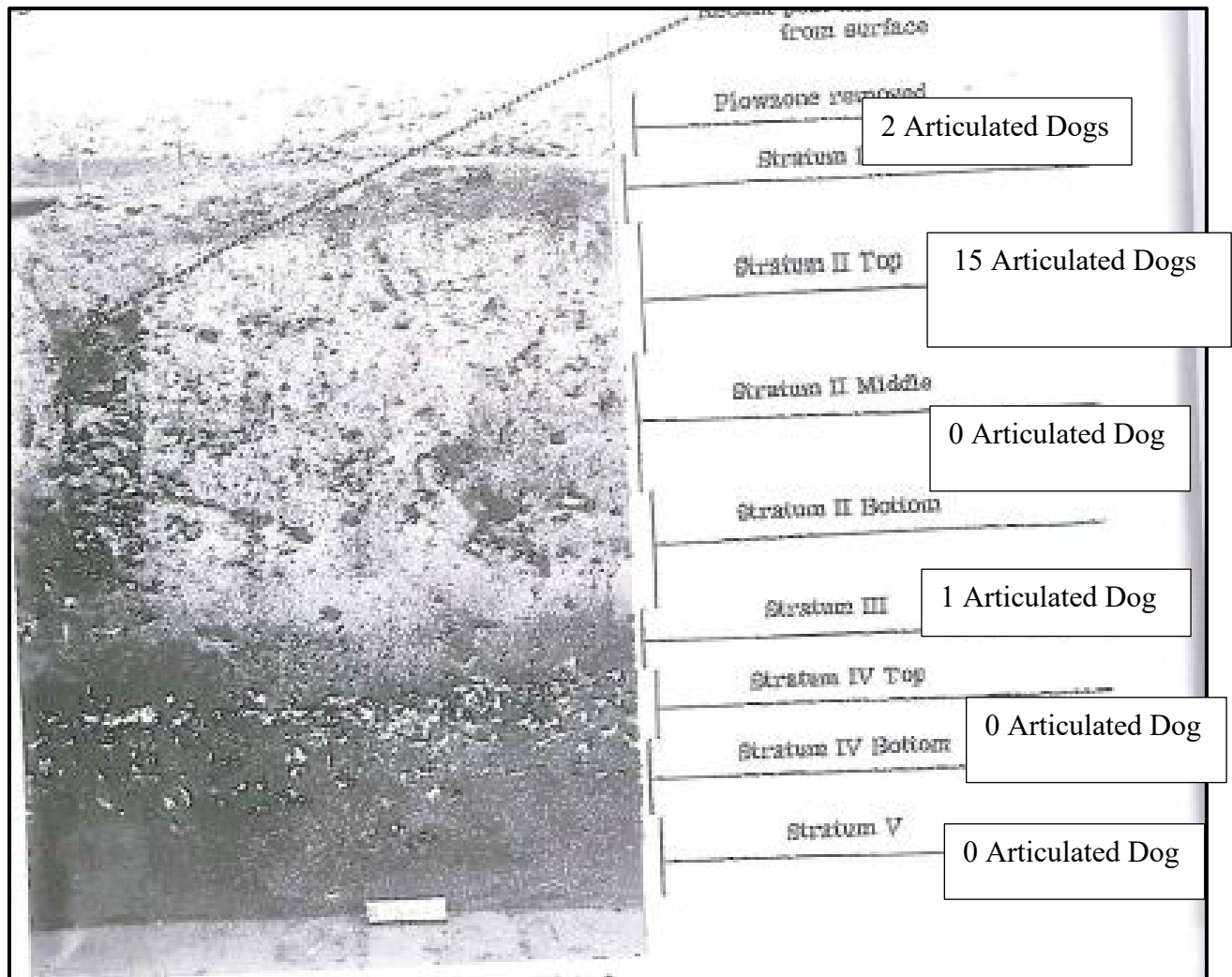


Figure 27. The Soil Stratigraphy at the Eva Site Showing the Locations of the Articulated Dog ABGs. (Data and Illustration modified from Lewis and Kneberg 1961)

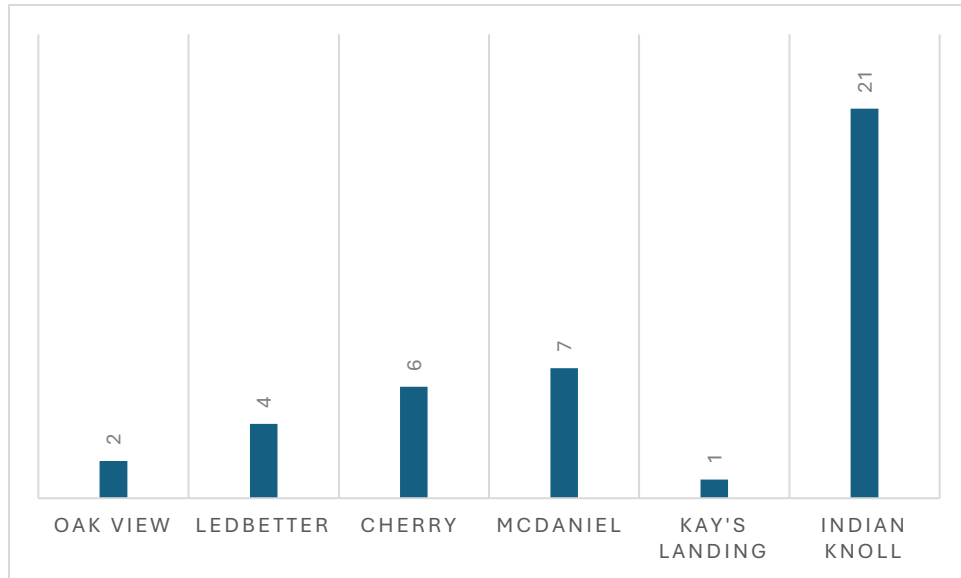


Figure 28. Articulated Dog ABGs by Number for Late Archaic Sites In The Lower Tennessee River Valley Including The Indian Knoll Site

ABGs (**Table 30**) along with the appearance of new cultural attributes like houses, exotic items, and the increase in items placed in human interments (this is discussed later in this section).

The articulated dog ABGs from these sites do not cluster like the articulated dog ABGs found at Eva Stratum II Top, circa 6300 cal yr B.P., or from the earlier Big Sandy cluster circa 8600 to 8200 cal yr B.P. The articulated dog ABGs at the Eva (Stratum III), McDaniel, Ledbetter, and Oak View and Indian Knoll sites were distributed in smaller numbers through time spanning several centuries.

The use of shellfish continued during this period, although how hunter-gatherers conceptualized the use of shell may have changed. A shell deposit is believed to have been present at the Oak View site but destroyed prior to the excavation at the site. A single articulated dog ABG was recovered at the Oak View below the extant shell deposit in a shell free deposit (Stratum I) (Bissett 2014:399). The Ledbetter Landing site contained freshwater shells intermixed with a loam (Bissett 2015:405). Although a description of the shell deposit was not provided by the original excavator and the description of being “intermixed” with the soil matrix may indicate the shells as a food source and not necessarily as a building material. Additional evidence for shells as a subsistence item was the documentation by the original excavators of individual shell roasting pits (Bissett 2015:418). In addition to a new human-dog relationship, which now appears to have represented individual ownership, these sites added new artifact types not found before at sites in the lower Tennessee River Valley like copper beads, copper, marine shell beads manufactured from non-local shellfish species from other regions and the increased placement of items with human interments (Bissett 2014:416). The artifacts found in human interments are thought to symbolize unique, exotic trade items, that were now finding their way to certain individuals. Additionally, Bissett (2014: 255) reports that the Eva Stratum I had twice as

Table 30. Articulated Dogs From Late Archaic Sites in the Lower Tennessee River Valley.

Site	Stratum	Date(s) Cal Yr B.P.	Articulated Dog ABGs
Oak View	I	3713 4280	2
Ledbetter	I	2560	3
Ledbetter	II	4005 3889	1
McDaniel	I	3860 3990	4
McDaniel	II	No Dates	3
Kay's Landing	I	3800	1
Cherry	I		6
Total			20

many items placed with human interments when compared to the number of items placed with human interments from Eva Stratum II. At the Oak View site human interments included copper beads and pieces of copper while shell beads, manufactured from species located in other regions, like the Gulf of Mexico (Bissett 2014:410).

These sites also included evidence for the construction of structures, evident by the identification of numerous post molds. A high density of post molds was identified at the sites of Oak View, Ledbetter, and McDaniel. While post molds were not identified at Eva Stratum III, Bissett (2014: 256) reports that an area 2.4 meters in size contained fired clay hearths, evidence for domestic activities at Stratum I.

The post mold patterning at the McDaniel site was suggestive of at least three large structures with diameters of 5 to 6 meters in size. These rather large structures could have accommodated families comprising several individuals and Bissett (2014: 462) suggest that the McDaniel site was occupied for longer periods of time or at least occupied on a “semi-permeant basis. The McDaniel site was not reported as having a shell bearing deposit. A total of seven articulated dogs were recovered from the McDaniel site(2014: 462).

The Kay’s Landing site represents a unique site as the excavators (Lewis and Lewis 1961) believed that the site was settled by a group migrating from the east, possibly from the Stallings Culture in South Carolina (Lewis and Kneberg 1959). The Kay’s Landing site is discussed here because of the report by Lewis and Kneberg (1959) of a high density of disarticulated dog ABGs at the site. The habitation at the Kay’s Landing site occurred over a 2,400 year period characterized by five habitation strata (Bissett 2014: 326; Lewis and Kneberg 1959). Bissett (2014: 329) compares the development of the Kay’s Landing site to the development of the Eva site. Similar to the Eva site, the Kay’s Landing site had five occupational strata that included two

non-shell strata (Stratum V and Stratum IV) with a shell mound deposit (Stratum II) followed by a shell free deposit (Stratum I). Stratum IV and Stratum II was divided by a shell free deposit described as a flood deposit (Stratum III) (Bissett 2014).

Stratum V and IV at the Kay's Landing site date to circa 5500 to 5100 cal yr B.P. and is characterized by an occupation that produced a high density of artifacts with slightly over half of the human interments at the site (Bissett 2014:327) while Stratum II, circa 4800 to 3800 cal yr B.P., involved the heaping of freshwater shells in a mound shape. While the history of the Kay's Landing site was similar to the development of the Eva site, inhabitants at the Kay's Landing site did not deposit a cluster of articulated dog bones in the shell mound of Stratum II. A single articulated dog ABG was documented from Stratum I, from the post shell mound formation at Kay's Landing and was dated to post 3800 cal yr B.P. (Bissett 2014:327).

The inhabitants of Stratum II did not deposit articulated dog ABGs in the shell mound deposit. Nonetheless, Lewis and Kneberg (1959) reported that the Kay's Landing site contained a high density of disarticulated dog ABGs, although the exact numbers were not documented or published. However, due to the almost complete absence of articulated dog ABGs at the site, especially in Stratum II, Lewis and Kneberg (1959) believed that dogs were being consumed at the Kay's Landing site. If true, then this behavior of dog consumptions fits with the behaviors of a migratory group of hunter-gatherers that originated outside of the lower Tennessee River Valley.

Conclusion

The dog is the only known domesticated animal present in Archaic communities in the Mid-south. Their role in these Archaic communities has been interpreted as hunting aids, companions, and as pack animals (Walker et al. 1998). The appearance and social roles of domesticated dogs

during the Middle and Late Archaic periods was patterned differently at temporal and regional scales. The “scales” that occurred during the Middle Archaic period are best described as “clusters.” One cluster occurred at the Big Sandy site, circa 8600-8200 cal yr B.P., while the other cluster event happened at the Eva site, circa 6300 cal yr B.P. Domesticated dogs become scarce in the lower Tennessee River Valley between these two clustering events. Domesticated dogs do appear across the region after the 6300 cal yr B.P. During the Late Archaic period, domesticated dogs appear at seven sites along the lower Tennessee River Valley, a shift from the presence of domesticated dogs at one site (the Big Sandy site), circa 8600-8200 cal yr B.P. and from another site (the Eva site) circa 6300 cal yr B.P. The distribution of domesticated dogs across the Late Archaic landscape corresponded with the appearance of exotic items as well as evidence for the construction of houses (Bissett 2014).

Unfortunately, the absence of the faunal material from Late Archaic shell bearing sites from the lower Tennessee River Valley restricts a determination of whether disarticulated dog ABGs were also present at these sites. The excavations of transegalitarian sites in the Fraser region of British Columbia, circa 1700 cal yr B.P., offer a glimpse to transegalitarian use of domesticated dogs (Hayden et al 1994; Hayden 1997; Hayden 2005; Prentiss et. al 2021).

Articulated dog ABGs and disarticulated dog ABGs were deposited in individual/family domestic spaces (in storage pits in houses) but were absent at ritual structures that included meeting houses, feasting houses, ritual seclusion houses, shrines, hunting lodges, and sweat houses (Morin 2010:614). These large ritual structures were controlled and used by certain groups and/or secret societies (Morin 2010). Based on reported dog use, disarticulated dog bones found in house contexts may be the remains of family level feasting events. Possible ritual burial

of dogs in houses has been reported by Hayden (1997), although alternative explanations have been offered (Prentiss et al. 2021).

Articulated and Disarticulated Large and Small Mammal ABGs 8600 to 8200 cal yr B.P. (Non-Dog ABGs)

The Big Sandy Site

The disarticulated ABGs for the 8600-8200 cal yr B.P. interval in the lower Tennessee River Valley was analyzed through the large mammal ABG and the small mammal ABGs at the Big Sandy and Eva sites. Contrasting and comparing the large and small ABGs at these sites can provide insights into gender roles and how these roles influenced the overall social organization.

Figure 29 shows the distribution deer carcass parts for Stratum I and for Stratum II at the Big Sandy site while **Figure 30** shows the distribution of the hind and fore limb portions for Stratum I and for Stratum II at Big Sandy.

According to Bissett (2014: 112)

.... although the hillside at Big Sandy also represented a refuse disposal area, Big Sandy's occupants appear also to have conceptualized the area as the site's cemetery, an area separate from what seems to have been the primary locus of most domestic and occupational activities.

The large mammal disarticulated ABG at Big Sandy consisted of 97% of the total faunal assemblage while the small mammal disarticulated ABG consisted of 3% percent of the total faunal assemblage (this included Stratum I and Stratum II together). There was no difference with the mammal ABGs between Stratum I and Stratum II at Big Sandy. There was also no observable difference between Stratum I and Stratum II. The large mammal disarticulated ABG for Stratum I was 96% compared to the small mammal disarticulated ABG at 4% percent. For

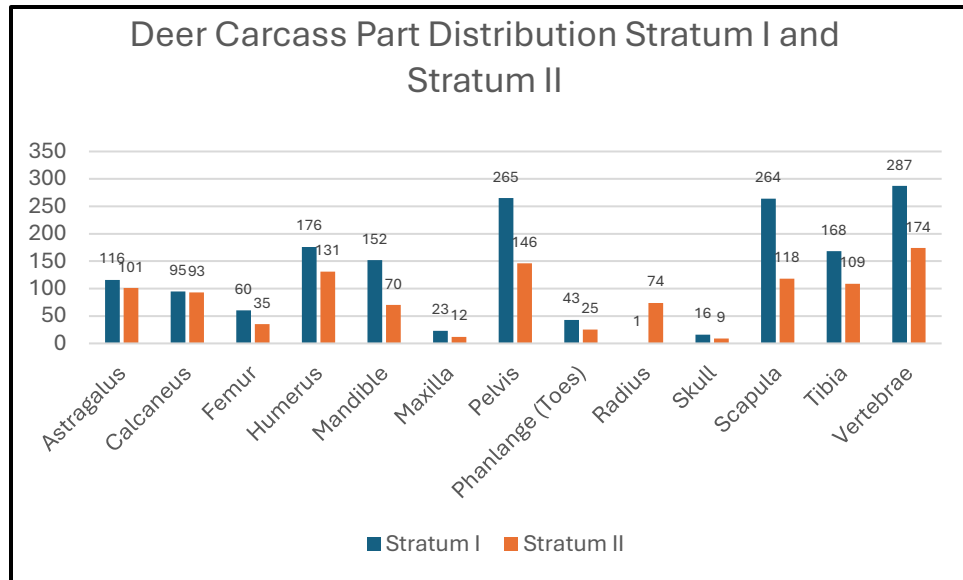


Figure 29. The Frequency of Deer Hind and Fore Limbs at Big Sandy.

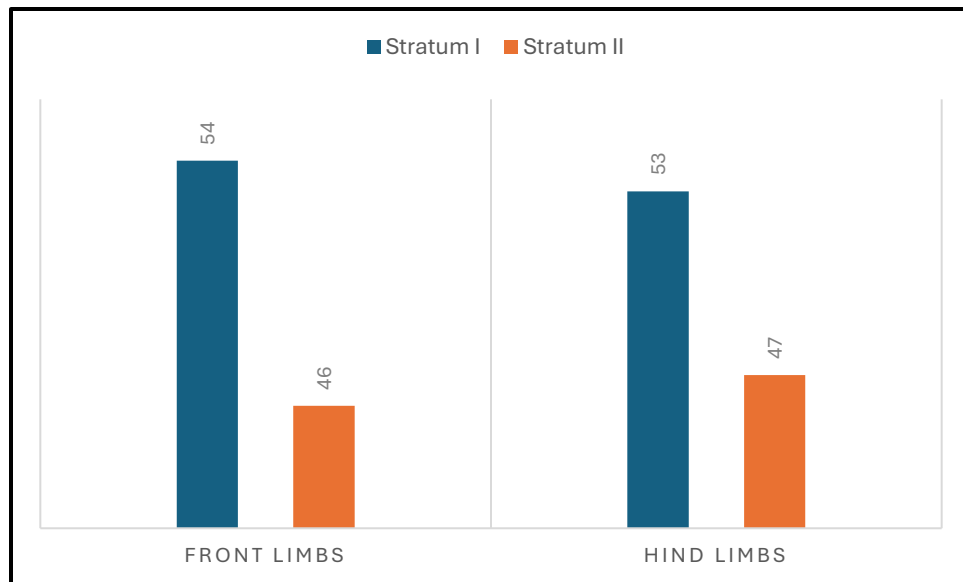


Figure 30. Deer Carcass Part Distribution Big Sandy Site.

Stratum II it was 97% of the faunal collection compared to the small mammal disarticulated ABG at 3% percent. Since the disarticulated mammal ABGs for Stratum I and Stratum II show very little variation, a review of the carcass part distribution between the two strata was conducted to determine if animal parts were arriving through different pathways at the site. The percentage of hind and fore limbs (percent of NISP) are similar between Stratum I and Stratum II and is suggestive that the same consumption activities continued at Big Sandy following the creation of Stratum II.

The only difference between Stratum I and Stratum II at Big Sandy from an ABG standpoint was the addition of freshwater shellfish in Stratum II. The use of shellfish at Shell Mound Archaic sites is interpreted by Claassen (2014:291) as a ritualized action, where shellfish represented a possible renewal ritual. If Claassen (2014:291) is correct, then the shift from dirt to shell should represent a shift to a more ritualized/ceremonial function at the Big Sandy cemetery area.

Disarticulated deer ABGs for both Stratum I and Stratum II totaled 3114 NISP, while the disarticulated bear ABG had a NISP of 418 bones (Osborne 1942). The disarticulated deer ABG showed a slight decrease between Stratum I and Stratum II, from a NISP of 1952 in Stratum I to a NISP of 1162 in Stratum II, while the disarticulated bear ABG remained about the same with a NISP of 219 in Stratum I and a NISP 199 in Stratum II. Skeletal elements of the astragals, calcaneus, and toes are hard, compact, bones that tend to preserve better than ends of limbs and are usually present as whole, complete bones. As a result, the astragal, calcaneus, and toes were compared for species abundance for Stratum I and Stratum II.

The frequencies of the astragal, calcaneus, and toes are similar in NISP for both Stratum I and Stratum II and may indicate that similar deposition patterns occurred for disarticulated deer ABGs for Stratum I and for Stratum II. The percentage of NISP for the disarticulated large

mammal ABGs (deer and bear) was 88% for Stratum I and 82% for Stratum II for deer, while bear had a slight increase in Stratum II at 12 % from Stratum I and 18% from Stratum II. The percentage of fore limbs (radius, humerus, and scapula) and the percentage of hind limbs (tibia, pelvis, and femur) show similar patterns Stratum I and for Stratum II. The distribution of bear carcass parts was concentrated almost entirely on the presence of bear vertebrae. Of the bear carcass parts in Stratum I, vertebrae comprises 91% while bear vertebrae decreases in Stratum II to 83%.

Small mammal ABGs also showed slight decreases between Stratum I and Stratum II. The disarticulated raccoon ABG had a NISP of 44 in Stratum I that decreased to a NISP of 15 in Stratum II while the disarticulated opossum ABG had a NISP of 12 in Stratum I that decreased to a NISP 6 in Stratum II. The disarticulated dog ABG had a NISP of 31 in Stratum I that decreased to a NISP of 11 in Stratum II. The differences for the large mammal and small mammal ABGs between Stratum I and Stratum II at Big Sandy is difficult to interpret with the available data. The difference may be related to a shorter time period for Stratum II and a longer period for Stratum I, or alternatively, a shift away from small mammal use and an increase in large mammal utilization, especially a small increase of bear in Stratum II.

The Eva Site

In contrast to the small number of disarticulated animal ABGs (NISP 3121) at the Big Sandy site, the disarticulated animal bones at Eva Stratum IV and V included 14,000 animal bones. The disarticulated deer ABG has a NISP of 12,407 representing four times more disarticulated animal bones than recovered at the Big Sandy site. The Eva Phase (8900–8200 cal yr B.P.) which corresponds with the occupation at Big Sandy (8600–8200 cal yr B.P.), had a large mammal disarticulated ABG at 89% with a small mammal disarticulated ABG at 11% of the

faunal collection.. The large mammal disarticulated ABG for the Three Mile Island Phase (7500–6300 cal yr B.P.) was 83% while the small mammal disarticulated ABG was 17%, while the large mammal disarticulated ABG for the Big Sandy Phase (post 6300 cal yr B.P.) consisted of 85% while the small mammal disarticulated ABG consisted of 15% percent of the faunal collection. Using the NISP number of 14,093 (from all species) the disarticulated deer ABG was 88% with the disarticulated bear ABG at 4%. When the disarticulated deer ABG and the bear disarticulated ABG are compared, the disarticulated deer ABG is at 98% (NISP=12,407) with the disarticulated bear ABG at 2% (NISP=449). Small mammals were well represented at Eva Stratum IV and Stratum V with the disarticulated racoon ABG at NISP of 294, the Opossum NISP at 51, the beaver NISP at 92, the rabbit NISP at 13, the muskrat NISP at 1, with the otter and squirrel NISP at 1 each. The NISP for turtles was 452 while fish had a NISP at 123. Turkeys had a NISP of 176. The percentage for small mammals (based on an NISP of 452) included raccoon at 65% followed by beaver at 20%, opossum at 10%, rabbit at 3%, with otter and squirrel rounding out the remaining 2%. **Figure 31 and Figure 32** show the comparison for the small and large mammal ABGs at Eva and Big Sandy

The Dust Cave and The Black Cat Cave Sites

The large mammal disarticulated ABG and the small mammal disarticulated ABG at the Dust Cave site and at the Black Cat Cave site shows a contrast to the mammal ABGs at the shell bearing sites in the lower Tennessee River Valley. The large mammal disarticulated ABG at the Kirk stemmed Phase at Dust Cave consisted of 7% while the small mammal disarticulated ABG consisted of 93% of the total faunal assemblage. The large mammal disarticulated ABG for the Eva/Morrow Mountain phase consisted of a large mammal disarticulated ABG at 25% while the small mammal disarticulated ABG consisted of 75%, while during the Three Mile Island Phase

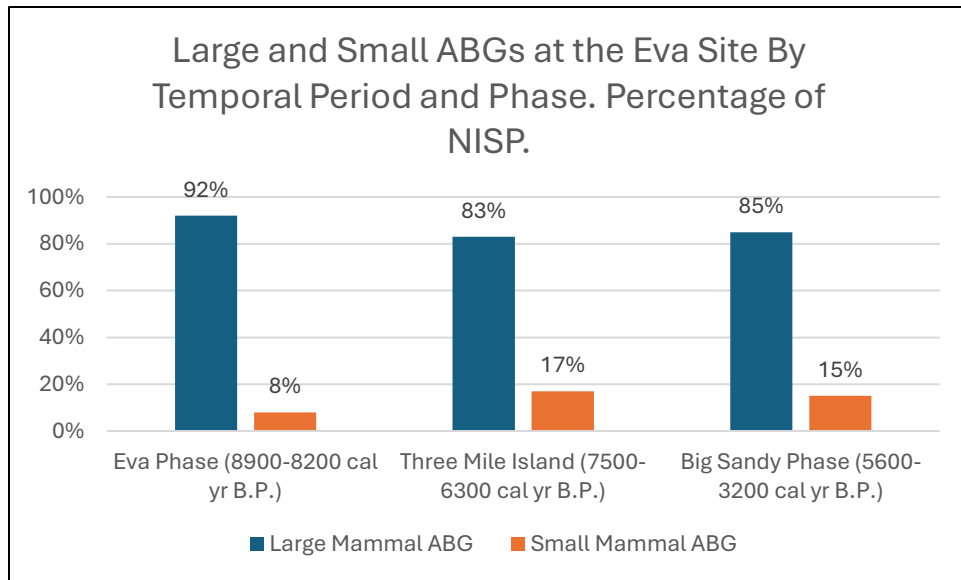


Figure 31. Large and Small ABGs at the Eva Site Through Time.

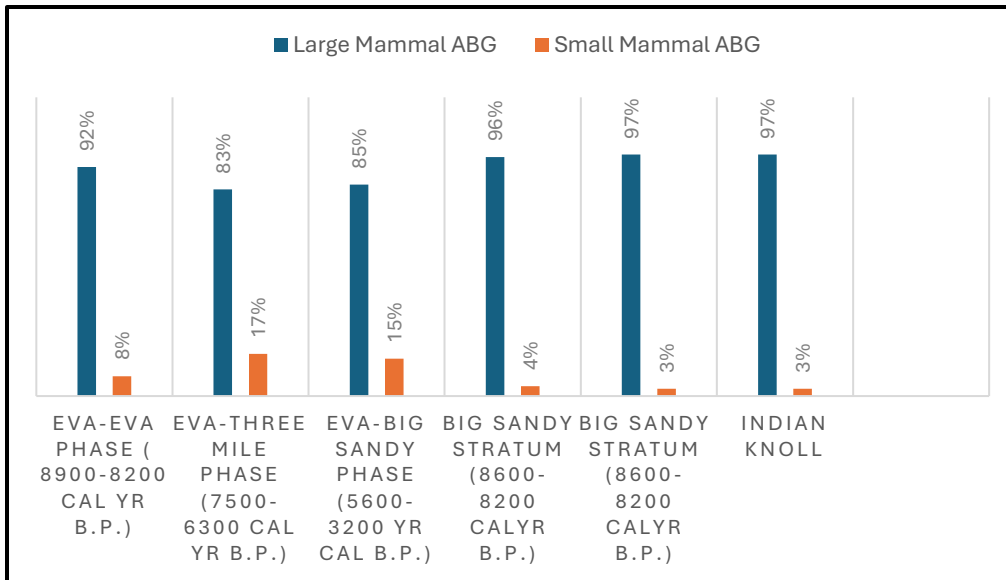


Figure 32. A Comparison of the Large and Small Mammal ABGs at the Eva and Big Sandy Sites.

the large mammal disarticulated ABG consisted of 42% while the large mammal disarticulated ABG consisted of 58% of the total faunal assemblage (Walker 1998). The faunal collection from the Black Cat Cave site in the Middle Cumberland River Valley is too small to draw secure conclusions based on the small animal bone collection that included mammals (n=17), turtle (n=2) and freshwater shells (n=563) (Peres et al. 2019). However, the percentages for the large and small mammal ABGs correspond with the percentages from Dust Cave. The ABGs, just for mammals, include a large mammal disarticulated ABG of 37% with a small disarticulated ABG of 63%. Once the turtle remains and shells are added to the small mammal ABG the large mammal disarticulated ABG is 3% while the small mammal disarticulated ABG at 97% of the faunal collection.

Articulated and Disarticulated Large and Small Mammal ABGs 7600 to 6300 cal yr B.P. (Non-Dog ABGs)

The only sample for the 7600–6300 cal yr B.P. timeframe is Stratum II at the Eva site, and samples from the Dust Cave and Black Cat Cave sites. The density of disarticulated animal bones in Stratum II at Eva decreases from the 14,407 disarticulated animal bones recovered from Stratum IV and Stratum V to 2571 disarticulated animal bones recovered from Stratum II. As reported by Bissett (2014), Stratum II was the longest period of occupation at Eva but exhibited a rather low density of animal bones, especially when compared to Stratum IV and Stratum V. Stratum II was the also the period of shell deposition, i.e., the “shell mound” at the Eva site. Interestingly, the density of animal bones in Stratum II (the shell mound deposit) is more similar to the animal bone density at Big Sandy, Stratum II (circa 8600–8200 cal yr B.P.) than to that of the preceding animal bone densities recovered from Eva Stratum IV and Stratum V. The Eva site, circa 7600–6300 cal yr B.P., had a large mammal ABG (deer and bear) NISP of

1839 while the small mammal ABG (raccoon, opossum, beaver, rabbit, muskrat, mink, fox, groundhog, and wildcat) had a NISP of 291 disarticulated bones. The large mammal disarticulated ABG at Eva Stratum II consisted of 83% while the disarticulated small mammal consisted of 17% of the total faunal collection. If the fish species and turtles are added to the small mammal disarticulated ABG, then the small mammal ABG consisted of 23% of the faunal bone assemblage. If turkeys are added to the large mammal ABG, then the large mammal consisted of 77% of the faunal collection.

The large mammal ABGs are deer and bear (NISP =1839) with deer having a NISP of 1,819 with a NISP of 26 for bear. Using a large mammal NISP of 1839, deer make up almost 99% of the large mammal disarticulated ABG while bear comprise approximately 1% of the disarticulated large mammal ABG. The small mammal disarticulated ABGs include raccoon with a NISP of 168 (58%), opossum with a NISP at 44 (15%), beaver with a NISP of 25 (9%), rabbit with a NISP of 28 (10%), muskrat with a NISP of 1 (1%), mink with a NISP of 5 (2%), fox with a NISP of 1 (1%), and groundhog with a NISP of 15 (5%).

The ABGs at the Dust Cave site for the large mammal disarticulated ABG for the Eva/Morrow Mountain phase, circa 7000–6000 cal yr B.P. (Walker 1998:66) was 25% while the small mammal disarticulated ABG was 75%. During the Three Mile Island Phase at the Dust Cave site (circa 6000–5200 cal yr B.P. [Walker 1998:66]) the large mammal disarticulated ABG consisted of 42% while the large mammal disarticulated ABG consisted of 58% of the total faunal assemblage.

The faunal collection from the Black Cat Cave site in the Middle Cumberland River Valley is too small to draw secure conclusions based on the small animal bone collection that included mammals (n=17), turtle (n=2) and freshwater shells (n=563) (Peres et al. 2016). However, the

percentages for the large and small mammal ABGs correspond with the percentages from Dust Cave. The ABGs, just for mammals, include a large mammal disarticulated ABG of 37% with a small disarticulated ABG of 63%. Once the turtle remains and shells are added to the small mammal ABG the large mammal disarticulated ABG is 3% while the small mammal disarticulated ABG at 97% of the faunal collection.

Articulated and Disarticulated ABGs 5600 to 3200 cal yr B.P.

The faunal material from the lower Tennessee River Late Archaic sites of Oak View, McDaniel, Ledbetter Landing, Cherry, and Kay's Landing were not reported or published by the original excavators. In order to have a Late Archaic faunal sample from a shell bearing site, I use the faunal remains from the Late Archaic Indian Knoll site, located to the northwest in the Green River of Kentucky. The Indian Knoll site was dated to from 6912 to 4912 cal yr B.P. (Winters 1974:xviii). The Indian Knoll site was similar to the Oak View, McDaniel, Ledbetter Landing, Cherry, and Kay's Landing in that the site also had articulated dog ABGs, post molds, exotic copper and shell artifacts, including a copper bar (Bissett 2014, Webb 1974:232).

Evidence for domestic areas/living area included circular areas where hunter-gatherers laid down a deposit of clean clay with a thermal feature situated in the center of these clay activity/living areas (Webb 1974:241). Additionally, post molds were also identified during the excavation at Indian Knoll although distinct house patterns were not identified by the excavators (Webb 1974:233).

The disarticulated large mammal ABG at the Indian Knoll site has a percentage at 97% while the disarticulated small mammal ABG consisted of 3%. The disarticulated large mammal ABG included deer and bear while the disarticulated small mammal ABG included raccoon, opossum, squirrel, rabbit, and ground hog. The disarticulated large mammal ABG included a deer NISP of

18,024 and a bear NISP of two. The disarticulated large mammal ABG for deer is 99.5 % while disarticulated ABG for bear represent 0.5%.

The small mammal ABG included raccoon with a NISP of 410, opossum with a NISP of 37, squirrel with a NISP of 10, rabbit with a NISP of 9, and groundhog with a NISP of 67. The raccoon represented 77% of the small mammals, followed by groundhog at 13%, opossum at 7%, squirrel at 2%, and rabbit at 1%, Based on the recovery of 33 baculum, raccoons have a MNI of 33, while opossum has a MNI of 1. The opossum most likely has a higher MNI as the bones reported for this species was 33 mandibles, a left humerus, and two fragments of skull. The groundhog MNI is 1 with 16 of the bones reported as groundhog mandibles. Both squirrels and rabbits have a MNI of 1 each.

Figure 33 compares large and small mammal ABGs for the Eva, Big Sandy, and Indian Knoll sites. The Indian Knoll large mammal disarticulated ABG and the small mammal disarticulated ABG are more similar to that mammal ABGs found at the Big Sandy site (8600—8200 cal yr B.P.) than with the mammal ABGs from the Eva site. At the Big Sandy site, large mammal disarticulated ABG comprises 97% while the small mammal disarticulated ABG comprises only 3% compared to the large mammal ABG at the Indian Knoll site at 97% and the small mammal ABG at 3%.

In addition to the similarity in the mammal ABGs between the Big Sandy and Indian Knoll sites, both sites also have a high count of articulated dog ABGs, Big Sandy with 11 and Indian Knoll with 21 articulated dog ABGs (**see Figure 34**). In contrast to the Big Sandy and Indian Knoll sites, the Eva site has a higher percentage of small mammal ABGs from all three time periods. The small mammal ABG is close to the Big Sandy small mammal ABG percentage at the 8900—8200 cal yr B.P. time period, the small mammal doubles at the Eva site after 8200 cal yr B.P.

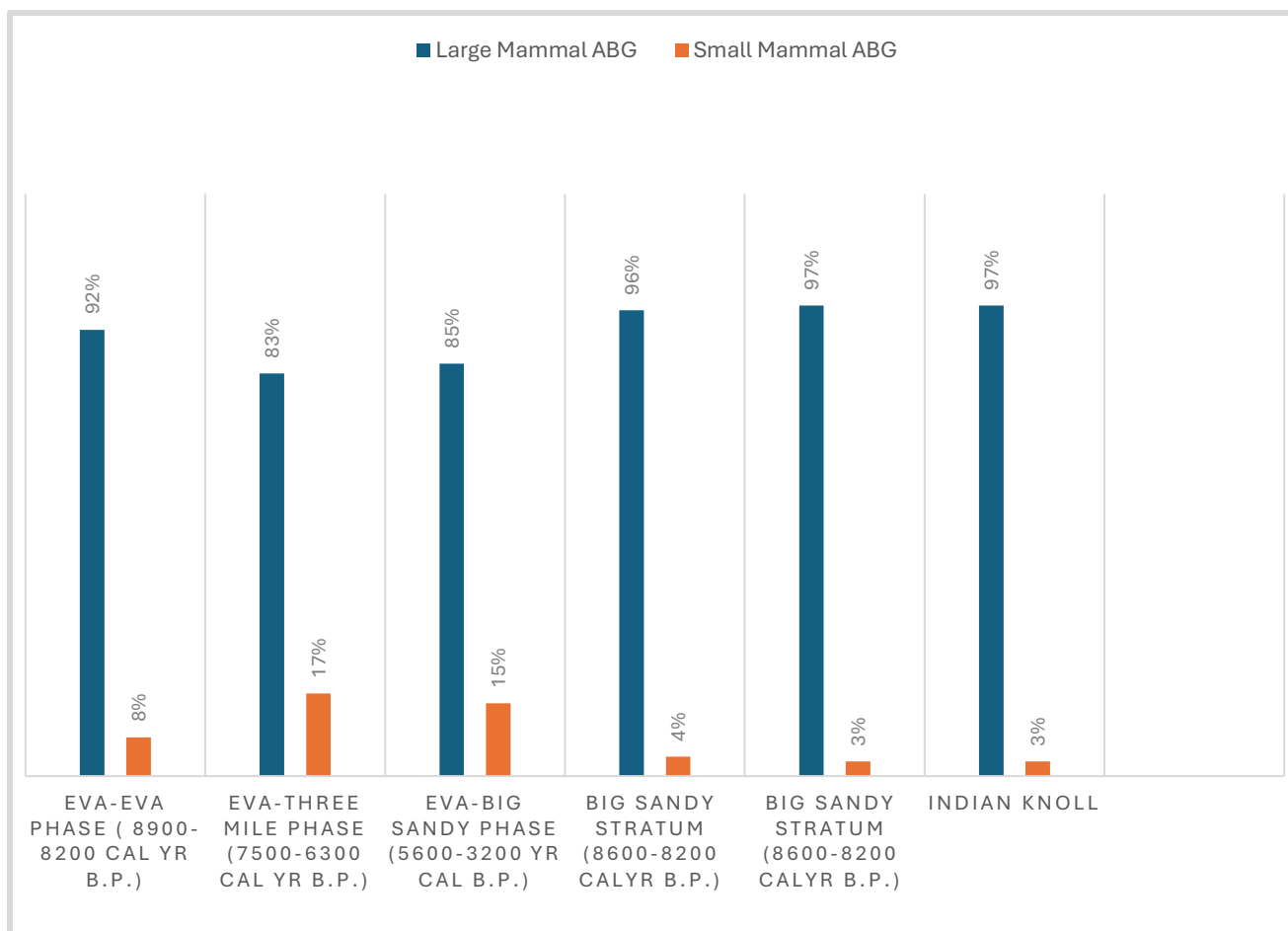


Figure 33. A Comparison of Mammal ABGs From Eva, Big Sandy, and Indian Knoll.

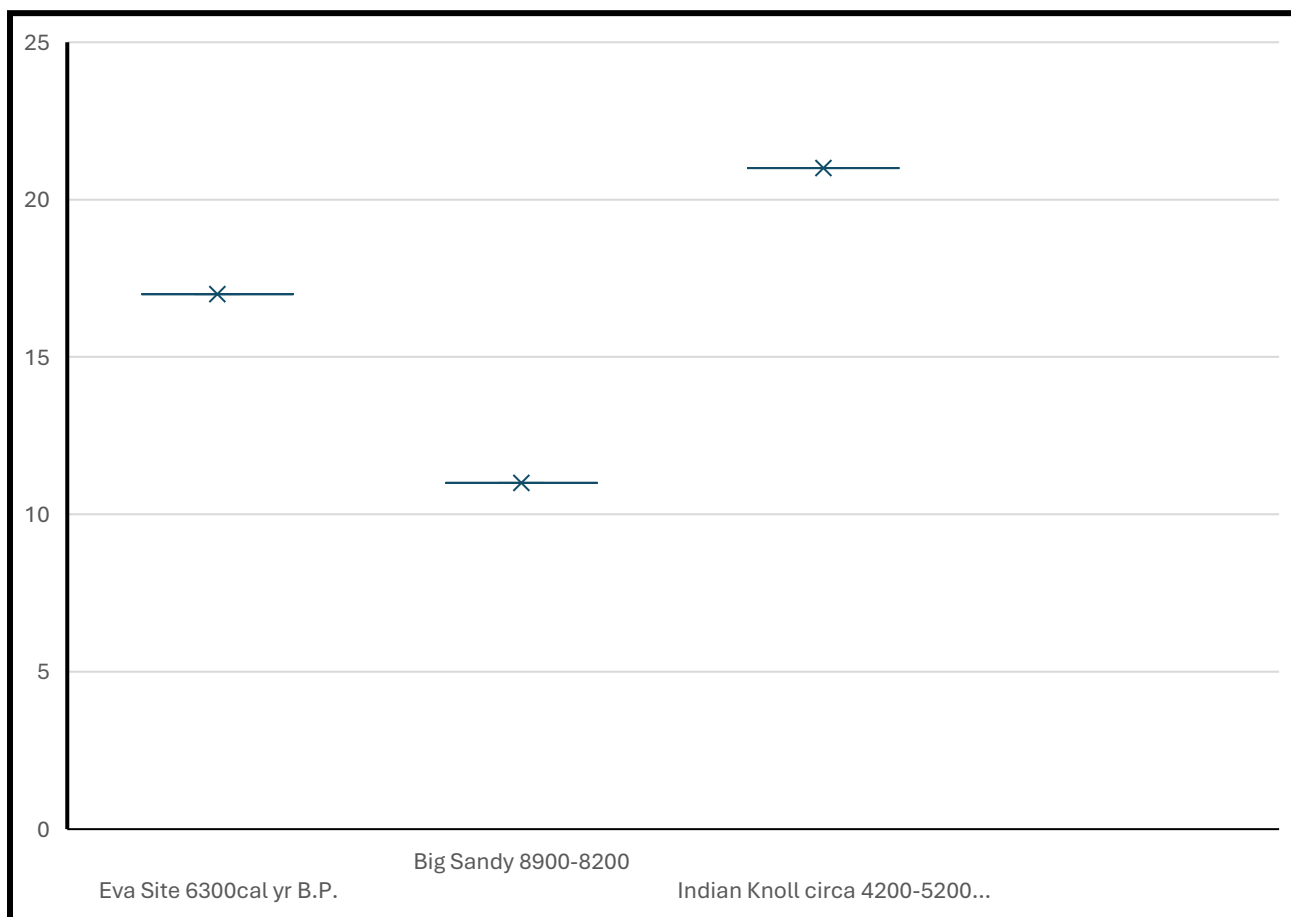


Figure 34. A Comparison of the Numbers of Articulated Dog ABGs Between the Eva, Big Sandy, and Indian Knoll Site.

with an increase in the small mammal ABG to around 17 percent. The increase in the small mammal ABG at Eva coincides with the construction of the shell mound at the site.

CHAPTER XI

HUMAN-ANIMAL RELATIONSHIPS IN THE ARCHAIC LOWER TENNESSEE RIVER VALLEY

Introduction

The goal of this dissertation was to examine how Middle and Late Archaic hunter-gatherers utilized their relationships with animals to structure their behavior as well as their social organizations (**Table 31**). This dissertation research was also conducted to add more information to the growing body of work that now regards Archaic hunter-gatherer social systems as dynamic and products of historical trajectories. I used Middle to Late Archaic shell mounds and shell bearing sites from the lower Tennessee River Valley to explore this topic. The dissertation research compared the similarities and differences of human-animal relationships practiced at each site over time.

The research showed that human-animal relationships, during the Middle and Late Archaic, were very different. Within each time period, the findings are discussed using smaller time increments. My research was able to demonstrate that Archaic hunter-gatherers living in the lower Tennessee River Valley had social histories that were, in some part, created and maintained through their relationships with animals.

These Archaic hunter-gatherers practiced different types of social organizations over time, most likely responding to different challenges and needs. The inclusion of human-animal relationships in hunter-gatherer research can reveal the social nature of these groups and help move toward holistic models that accurately narrate their lifeways.

Table 31. Summary of Social Organization at Eva and Big Sandy Middle Archaic Period.

Date (cal yr B.P.) (Bissett 2014)	Site	Proposed Organization	Human-Animal Relationship/Context
6300	Eva Stratum II	Egalitarian/Sacred	Cluster of 15 Articulated Dog ABGs, Ceremonial Context Dog ABGs, Communally Owned
7500-6300	Eva Stratum II Construction of Shell Mound	Egalitarian/Sacred	Disarticulated Dog ABGs Are Absent
7600-6300	Dust Cave- Caves become spaces for women	Egalitarian/Sacred	Dogs buried in caves, Small Mammals Comprise the Majority of Animals.
8900-8200	Big Sandy Stratum I	Transegalitarian?/Secular	Dogs Individually/Family Owned. Site is Segregated Into Residential and Cemetery Areas. Low percentage of Small Mammals. No Segregation in Carcass Part Distribution but small faunal signature-not a solidarity feast
8900-8200	Big Sand Stratum II	Transegalitarian?/Sacred	Dogs Individually/Family Owned. Site is Segregated Into Residential and Cemetery Areas. Low percentage of Small Mammals. Dogs Buried in Shell Covered Cemetery, No Segregation in Carcass Part Distribution but small faunal signature-not a solidarity feast
8900-8200	Eva Stratum IV and V	Egalitarian Secular	Articulated Dogs Are Absent, Large Faunal Signature (Solidarity Feasting) No Segregation in Carcass Part Distribution

The Middle Archaic Period (8900 cal yr B.P. to 6300 cal yr B.P.)

From 8900 to 8200 yr cal B.P., individuals at Big Sandy site deposited articulated dog ABGs in a cemetery, while this practice of dog interments was absent at the Eva site. This difference highlights two types of hunter-gatherer behaviors. The activities at Eva focused on food consumption (feasting), while the activities at Big Sandy incorporated public displays (human and animal interments)

Each activity represents a different type socializing strategy. Although the social strategy behind each event type is not well understood, the different activities would have given the participants very different social experiences. Based on the variations in human-animal relationships at the Eva and Big Sandy sites, hunter-gatherers living in the lower Tennessee River Valley were most likely experimenting with two forms of social organization to deal with the Early Archaic/Middle Archaic transition.

The Eva Site 8900-8200 cal yr B.P.

During the 8900-8200 cal yr B.P. time period, individuals at the Eva site participated in feasting events (see Lewis and Lewis 1961 for animal bone counts) but did not deposit articulated dog ABGs (see Lewis and Lewis 1961), or any articulated animal ABGs at the site. Feasting events do not need to be extravagant undertakings or ritual in nature (Dietler 2001:67). Hayden (2001:32) points out that non-Western groups hold feasting events to build regional alliances, to bring people together during times of crisis, or to incur social debts. Hayden (2001:49) states, “...that generalized hunter/gatherers may not host any feasts in the usual sense, or if they do, their feasts probably most closely resemble what I would call solidarity feasts.” Solidarity feasts are defined as large amounts of daily foodstuffs, low amount of specialized foods, and all individuals are expected to provide foodstuffs to the event (Hayden 2001:50). Several lines of

evidence suggest that the consumption events at the Eva site were held as solidarity feasts. First, there is a large number of animal bones from everyday meals (mainly white tailed deer) and a small number of specialized food items like bear and/or dog. Secondly, there is not a disparity in the distribution of carcass parts. White tailed deer were brought to the site as complete skeletons and dismembered on-site with all of the deer parts distributed to the whole group. Thirdly, there is a high inclusion of small game (eight percent) like raccoons, rabbits, and squirrels that may point to increase participation of women, where women were providing small game as their part of the overall contribution to these feasting events.

The Big Sandy Site circa 8900-8200 cal yr B.P.

From 8900 to 8200 cal yr B.P. activities occurring at the Big Sandy site are suggestive of minimal feasting (especially when compared to Eva) with an emphasis on public display activities (the interments of humans and dogs). These articulated dog ABGs represent the earliest documentation for this type of activity by hunter-gatherers in the lower Tennessee River Valley and possibility the earliest placement of articulated dog ABGs in a human cemetery. The placement of dogs in a human cemetery is a behavior suggestive that dogs had achieved social integration and/or social status at the site.

Sometime after 8600 cal yr B.P., the inhabitants at Big Sandy covered their cemetery with freshwater shells and continued to place humans and articulated dogs together in this new shell covered cemetery. This shift in religious ideology did not change the human-dog relationship at Big Sandy as dogs continued to be buried in the new cemetery.

The addition of a domesticated animal (and the socialization of these dogs) in human spaces at Big Sandy was most likely accompanied by a shift in the worldview of hunter-gatherers. The presence of disarticulated dog ABGs may represent the equivalent of individual ownership of

dogs by hunter-gatherers. Hayden (1997) believes that domesticated dogs became individual property once hunter-gatherers living in British Columbia adopted a transegalitarian organization (circa 1700 cal yr B.P.). These transegalitarian hunter-gatherers allowed their dogs to live as part of the elite/wealthy class, a status evident by the consumption of high status foods and burial in individual houses. Although houses were not identified at the Big Sandy site, the site was segregated with a residential area and a cemetery area. The segregation of activities at the site along with the socialization of the dog is suggestive of a transegalitarian a social organization. However, the deposition of articulated dog ABGs at the Big Sandy site lasted for a short time. Temporary hunter-gatherer hierarchies are believed to have developed in the Lower Mississippi Valley as one way to organize the labor needed to construct Middle Archaic earthen mounds, as well as temporary hierarchies to construct the mound complex at Poverty Point. Additionally, Hayden (1997) believes that transegalitarian hunter-gatherers in British Columbia transitioned between periods of egalitarian organizations intermixed with periods where they organized themselves as transegalitarian hunter-gatherers. The period from 8600 to 8200 cal yr B.P. at the Big Sandy site may be one of those periods when hunter-gatherers needed a temporary hierarchal organization to effectively deal with social or natural changes.

The Disappearance of Articulated Dogs and the construction of the Eva Shell Mound,

Circa 8200 cal yr B.P. to 6300 cal yr B.P.

From 8200 to 6300 cal yr B.P., the placement of large numbers of articulated dogs ceases at the Big Sandy site and may have disappeared altogether from the lower Tennessee River Valley. The absence of domesticated dogs 8200 cal yr B.P. may represent a taboo, or resistance, to the integration of a domesticated animal (in this case the domesticated dog) into egalitarian Middle Archaic communities along the lower Tennessee River Valley.

Sometime around 7500 cal yr B.P., there was a shift at Eva where shell mound construction was added to any feasting events. The next 1200 years at Eva saw changes that included a decrease in the quantities of animal bones, an increase in freshwater shellfish, and an increase in the consumption of small animals. Additionally, articulated dogs were not placed in the shell mound prior to 6300 cal yr B.P.

A comparison of the small and large mammal ABGs supports the idea that all individuals were involved in procurement activities. During the period of shell mound construction, small mammals increase in numbers, a product of the increased contribution and participation of women. Additionally, the carcass part distribution looks like whole animals were brought to the site and consumed by the group. The period of shell mound construction looks like the aggregation location for egalitarian hunter-gatherers where the location became a persistent place.

This lack of articulated dogs seems to have occurred in other places as excavations in the St. Johns River Valley in Florida and at earthen mounds in the Lower Mississippi River Valley have not reported the presence of articulated dogs. What happened to dogs for this 1200 year time period is not known, but hunter-gatherers may have viewed dogs as “disrupters” to egalitarian organizational modes or as symbols of hierarchy that could be used to build temporary social hierarchies when needed. The construction of social (secular or religious) hierarchies at Big Sandy may have had a negative impact on how egalitarian hunter-gatherers viewed dogs. The evidence is suggestive that human-dog relationships (after 8200 cal yr B.P.) was constrained or restricted in the lower Tennessee River Valley, probably as one method to check the development of social hierarchies.

The Late Archaic Period, Circa 5700-3600 cal yr B.P.

Unfortunately, the disarticulated animal bones were not reported from these sites and the patterning of articulated dogs is the only comparison that we have with the Middle Archaic period. The human-dog relationship was examined at the Late Archaic occupations from the Eva, Kays Landing Site, the McDaniel Site, and the Cherry site.

In contrast to the preceding Middle Archaic period (circa, 8900-5600 cal yr B.P.), Late Archaic hunter-gatherers adopted a different type of human-dog relationship. During the Late Archaic period, articulated dog ABGs now appeared throughout a wider area in the lower Tennessee River Valley at more site locations. These articulated dog ABGs were placed in individual deposits, instead of part of the articulated dog clusters like the ones identified at the Big Sandy site (circa 8900-8200 cal yr B.P) and at the Eva site (circa 6300 cal yr B.P.). This transition of the human-dog relationship coincided with other regional changes like the construction of houses and the presence of exotic goods, like copper, copper beads, and shell beads. It was the change in the human-dog relationship along with appearance of houses and the use of exotic items that is suggestive a trend from egalitarian to a more transegalitarian organization.

The deposition of individual articulated dog ABGs (**Figure 35**) at Late Archaic sites may be one indication for the equivalent of individual dog ownership, instead of the collective use of the dog in ceremonial situations (**Table 32**). During the Late Archaic articulated dog ABGs were placed with human interments, a practice that was absent during the Middle Archaic period . Articulated dog ABGs were found at the Oak View site(one articulated dog ABG with a human interment,) the Cherry site (one articulated dog ABG with a human interment), and the McDaniel site (three articulated dog ABGs with human internments) (see Bissett 2014). The Late Archaic site of

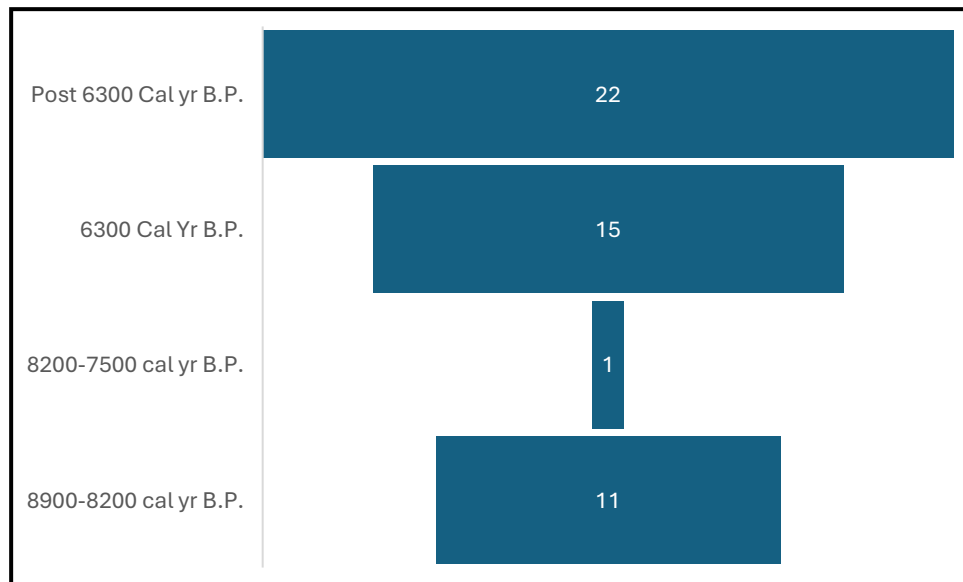


Figure 35. The Distribution Through Time of Articulated Archaic Dog ABGs in the Lower Tennessee River Valley

Table 32. Summary of Social Organization at Lower Tennessee River Sites During the Late Archaic Period.

Date	Sites	Organization	Human-Animal Relationship/Context
5600-3600	Oak View, K	Transegalitarian/Secular	Dogs Individually /Family Owned, Houses Present, Exotic Items Present
5600-3600	Eva Stratum III	Transegalitarian/Secular	Dogs Individually /Family Owned, Houses Present, Exotic Items Present
5600-3600	Kay's Landing	Transegalitarian/Secular	Dogs Individually Owned, Houses Present, Exotic Items Present
5600-3600	McDaniel	Transegalitarian/Secular	Dogs Individually /Family Owned, Houses Present, Exotic Items Present
5600-3600	Ledbetter Landing	Transegalitarian/Secular	Dogs Individually /Family Owned, Houses Present, Exotic Items Present

Indian Knoll, located in the Green River Valley of Kentucky, had 21 articulated dog ABGs with 13 interred directly with humans (Webb 1974:155).

How the Dissertation Fits With Regional Models

Early ideas on the Shell Mound Archaic failed to recognize the cultural diversity of these sites, and the cultural complexity of the people who created them. Instead of places of social history, shell mounds were thought to be refuse dumps where hunter-gatherers deposited meal remains. Recent archaeological investigations in the St. Johns River Valley by Sassaman and Randall (2012) and a reevaluation of the Shell Mound Archaic by Claudia Claassen (2010) has resulted in new models that describe shell mound sites within agency and historical models. These approaches place shell mound and shell ring sites as the focus of hunter-gatherer socialization, as persistent places that organized the cultural landscape.

Research in the St. Johns River Valley produced “depositional narratives” where hunter-gatherers frequently aggregated at shell rings to socialize, build alliances, reinforce shared histories. These shell sites were frequently “repurposed” through time, as hunter-gatherers meet to deal with changes in the cultural and natural environment. These “depositional narratives” were identified by Sassman and Randall (2012) as changes in soil horizons, changes in shell accumulation, changes in feasting and the addition of human interments.

Claudia Claassen (2010) reevaluated the Shell Mound Archaic and believes that shell mound sites formed “ritual districts”, with six ritual districts stretching from the Mid-South to the lower Mid-West. She added caves as ritualized locations, with the ritual activities at these caves under the direction of women. Shell mounds constructed in these “ritual districts” were placed at topographic important places where hunter-gatherer groups aggregated to socialize, form alliances, find mates, etc. The results from my research support the idea that shell mound sites

were places where hunter-gatherers produced “depositional narratives.” Changes in human-animal relationships over the Middle to Late Archaic periods in the lower Tennessee River Valley are evidence for these “depositional narratives” in the lower Tennessee River Valley. The clustering of articulated dog ABGs at the Big Sandy site and at the Eva site represent two periods of cultural change. The Big Sandy cluster appeared from 8600-8200 cal yr B.P, roughly coinciding with the Early Archaic/Middle Archaic transition while the Eva cluster coincided with the Middle Archaic/Late Archaic transition. These two clusters of articulated dog ABGs appear at roughly the same time as other regional changes like changes in projectile point technology, changes in settlement patterns, changes in the use of freshwater shellfish, changes in artifact types, and periods of possible migrations.

The meager published data on the Late Archaic sites in the lower Tennessee River Valley restricts any real interpretation if “depositional narratives” continued into the Late Archaic period. The shift from the clustering of articulated dog ABGs to individual interments may have paralleled changes in how Late Archaic hunter-gatherers aggregated and socialized their communities. The Late Archaic shell mound sites in the Green River Valley of western Kentucky may provide these answers but will require future investigations.

The research does not support or refute the lower Tennessee River Valley as a ritual district. The abandonment of the Big Sandy site followed by shell mound construction at Eva is suggestive that the Eva site became the ritual focus for the area. However, my research does support Claassen’s (2010) idea that women were important participants in the ritual life of these Archaic communities. The increase in small mammals at the Eva and Dust Cave sites (two sites that functioned as ritual locations) may be indicative of the intensified involvement of women at ritual sites like shell mounds and caves.

Summary-Human-Animal Relationships in the Lower Tennessee River Valley During the Middle and Late Archaic Periods

Domesticated Dogs

Middle and Late Archaic hunter-gatherers, at sites in the lower Tennessee River Valley structured their relationships with dogs differently depending on the time and the place. The dog was the only domesticated animal utilized by Middle Archaic and Late Archaic hunter-gatherers. Archaeologists like Russell (2016) believe that ideological changes were needed before communities before accepted domesticated animals. If true, then the articulated dog ABGs at Big Sandy are evidence that the Early to Middle Archaic transition represented more than just changes in projectile points, and settlement patterns, but a new worldview for some hunter-gatherers. The abandonment of the Big Sandy site was also an abandonment of articulated dogs at sites.

What came after Big Sandy was an almost 1200 year period without evidence that hunter-gatherers were depositing articulated dogs at their sites. During this 1200 year period at the Eva site hunter-gatherers constructed a shell mound with human interments but an absence of articulated dog ABGs. This lengthy absence of articulated dog ABGs may represent a taboo or at least some level of restriction against dogs in public displays in human spaces. As discussed in this dissertation, this restriction of dogs was most likely a restriction against wealth building and against the construction of social hierarchies in what was still egalitarian hunter-gatherers. By the Late Archaic period, articulated dog ABGs are distributed throughout the lower Tennessee River Valley but in lower numbers. This shift from articulated dog ABGs in clusters at certain times, suggests that articulated dog ABGs were most likely family or individually owned. The human-dog relationship at the Late Archaic sites of Oak View, Ledbetter Landing, Cherry, and

McDaniel, are interpreted as a secular relationship between owner-dog, where dogs functioned as personal property instead of functioning as ceremonial objects for use within a ritualized context. By the Late Archaic period, the egalitarian forces that restricted dog ownership through taboos were either too weak to enforce dog taboos or societies of the time had voluntarily relinquished the use of dog taboos that restricted the individual ownership of dogs.

Articulated Dog ABGs and The Association With The Use Of Shell Deposits

The use of freshwater shells to symbolize a ritual or ideological belief was not linked to the deposition of articulated dog ABGs. There is not a clear association with the use of articulated dog ABGs with the use of freshwater shells. For most of the Middle Archaic period, articulated dog ABGs were not present at shell mound sites and only occurred at two specific points in time during the Middle Archaic period. The addition of freshwater shells at the Big Sandy cemetery did not alter the placement of articulated dog ABGs in the cemetery while the early stages of shell mounding at Eva did not result in the deposition of articulated dogs at the site. At the Big Sandy site dogs continued to be part of the human social sphere after freshwater shells were added to the cemetery. The cluster of articulated dog ABGs at the Eva site was most likely a response to the changes of the Middle Archaic/Late Archaic transition where hunter-gatherers amplified the events at Eva using articulated dog ABGs.

Disarticulated Large and Small Mammal ABGs

The use of disarticulated large and small mammal ABGs offer a glimpse in the degree of socialization animal use along gender lines at Middle and Late Archaic hunter-gatherer sites. Ethnographic studies have shown that in egalitarian hunter-gatherer societies, women typically hunt small animals, using these small animals to maintain and build social relationships with other women (but see Anderson et al. 2023 for a more nuanced view; sometimes big game

hunting also occurred). While hunter-gatherers at Big Sandy were depositing articulated dog ABGs in a shell filled cemetery, hunter-gatherers at Eva site Stratum IV and Stratum V were engaging in very different social activities. During the 8900 to 8200 cal yr B.P. time period, hunter-gatherers at Eva were hosting food consumption events that deposited a high density of disarticulated large mammal ABGs that included deer (**Figure 36 and Figure 37**), and bear, and small mammal disarticulated ABGs that included raccoon, opossum, mink, rabbit, squirrel, dog, turtle, and groundhog. It is unclear if the faunal remains at Stratum IV and V are true feasting events or just periods of intensive occupation and consumption (Bissett 2014). What is clear is that the activities at Eva Stratum IV and V were not true performance events, like the public performances of human and dog interments that were occurring at the Big Sandy site during the same time period.

If the animal bones from Eva Stratum IV and Stratum V were feasting events, then the type of feasting is important for understanding their social structure. Wiessner (2001:127) offers a context to distinguish between sacred and secular feasting using the Enga of Papua New Guinea as a case study. Her study provides an insight to how hunter-gatherers used different feasting types. The sacred feasts of the Enga brought families and individuals together with all families and individuals contributing food to the event with food consumption accomplished on-site. All food was shared during the feasts and the Enga sacred feasting events produced high densities of animal bones at the feasting location. In contrast, the Enga secular feasting events were either competitive in nature or used to repay debts. Food was provided by individual clans, but food consumption was not communal, as people received their food and left the feasting event to consume their food at home. As a result, the Enga secular feasts produced a smaller faunal signature compared to the high density of faunal remains leftover from sacred feasting events.

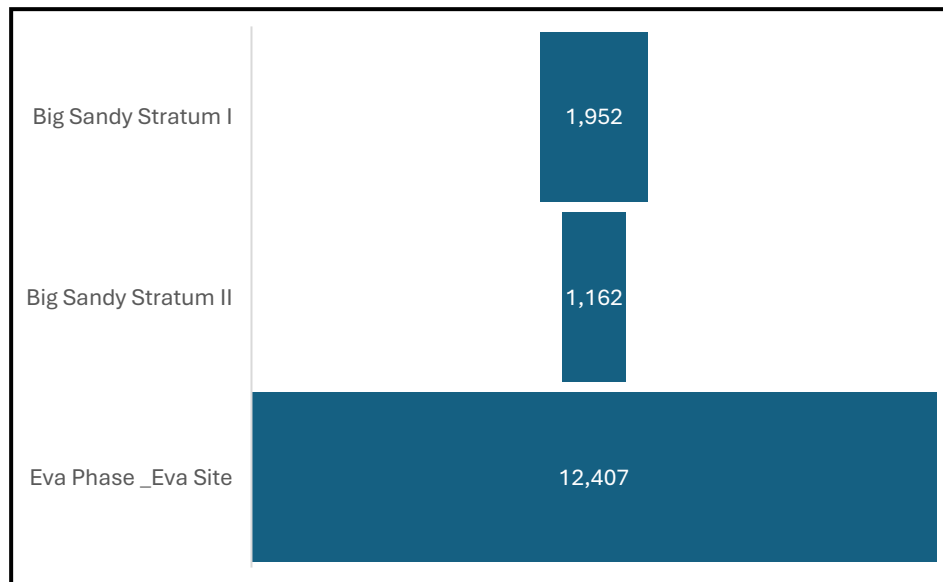


Figure 36. A Comparison of Deer NISP at the Eva and Big Sandy Sites, Circa 8900 to 8200 cal yr B.P.

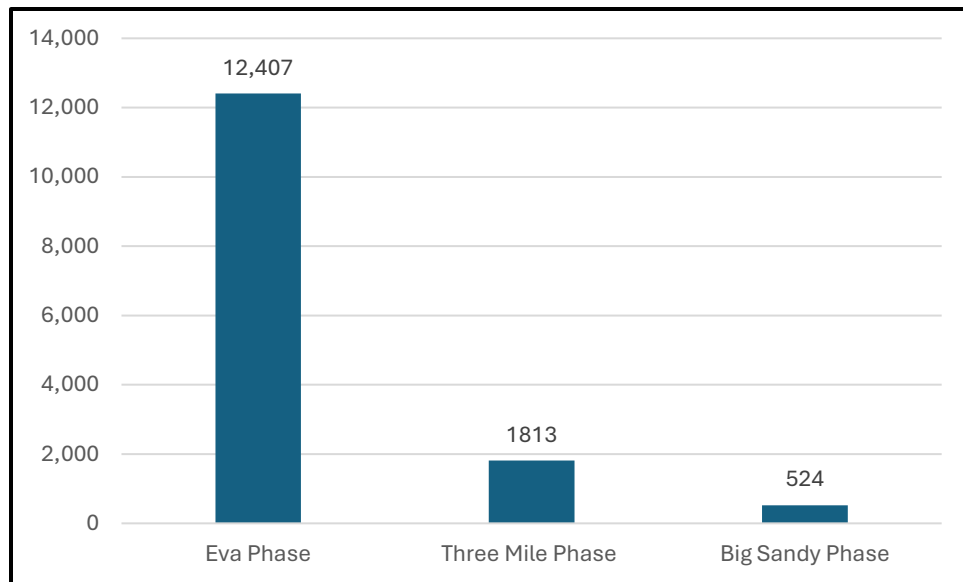


Figure 37. Deer Bones Raw Counts By Phase at the Eva Site.

During the 8900 to 8200 cal yr B.P. period at Big Sandy and at Eva the contribution of disarticulated small mammal ABGs provided a rather small contribution when compared to the contribution of disarticulated large mammal ABG. At the Big Sandy site, disarticulated large mammal ABGs contributed 97% while the disarticulated small mammal ABG consisted of only 3%. The disarticulated large mammal ABG at Eva stratum IV and V consisted of 83% while the disarticulated small mammal consisted of 17%. These percentages point to decreased contributions of women at the Big Sandy site in contrast to a higher contribution by women at the Eva site (**Figure 38**). The small count of disarticulated large and small mammal ABGs, and the low percentage of disarticulated small mammal ABGs at Big Sandy Stratum I is indicative of secular feasting. However, while the percentages of disarticulated mammal ABGs is the same for Stratum II, the addition of a high density of shellfish at Stratum II is probably evidence for the increased role of women in the procurement of food sources. If women contributed shellfish to the Stratum II assemblage, then Stratum II resembles a sacred feasting event where both males and females provided and consumed food on site.

At the Eva site, the high density of disarticulated mammal ABGs and the higher percentage for the disarticulated small mammal ABGs is indicative of a sacred feasting, where everyone (males and females) provided food for the feasting event. The high density of mammal ABGs is suggestive that the food was consumed and deposited at the site. However, the low percent of the disarticulated small mammal ABG points to a limited contribution of small mammals to the consumption events by women. The small contribution of small mammals may be evidence that males were the primary providers of feasting foods.

Mammal ABGs From The Big Sandy Site and the Eva Site. Percentage of NISP.

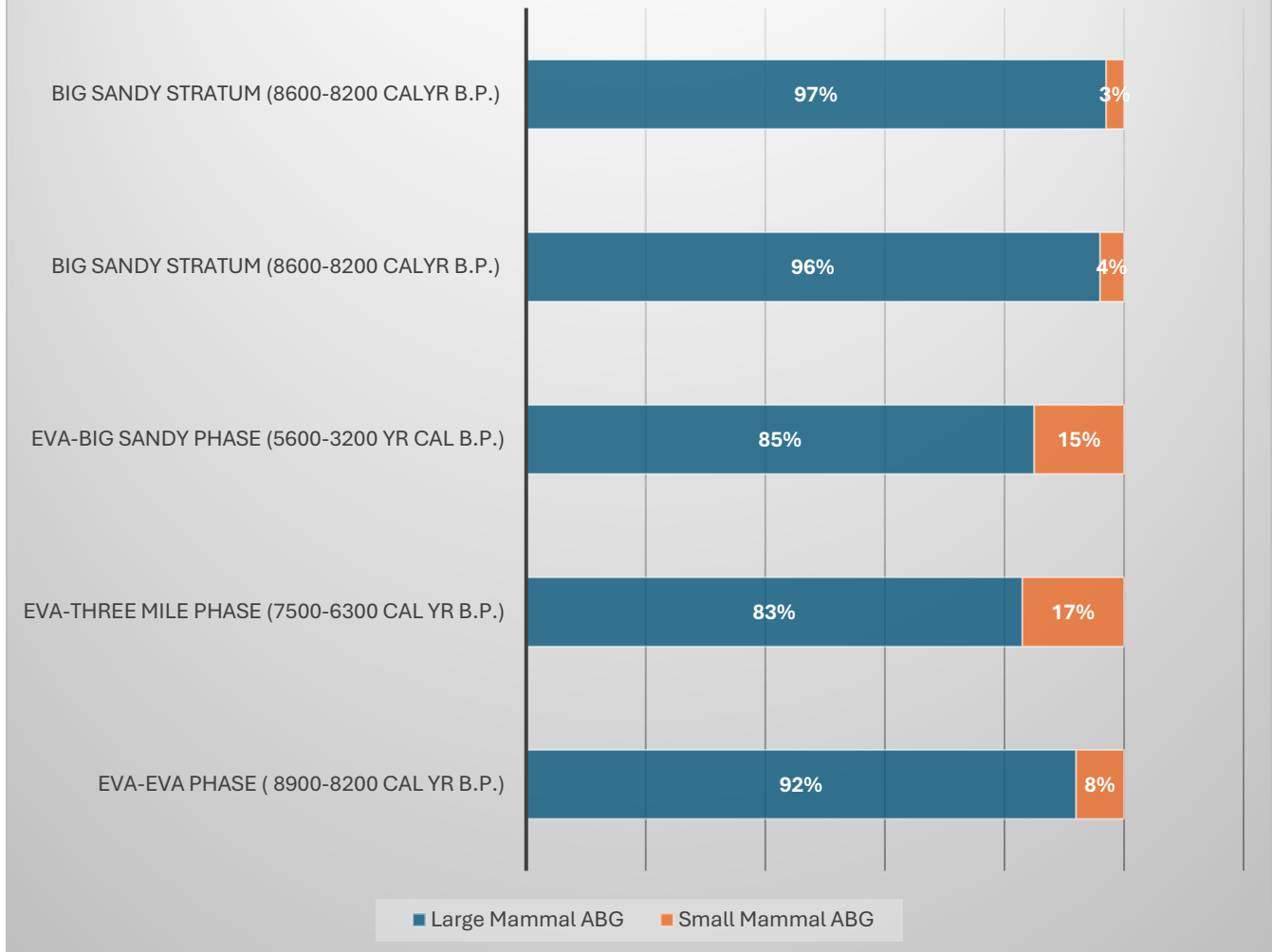


Figure 38. A Comparison of Large and Small Mammal ABGs Eva and Big Sandy.

Sometime around 7500 cal yr B.P., hunter-gatherers either abandoned or minimally occupied the Big Sandy site while hunter-gatherers at the Eva site replaced large scale mammal consumption events with the consumption and heaping of freshwater shells. For the next 1200 years or so, hunter-gatherers started piling large quantities of freshwater shells creating the shell mound shape found at the site. The shift to freshwater shells was accompanied by a decrease in the density of large mammal ABG (a decrease in deer) an increase in the percentage of small mammal ABGs, and an absence of articulated dog ABGs (until the end of Stratum II)..

The shift in the large mammal ABG was from 86% from Eva Stratum IV and V to 77% by Eva Stratum II. The small mammal ABG increased from 8% at Eva stratum IV and V to 15% in Eva Stratum II. The high density of shell deposition complicates the picture somewhat. If women were the primary collectors of shellfish, then their contribution to Stratum II is much higher than the 15% for the disarticulated small mammal ABG. If the small mammal ABG is more representative of women acquisition of animal protein, then as the freshwater shells increased so did the contribution of women to the overall protein for the site.

During most of Stratum II, food acquisition follows the expectations along gender lines with both genders contributing to the food acquisition and food consumption at the site. During this 1200 year period, the hunter-gatherers at Eva resemble egalitarian hunter-gatherers that were using Eva as an aggradation or persistent location, but not as a location where a secular or hierarchal social organization was created or maintained. This system stabilized over a 1200 year period until the interface of Stratum II/Stratum I, probably sometime around 6300 cal yr B.P.

Mammal Use At Cave Sites

The use of disarticulated ABGs at cave sites provide another line of evidence for gender organization during the Middle Archaic period. The high number of small mammal ABGs at the

Dust Cave site support the ideas presented by Claassen (2010, 2014) and Homsey-Messer (2015) that caves functioned (at least sometimes) as places for the social sphere of women. **Figures 39 and 40** compare the frequencies of large and small mammal ABGs between the Dust Cave site and Eva, and Dust Cave and the Big Sandy site, respectively. The large, disarticulated mammal ABG circa 8900–7000 cal yr B.P. consisted at 93% compared to 7% for the disarticulated small mammal ABG. The disarticulated mammal ABGs at Dust Cave, from 8900 to 7000 cal yr B.P., are similar to the mammal ABGs at the Big Sandy and Eva sites where large mammal contributed more than the small mammals. However, by the Eva/Morrow Mountain phase, circa 7000–6000 cal yr B.P., there is a shift to a higher percentage of the disarticulated small mammal ABG to 75% at the expense of the large mammal ABG at 25%.

This may represent a shift to a higher degree of women participation, or greater socialization of women's activities.

By the Three Mile Island Phase, circa 6000–5200 cal yr B.P., at the Dust Cave site, the disarticulated small mammal ABG decreases to 51% while the disarticulated large mammal ABG increases to 49%. This period at Dust Cave roughly corresponds with the Eva Stratum II/Stratum I transition, a period when shell mound construction is discontinued, and the placement of articulated dog ABDs decreases dramatically.

Archaic Human-Animal Relationships Within Bissett's 2014 Period Sequence

The sequence for changes in the human animal relationships was placed within the cultural sequence proposed by Bissett (2014). **Table 33** gives a description of the Archaic human-animal relationship in the lower Tennessee River Valley using the three Period system of Bissett (2014). **Table 33** provides a summary of the human-dog relationship through time within the context of a sacred, secular, and ecological model.

A Comparison of Large and Small Mammal ABGs the Eva and Dust Cave Site. Percentage of NISP.

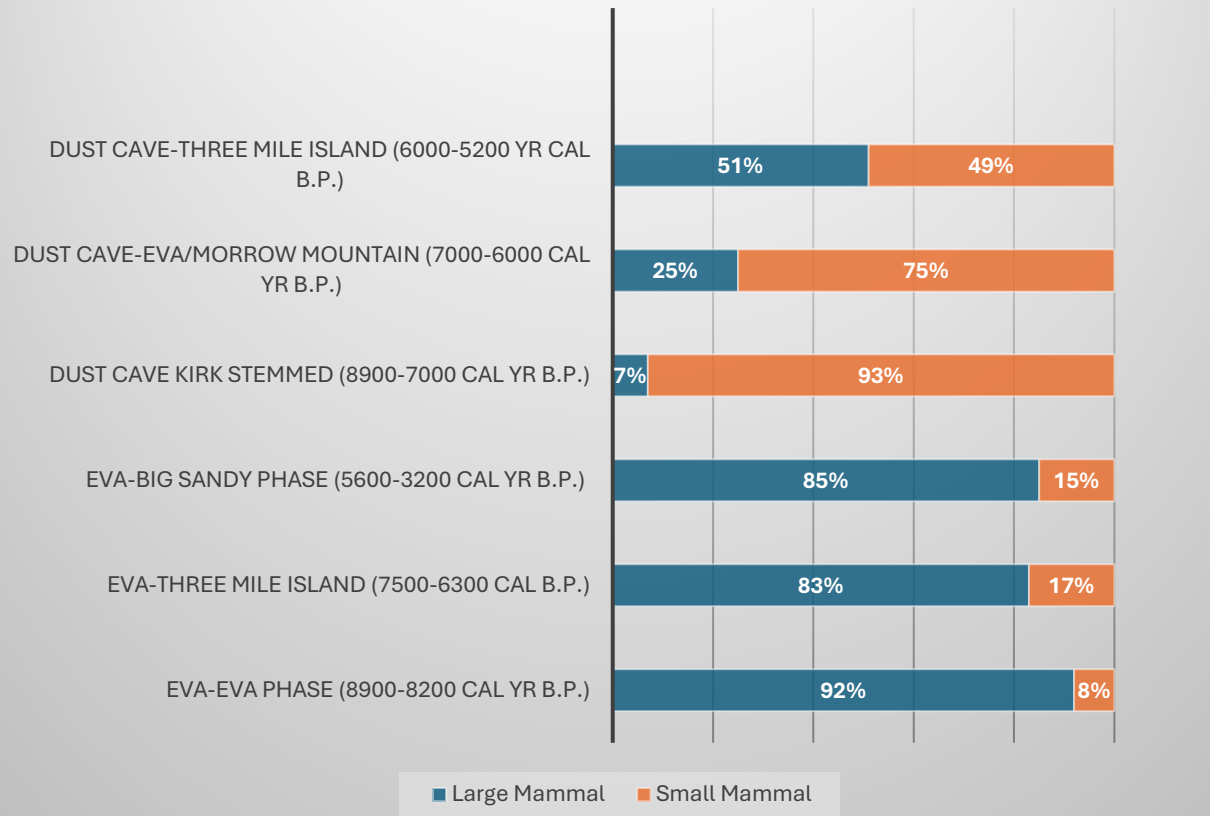


Figure 39. A Comparison of Large and Small Mammal ABGs at the Eva and Dust Cave Sites.

Large and Small Mammal ABGs at the Big Sandy Site and the Dust Cave Site. Percentage of NISP.

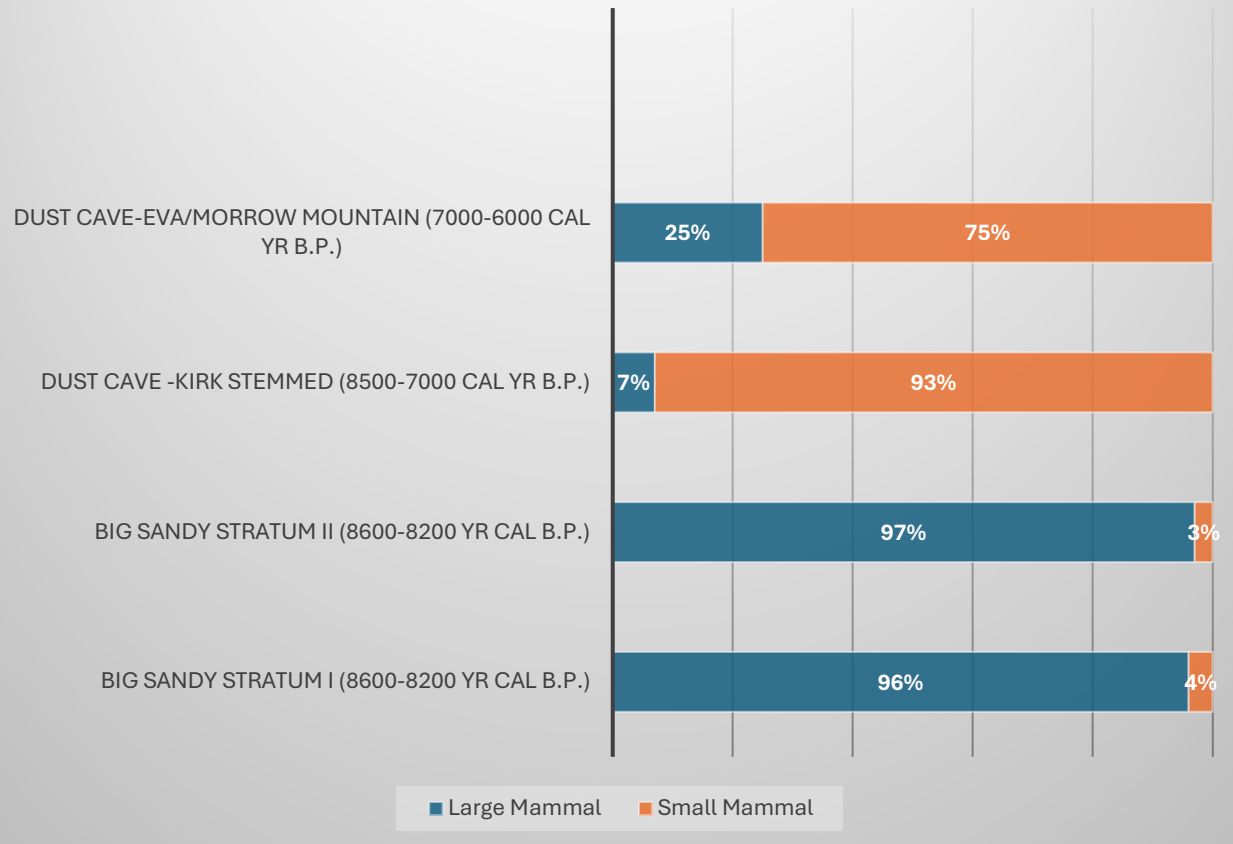


Figure 40. Large and Small ABGs Dust Cave, Big Sandy and Eva.

Table 33. Articulated Dog ABGs Through Time in the Lower Tennessee River Study Area.

Period	Date	Site	Organization	Articulated Dog ABGs
Period III	5600-3600	Oak View, Kay's Landing, Ledbetter Landing McDaniel	Secular	Private Property
Period II	Post 6300	Eva Stratum III	Secular	Dogs Transition to Private Property
Period II	6300	Eva Stratum II	Sacred	Cluster Ceremonial Context Dog ABGs
Period II	7500-6300	Eva Stratum II Construction of Shell Mound	Sacred	Dogs Are Absent
Period II	7600-6300	Dust Cave- Caves become spaces for women	Sacred	Dogs buried in caves
Period I	8900-8200	Big Sandy Stratum I	Secular	Dogs Private Property
Period I	8900-8200	Big Sand Stratum II	Sacred	Dogs Buried in Shell Covered Cemetery
Period I	8900-8200	Eva Stratum Iv and V	Secular	Articulated Dogs Are Absent

Period I 8900-8200 cal yr B.P.

During Period I, 8900-8200 cal yr B.P., hunter-gatherers exhibited two different relationships with dogs. One human-dog relationship was found at the Big Sandy site where dogs were private property, brought into the social sphere of humans and placed with humans in the shell free cemetery around 8600 cal yr B.P. This acceptance of a domesticated animal into the human interaction sphere coincides with the Early/Middle Archaic transition, a time of change that has been documented throughout the eastern United States. The appearance of domesticated dogs with human interments was the first occurrence of this type of relationship known for the Mid-South. Sometime after 8600 cal yr B.P., the hunter-gatherers at Big Sandy capped their human and dog cemetery with shells and then began to use the shell filled cemetery for the deposition of articulated dog ABGs along with human interments.

At roughly the same time, hunter-gatherers at Eva were conducting consumption events that left a large density of disarticulated animal bones at the expense of articulated dog ABGs. A small amount of disarticulated dog ABGs were recovered at Eva, suggesting that dogs were consumed as during these consumption events. The large amount of disarticulated mammal bones at Eva indicates large feasting-like events that are similar the expectation of that for sacred feasting or feasting-like events. Toward the end of Period I, articulated dog ABGs vanish at the Big Sandy site while the Eva site transitioned to a place that hunter-gatherers used ephemerally for 700-800 years.

Period II 7600-6300 cal yr B.P.

During Period II, the occupation at the Big Sandy declines with only minimal use after 8200 cal yr B.P. However, the Eva site continued to host hunter-gatherer habitations but in a different context than the preceding habitations at the site. Hunter-gatherers at the Eva site began to

collect freshwater shells and heap them into a mound configuration for the next 1200 years. For the majority of Period II at Eva, there are no articulated dog ABGs and the counts for disarticulated large and small mammals decrease dramatically from that in Period I. This decrease in disarticulated mammal ABGs at Eva came with an increase in freshwater shells. At the end of Stratum II, articulated dog ABGs appear and were clustered roughly around the Stratum II/Stratum I transition. The appearance of articulated dog ABGs was a short event that materialized with increased shell mounding. Following the burst of articulated dog ABGs at the end of Stratum II, articulated dog ABGs decrease (from 15 to 2) and hunter-gatherers stop accumulating fresh water shells.

The deposition of articulated dog ABGs at the Big Sandy cluster and at the Eva cluster were not deposited as feasting foodstuffs but most likely as sacrifices (see Hayden 2003:461 for the difference on feasting and animal sacrifice).

Period III 5600-3600 B.P.

Period III roughly corresponds with the late Middle Archaic into the Late Archaic period. During this transition, shell mounding ceases at Eva while new site types are found in the lower Tennessee River Valley. These new sites are believed to have been occupied on a semi-permanent basis evident by the identification of post molds. Other changes included the arrival of exotic items like copper and shellfish species from other regions outside of the lower Tennessee River Valley. During this period, articulated dog ABGs are found at more sites but in smaller numbers. In other words, Late Archaic hunter-gatherers did not cluster articulated dog ABGs at select locations like that of Middle Archaic hunter-gatherers. Instead, articulated dog ABGs were deposited across the lower Tennessee River Valley in smaller numbers during the Late Archaic period. The author interprets this change as a shift from a collective control of dogs

during most of the Middle Archaic period, especially after 8200 cal yr B.P. to individual ownership of dogs during the Late Archaic period.

Future Research

This dissertation has shown that information from past excavations can still be sources for research material. New approaches and new conceptual models can use the previously published data in different ways than their original analysis. Previous interpretative frameworks for Archaic faunal remains relied on models that were interpreted within a subsistence framework. The use of published data can be used as gauges for inferring larger social changes in Archaic hunter-gatherer communities that existed in the lower Tennessee River Valley. My research has been influenced by other archaeologists who have demonstrated that Archaic hunter-gatherers lived in dynamic communities that responded to natural and cultural changes through the creation of new ideologies, new customs, and new social organizations.

Future Faunal Research

Future research should incorporate the published data from the Late Archaic sites located in the Green River Valley of Western Kentucky. These sites have good, published data that can be used to develop a model for the use of articulated dog ABGs, a comparison of small mammal ABGs with the use of disarticulated large mammal ABGs. should involve a comparison of the shell bearing cultures located north of the lower Tennessee River Valley to include those sites of the Green River Valley and shell bearing sites in the lower Mid-western United States. Spreading a wider net to include these sites will further our understanding of how Middle and Late Archaic used human-animal relationships to develop and maintain their social systems. These sites are important because they can provide a better understanding on the use of carcass part distribution of hunter-gatherer communities.

Feasting Versus Public Display

One avenue for future research is the comparison of the regional differences and similarities of “dispositional narratives” at Shell Mound Archaic sites. Sites located in different regions may have different types of socialization activities that included feasting, human interments, and dog interments. These regional “dispositional narratives” can include feasting events while other Shell Mound Archaic sites added public displays of human and/or dog interments. Future research should try and link these feasting behaviors and public displays as evidence for the presence of different hunter-gatherer groups that used different social events at these sites.

Human-Animal Relationships at Shell Mound Sites and at Earthen Mound Sites

Another avenue for future research is the comparison of the faunal data from Shell Mound Archaic sites with the faunal data recovered from Middle Archaic earthen mounds found in the Lower Mississippi Valley. Limited excavations have been conducted during the 1990s with detailed faunal analysis conducted at several sites. A comparison of the percentage of small and large mammal disarticulated ABGs could show if there was a difference in how animals were brought to the site, equal contribution, oriented toward men, or oriented toward women.

Another area for potential research is continued fieldwork in the Middle Cumberland River Valley in Middle Tennessee, located east of the study area. Although frequent flooding has eroded many shell sites, many sites retain intact deposits. Previous excavations at these sites demonstrate that this region has a diversity of shell bearing sites. The sites in the Middle Cumberland River Valley provide an excellent opportunity to conduct modern excavation techniques and an excellent opportunity to test the models put forth in this dissertation.

REFERENCES

- Angelbeck, Bill, and Colin, Grier. 2012 Anarchism and the Archaeology of Anarchic Societies: Resistance to Centralization in the Coast Salish Region of the Pacific Northwest Coast. *Current Anthropology* 53 (5):547–87.
- Allen, G.M. 1920. *Dogs of the American Aborigines. Bulletin of the Museum of Comparative Zoology. Harvard College.* LXIII (9).
- Ames, Kenneth M. 1994. The Northwest Coast: Complex Hunter-Gatherers, Ecology, and Social Evolution. *Annual Review of Anthropology* 23:209–29. *JSTOR*.
<http://www.jstor.org/stable/2156012>. Accessed 24 Sept. 2023.
- Amiot, Catherine, Bastian Brock, and Martens Pim. 2016. People and Companion Animals: It Takes Two to Tango. *BioScience* 55(7):552–60. <https://www.jstor.org/stable/90007627>
- Anderson, Abigail, Sophia Chilczuk, Kaylie Nelson, Roxanne Ruther, and Cara Wall-Scheffler. 2023. The Myth of Man the Hunter: Women’s Contribution to the Hunt across Ethnographic Contexts. *PLoS ONE* 18(6):e0287101 <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0287101>
1. Accessed April 15th , 2023.
- Anderson, David G. 1995. Recent Advances in Paleoindian and Archaic Period Research in the Southeastern United States. *Archaeology of Eastern North America* 23:145–176.
- Anderson, David G. 2001. Climate and Culture Change in Prehistoric and Early Historic Eastern North America. *Archaeology of Eastern North America* 29:143–86.
- Anderson, David G. 2002 Evolution of Tribal Social Organization in the Southeast. In *The Archaeology of Tribal Societies*, edited by William A. Parkinson, pp. 246–277. International Monographs in Prehistory, Ann Arbor.

- Anderson David G. 2004. Archaic Mounds and the Archaeology of Southeastern Tribal Societies. In *Signs of Power: The Development of Complexity in the Southeast*, edited by Jon L. Gibson and Philip J. Carr, pp. 270–299. The University of Alabama Press, Tuscaloosa.
- Anderson, David G. 2014. Paleo Indian and Archaic Periods In North America. In *Cambridge World Prehistory*, edited by Paul Bahn and Colin Renfrew, pp. 913–932. Cambridge University Press, Cambridge, United Kingdom.
- Anderson, David G., and Robert, Cook. 2017. The Development of Complex Societies in Eastern North America: The Roles of Feasting, Famine, and Fighting. In *Feast, Famine or Fighting? Multiple Pathways to Social Complexity*, edited by Richard J. Chacon and Rubén G. Mendoza, pp. 269–303. Springer, New York.
- Anderson, David G. and Kenneth, E. Sassaman. 2004. Early and Middle Holocene Periods, 9500–3750 B.C. In *Southeast Volume, Smithsonian Handbook of North American Indians*, edited by Raymond D. Fogelson, pp. 87–100. Smithsonian Institution, Washington, D.C.
- Anderson, David G. and Kenneth, E. Sassaman. 2012. *Recent Developments in Southeastern Archaeology: From Colonization to Complexity*. Society for American Archaeology Press, Washington, D.C.
- Anderson, David G., Michael Russo, and Kenneth, E. Sassaman. 2007. Mid-Holocene Cultural Dynamics in Southeastern North America. In *Climate Change and Cultural Dynamics: A Global Perspective on Mid-Holocene Transitions*, edited by David G. Anderson, Kirk A. Maasch, and Daniel H. Sandweiss, pp. 457–89. Academic Press, Amsterdam.

- Anikpo, Mark. 1984. Rituals of Solidarity in an Igbo Village: A Symbolic Analysis of Meat Sharing Practices Among The Mmaku Igbo. *Cambridge Anthropology* 9(1):33–47. *JSTOR*, <http://www.jstor.org/stable/23816251>. Accessed 1 Dec. 2023.
- Appadurai, Arjun. 1986. *The Social Life of Things: Commodities in Cultural Perspective*. Cambridge University Press: Cambridge, England.
- Arnold, Jeanne E. 1996. The Archaeology of Complex Hunter-Gatherers. *Journal of Archaeological Method and Theory* 3(2):77–125.
- Assmann, Jan, and John Czaplicka. 1995. Collective Memory and Cultural Identity. *New German Critique* 65:125–33. *JSTOR*, <https://doi.org/10.2307/488538>. Accessed 28 Dec. 2023.
- Azua, R. Valadez. 2000. Prehistoric dog types in Middle America. In *Dogs Through Time: An Archaeological Perspective.*, edited by Susan Janet Crockford, pp. 193–204. Proceedings of the 1st ICAZ Symposium on the History of the Domestic Dog. Eight Congress of the International Council for Archaeozoology. BAR International Series 889, Archaeopress, Oxford England.
- Barsh, Russel, L., Joan Megan Jones, and Wayne Shuttles. 2006. History, Ethnography, and Archaeology of the Coast Salish Woolly-Dog. In *Dogs and People in Social, Working, Economic or Symbolic Interaction*, edited by Lynn M. Synder and Elizabeth A. Moore, pp. 1–11. Oxbow Books, Oxford.
- Bertasius, Mindaugas. 2014. Horse Burials as Public Ritual: Lithuanian Perspectives. In *The Ritual Killing and Burial of Animals: European Perspectives*, edited by Aleksander Pluskowski, pp. 21–54. Oxbow Books, Oxford England.
- Binford, Lewis R. 1962. Archaeology as Anthropology. *American Antiquity*, 28(2): 217–25.
- Binford, Lewis R. 1978. *Nunamiut Ethnoarchaeology*. Academic Press, New York

- Binford, Lewis R. 1980. Willow Smoke and Dogs' Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. *American Antiquity* 45(1):4–20.
- Binford, Lewis and Jeremy A. Sabloff. 1982. Paradigms, Systematics, and Archaeology, *Journal of Archaeological Research* 38(2):137–153.
- Bissett, Thaddeus. 2014. The Western Tennessee Shell Mound Archaic: Prehistoric Occupation in the Lower Tennessee River Valley Between 9000 and 2500 Cal Yr BP. PhD Dissertation, University of Tennessee, Knoxville.
- Black, Lydia T. 1998. Bear in Human Imagination and in Ritual. *Ursus* 10:343–47. Electronic document. <http://www.jstor.org/stable/3873145>. Accessed 18 Feb. 2024.
- Bissett, Thaddeus, G., Stephen B. Carmody, and Shane Miller. 2019. Investigations at the Barnes Site (40DV307). In *The Cumberland River Archaic of Middle Tennessee*, edited by Tanya M. Peres and Aaron Deter-Wolf pp. 91–100. University of Florida Press, Gainesville.
- Bogan, Arthur. 1980. A Comparison of Late Prehistoric Dallas and Overhill Cherokee Subsistence Strategies in the Little Tennessee River Valley. Department of Anthropology. PhD dissertation. University of Tennessee, Knoxville.
- Bourdieu, Pierre. 1985. The Social Space and the Genesis of Groups. *Theory and Society* 14(16):723–44. Electronic document. <http://www.jstor.org/stable/657373>. Accessed 27 May 2024.
- Bourdieu, Pierre. 1989. Social Space and Symbolic Power. *Sociological Theory* (7) 1:14–25. Electronic document. <https://doi.org/10.2307/202060>. Accessed 27 May 2024.
- Bourdieu, Pierre. 1993. *The Field of Cultural Production*. Polity Press, Cambridge, UK.
- Bozell, John R. 1988. Changes in the Role of the Dog in Protohistoric-Historic Pawnee Culture. *Plains Anthropologist* 33(119):95–111. Electronic document. <http://www.jstor.org/stable/25668738>. Accessed 9 June 2024.

- Brash, Russel L., Joan Megan Jones, and Wayne Suttles .2002. History, Ethnography, and archaeology of the Coast Salish Woolly-Dog. In *Dogs and People in Social, Working, Economic or Symbolic Interaction*, editors Lynn M. Synder and Elizabeth A. Moore, pp.1-12. Oxbow Books, Oxford UK.
- Bräuer, Juliane, and Blanca Vidal Orga. 2023. Why Wolves Became Dogs: Some Interdisciplinary Questions on Domestication. In *Dogs, Past and Present: An Interdisciplinary Perspective*, edited by Ivanna Fiore and Lugli Francesca, pp.72–81. Archaeopress, Oxford UK.
- Braun E., Lucy. 1950. *Deciduous Forests of Eastern North America*. Blakiston, Philadelphia.
- Brightman, Robert. 1996. The Sexual Division of Foraging Labor: Biology, Taboo, and Gender Politics *Comparative Studies in Society and History* 38(4):687–729. Electronic document. <http://www.jstor.org/stable/179196>. Accessed 30 March 2023.
- Bräuer, Juliane, and Blanca Vidal Orga. 2023. Why Wolves Became Dogs: Interdisciplinary Questions on Domestication. In *Dogs, Past and Present: An Interdisciplinary Perspective*, edited by Ivana Fiore and Francesca Lugli, pp. 72–81. Archaeopress, Oxford, England.
- Caldwell, Joseph. 1958. *Trend And Tradition in the Prehistory of the Eastern United States*. Illinois State Museum Scientific Papers, Vol. 10. American Anthropological Association Memoir No. 88.
- Cashdan, Elizabeth A. 1980. Egalitarianism among Hunters and Gatherers. *American Anthropologist* 82(1):116–20.
- Chapman, Robert. 2003. *Archaeologies of Complexity*. Routledge, London.
- Claassen, Cheryl. 1991. Gender, Shell fishing, and the Shell Mound Archaic. In *Engendering*

- Archaeology Women in Archaeology*, edited by Margaret Conkey and Joan Gero, pp. 276–300, Basil Blackwell, Massachusetts.
- Claassen, Cheryl. 2010. *Feasting With Shellfish in the Southern Ohio River Valley*. University of Tennessee Press, Knoxville, Tennessee.
- Claassen, Cheryl. 2014. *Beliefs and Rituals in the Archaic Eastern North America: An Interpretive Guide*. The University of Alabama Press, Tuscaloosa.
- Clark, John E. 2004. Surrounding the Sacred: Geometry and Design of Early Mound Groups as Meaning and Function. In *Signs of Power: The Rise of Cultural Complexity in the Southeast*, edited by Jon L. Gibson and Philip J. Carr, pp. 162–213. University of Alabama Press, Tuscaloosa.
- Clark, John E., and Michael Blake. 1994. The Power of Prestige: Competitive Generosity and the Emergence of Rank Societies in Lowland Mesoamerica. In *Factional Competition in the New World*, edited by Elizabeth M. Brumfiel and John W. Fox, pp. 17–30. Cambridge University Press, Cambridge, U.K.
- Colaninno, Carol E. 2012. Evaluating Formational Models for Late Archaic Shell Rings of the Southeastern United States Using Vertebrate Fauna From the St. Catherines Shell Ring, St. Catherines Island, Georgia. *The Journal of Island and Coastal Archaeology* 7(3):338–362.
- Crabtree, Pam J. 1990. Zooarchaeology and Complex Societies: Some Uses of Faunal Analysis for the Study of Trade, Social Status, and Ethnicity. *Archaeological Method and Theory* 2:155–205.
- Electronic document. <http://www.jstor.org/stable/20170207>. Accessed 28 Apr. 2024.

- Crockford, Susan J., and Cameron J. Pye. 1997 Forensic Reconstruction of Prehistoric Dogs from the Northwest Coast. *Canadian Journal of Archaeology / Journal Canadien d'Archéologie* 21(2):149–53. Electronic document. <http://www.jstor.org/stable/41104430>. Accessed 18 Feb. 2024.
- Davis, Donald E. 2005. *Where There Are Mountains. An Environmental History of the Southern Appalachians*. The University of Georgia Press, Athens.
- Deter-Wolf, Aaron and Tanya M. Peres 2019. Introduction. In *The Cumberland River Archaic of Middle Tennessee*, edited by Tanya M. Pere and Aaron Deter-Wolf, pp. 1–14. University of Florida Press, Gainesville.
- Deter-Wolf, Aaron and Leslie Straub 2019. Archaic Shell-Bearing Site Investigations in the Middle Cumberland River Valley. In *The Cumberland River Archaic of Middle Tennessee*, edited by Tanya M. Pere and Aaron Deter-Wolf, pp.15–41. University of Florida Press, Gainesville.
- Diener, Paul, Donald Nonini, and Eugene E. Robkin. 1978. The Dialectics Of The Sacred Cow: Ecological Adaptation Versus Political Appropriation In The Origins of India's Cattle Complex. *Dialectical Anthropology* 3(3):221–41. Electronic document. <http://www.jstor.org/stable/29789935>. Accessed 29 May 2024.
- Diener, Paul, et al. 1978. Ecology, Evolution, and the Search for Cultural Origins: The Question of Islamic Pig Prohibition [and Comments and Reply]. *Current Anthropology* 19(3):493–540.
- Dietler, Michael. 2001. Theorizing the Feasts: Rituals of Consumption, Commensal Politics, and Power in African Contexts. In *Feasts Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, edited by Michael Dietler and Brian Hayden, pp. 65–114. Smithsonian Institution Press, Washington, D.C.

- Dietler, Michael and Brian Hayden. 2001. Digesting the Feast: Good to Eat, Good to Drink, Good to Think, An Introduction. In *Feasts Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, edited by Michael Dietler and Brian Hayden, pp.1–20. Smithsonian Institution Press, Washington, D.C.
- de Waal, Frans B. M. 1999. Anthropomorphism and Anthropodenial: Consistency in Our Thinking about Humans and Other Animals. *Philosophical Topics* 27(1):255–80. Electronic document. <http://www.jstor.org/stable/43154308>. Accessed 6 May 2023.
- Dixon, Helen. 2018. Late 1st-Millennium B.C.E. Levantine Dog Burials as an Extension of Human Mortuary Behavior. *Bulletin of the American Schools of Oriental Research* 379:19–41.
- Doran, Glen H. (editor). 2002. *Windover: Multidisciplinary Investigations of an Early Archaic Florida Cemetery*. University Press of Florida, Gainesville.
- Drake, Daniel. 1815. *The Natural and Statistical View of Cincinnati and Miami County*. Looker and Wallace.
- Driese, Steven G., Zheng-Hua Li, and Larry D. McKay. 2008. Evidence for Multiple, Episodic, Mid-Holocene Hypsithermal Recorded in Two Soil Profiles along an Alluvial Floodplain Catena, Southeastern Tennessee, USA. *Quaternary Research* 69(2):276–291.
- Dunham, Gary H. Debra L. Gold, and Jeffery L. Hantman. 2003. Collective Burial in Late Prehistoric Virginia: Excavation and Analysis of the Rapidan Mound. *American Antiquity* 68(1):109–28.
- Dye, David H. 1996. Riverine Adaptation in the Midsouth. In *Of Caves and Shell mounds*, edited by K. C. Carstens and Patty Jo Watson, pp. 140–158. University of Alabama Press, Tuscaloosa.

- Dyson, Stephen L. 1993. From New to New Age Archaeology: Archaeological Theory and Classical Archaeology—A 1990s Perspective. *American Journal of Archaeology* 97(2):195–206.
Electronic document. <https://doi.org/10.2307/505656>. Accessed 20 May 2023.
- Emslie, Steven D. 1978. Dog Burials from Mancos Canyon, Colorado. *Kiva* 43(3/4):167–82.
Electronic document. <http://www.jstor.org/stable/30247648>. Accessed 7 Jan. 2024.
- Feuchtwang, Stephan. 2010. Ritual and Memory. In *Memory: Histories, Theories, Debates*. Edited by Susannah Ragstone and Bill Schwarz, pp. 281–98. Fordham University Press, New York City, New York.
- Fern, Chris. 2014. Early Anglo-Saxon Horse Culture and Funerary Ritual (c. AD 450–650): Active Mythology in a European Context. In *The Ritual Killing and Burial of Animals: European Perspectives*, edited by Aleksander Pluskowski, pp. 165–183. Oxbow Books, Oxford, U.K.
- Fershtman, Chaim, Uri Gneezy, and Moshe Hoffman. 2011. Taboos and Identity: Considering the Unthinkable. *American Economic Journal: Microeconomics* 3(2):139–64.
- Fiedel, Stuart J. 2005. Man's Best Friend -- Mammoth's Worst Enemy? A Speculative Essay on the Role of Dogs in Paleoindian Colonization and Megafaunal Extinction. *World Archaeology* 37(1):11–25.
- Fisher, Daniel C. 1984. Taphonomic Analysis of Late Pleistocene Mastodon Occurrences: Evidence of Butchery by North American Paleo-Indians. *Paleobiology* 10(3):338–57.
- Flanagan, James G. 1989. Hierarchy in Simple "Egalitarian" Societies. *Annual Review of Anthropology* 18:245–266.
- Gamble, Lynn H. 2017. Feasting, Ritual Practices, Social Memory, and Persistent Places: New Interpretations On Shell Mounds in Southern California. *American Antiquity* 82(3):427–51.
Electronic document. <https://www.jstor.org/stable/26585445>. Accessed 14 June 2024.

Germonpré, Mietje, Martina Láznicková-Galetová, Mikhail V. Sablin, and Hervé Bocherens. 2023.

The Advantages of Owning a Paleolithic Dog. In *Dogs, Past and Present: An Interdisciplinary Perspective*, edited by Ivana Fiore and Francesca Lugli, pp. 63–71.

Archaeopress, Oxford, England.

Gibson, Jon L. 1994 Before Their Time? Early Mounds in the Lower Mississippi Valley.

Southeastern Archaeology, 13 (2):162–186.

Gibson, Jon L., and Phillip J. Carr. 2004. *Signs of Power: The Development of Complexity in the*

Southeast. The University of Alabama Press, Tuscaloosa.

Giocomo, James, E. Daniel Moss, David A. Buehler, and William G. Minser. 2008. Nesting

Biology of Grassland Birds at Fort Campbell, Kentucky, and Tennessee. *The Wilson Journal of Ornithology* 120(1): 111–119.

Griffen, James B. 1967. Eastern North American Archaeology: A Summary. *Science* 156:175–

191.

Grøn, Ole. 1991. A Method for Reconstruction of Social Organization in Prehistoric Societies and

Examples of Practical Application. In *Social Space Human Spatial Behavior in Dwellings and Settlements* edited by Ole Grøn, Ericka Engelsted, and Inge Lindblom, pp. 100–117.

Odense University Press, Odense, Denmark.

Guenther, Mathias G. 1975. The Trance Dancer as an Agent of Social Change among the Farm

Bushmen of the Ghanzi District. *Botswana Notes and Records* 7:161–66. JSTOR,

<http://www.jstor.org/stable/40979437>. Accessed 30 Nov. 2023.

Guiry, Eric J. 2012. Dogs as Analogs in Stable Isotope-Based Human Paleodietary Reconstructions:

A Review and Considerations for Future Use. *Journal of Archaeological Method and Theory* 19(3):351–76.

- Gunnerson, Dolores A. 1972. Man and Bison on the Plains in the Protohistoric Period. *Plains Anthropologist* 17(55):1–10. Electronic document. <http://www.jstor.org/stable/25667046>. Accessed 9 June 2024.
- Gurven, Michael and Kim Hill. 2009. Why Do Men Hunt?: A Reevaluation of ‘Man the Hunter’ and the Sexual Division of Labor. *Current Anthropology* 50(1):51–74.
- Hann, John H. 1992. Political Leadership among the Natives of Spanish Florida. *The Florida Historical Quarterly* 71(2):188–208. Electronic document. <http://www.jstor.org/stable/30150360>. Accessed 29 Nov. 2023.
- Harrison, Brian. 1973. Animals and the State in Nineteenth-Century England. *The English Historical Review* 88(349):786–820. Electronic document. <http://www.jstor.org/stable/562935>. Accessed 3 May 2024.
- Hawkes, K., J. O’Connell, and N. Burton Jones. 1991. Hunting Income Patterns among the Hadza: Big Game, Common Goods, Foraging Goals, and the Evolution of the Human Diet [and Discussion]. *Philosophical Transactions: Biological Sciences* 334(1270):243–51. *JSTOR*, <http://www.jstor.org/stable/55461>. Accessed 25 Mar. 2023.
- Hayden, Brian. 1997. *The Pit Houses of Keatley Creek*. Harcourt Brace. Fort Worth.
- Hayden, Brian. 1998. Practical and Prestige Technologies: The Evolution of Material Systems. *Journal of Archaeological Method and Theory* 5(1):1–55.
- Hayden, Brian. 2001a. Richman, Poorman, Beggerman, Chief: The Dynamics of Social Inequality. In *Archaeology at the Millennium A Sourcebook*, edited by Gary M. Feinman and T. Douglas Price, pp. 231–272. Kluwer Academic/Plenum Publishers, New York.
- Hayden, Brian. 2001b. Fabulous Feasts: A Prolegomenon to the Importance of Feasting. In *Feasts Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, edited by

- Michael Dietler and Brian Hayden, pp.23–65. Smithsonian Institution Press, Washington, D.C.
- Hayden, Brian. 2003. Were Luxury Foods the First Domesticates? Ethnoarchaeological Perspectives from Southeast Asia. *World Archaeology* 34(3):458–469.
- Hayden, Brian. 2005. The Emergence of Large Villages and Large residential Corporate Group Structures among Complex Hunter-Gatherers at Keatley Creek. *American Antiquity* 70(1): 169-174.
- Haynes, Gary. 1983. Evidence of Carnivore on Pleistocene and Recent Mammalian Bones. *Paleobiology* 6 (3):341–351.
- Henderson, Norman. 1994. Replicating Dog Travois Travel on the Northern Plains. *Plains Anthropologist* 39(148):145–59. <http://www.jstor.org/stable/25669259>.
- Hildebrandt, William R., and Kelly R. McGuire. 2002. The Ascendance of Hunting during the California Middle Archaic: An Evolutionary Perspective. *American Antiquity* 67(2):231–56. *JSTOR*, <https://doi.org/10.2307/2694565>. Accessed 1 Dec. 2023.
- Hill, Erica. 2000. The Contextual Analysis of Animal Interments and Ritual Practice in Southwestern North America. *Kiva* 65(4):361–98. *JSTOR*, <http://www.jstor.org/stable/30246334>. Accessed 8 Jan. 2024.
- Hill, Erica. 2013. Archaeology and Animal Persons: Toward a Prehistory of Human-Animal Relations. *Environment & Society* 4:117–36. *JSTOR*, <http://www.jstor.org/stable/43297040>. Accessed 30 Nov. 2023
- Hantman, Jeffrey L., and Gary Dunham. 1993. The Enlightened Archaeologist. *Archaeology* 46(3):44–49. *JSTOR*, <http://www.jstor.org/stable/41766361>. Accessed 27 Nov. 2023.

- Hesse, Brian, and Paula Wapnish. 1985. *Animal Bone Archaeology, From Objectives to Analysis*. Taraxacum. Washington.
- Hollenbach, Kandace. 2009. *Foraging in the Tennessee River Valley: 12,500 to 8,000 Years Ago*. University of Alabama Press, Tuscaloosa.
- Holmes, Matilda, Helena Hameron, and Richard Thomas. 2021. Close companions? A Zooarchaeological Study of the Human-Cattle Relationship in Medieval England. *Animals* 11(4) 1174:1–18.
- Homsey-Messer, Lara. 2015. Revisiting The Role of Caves and Rockshelters In The Hunter-Gatherer Taskscape of the Archaic Midsouth. *American Antiquity* 80(2):332–52.
- Horvath, Tunde. 2014. Animal Deposits in the Late Copper Age Settlement of Balatonoszod-Temetoidulo, Hungary. In *The Ritual Killing and Burial of Animals*, edited by Aleksander Pluskowski, pp:115–136. Oxbow Books, Oxford England.
- Hughes, Courtney, Beatrice Frank, Natalka A. Melnycky, Nicholas T. Yarmey, and Jenny Anne Glikman. 2002. From Worship to Subjugation: Understanding Stories about Bears to Inform Conservation Efforts. *Ursus* 31:1–12. <https://www.jstor.org/stable/48641458>.
- Ingold, Tim. 1980. *Hunters, Pastoralists, and Ranchers*. Cambridge University Press, Cambridge, UK.
- Ingold, Tim. 1986. Reindeer Economies: And the Origins of Pastoralism. *Anthropology Today* 2(4):5–10.
- Jackson, H. Edwin. 2014. Animals as Symbols, Animals as Resources: The Elite Faunal Record in the Mississippian World. *Animals and Inequality in the Ancient World*, edited by Benjamin S. Arbuckle and Sue Ann McCarty, pp. 107–24. University Press of Colorado, Boulder. *JSTOR*, <http://www.jstor.org/stable/j.ctt128809k.11>. Accessed 2 Dec. 2023.

- Jackson, H. Edwin, and Susan L. Scott. 1995. The Faunal Record of the Southeastern Elite: The Implications of Economy, Social Relations, and Ideology. *Southeastern Archaeology*, 14(2):103–19. *JSTOR*, <http://www.jstor.org/stable/40713615>. Accessed 2 Dec. 2023.
- Jackson, H. Edwin, and Susan L. Scott. 2001. Archaic Faunal Utilization in the Louisiana Bottomlands. *Southeastern Archaeology* 20(2):187–96.
- Jackson, H. Edwin, and Susan L. Scott. 2003. Patterns of Elite Faunal Utilization at Moundville, Alabama. *American Antiquity* 68(3):552–72.
- Jefferies, Richard W. 1995. *Holocene Hunter-Gatherers of the Lower Ohio River Valley*. University of Alabama Press. Tuscaloosa.
- Jefferies, Richard W., Victor D. Thompson, and George R. Milner. 2005. Archaic Hunter-Gatherer Landscape Use in West-Central Kentucky. *Journal of Field Archaeology* 30(1):3–23.
- Jeter, Marvin D. 1990. *Edward Palmer's Arkansaw Mounds*. Archaeology and Regional Studies Series. Vol 5. University of Arkansas Press. Fayetteville, Arkansas.
- Jolly, Pieter. 2002. Therianthropes in San Rock Art. *The South African Archaeological Bulletin*, vol. (57)176,: 85–103. *JSTOR*, <https://doi.org/10.2307/3888859>. Accessed 29 Apr. 2023.
- Johnson, Jay K. Saunders Joe W., Rolfe D. Mandel, C. Garth Sampson, Charles M. Allen, E. Thurman Allen, Daniel A. Bush, James K. Feathers, Kristen J Gremillion, C.T. Hallmark, H. Edwin Jackson, Recca Jones, Roger T. saucier, Gary L. Stringer, and Malcolm F. Vidrine. 2005. Watson Brake, A Middle Archaic Mound Complex In Northeast Louisiana. *American Antiquity* 70(4):631–668.
- Johnson, Gregory A. 1982. Organizational Structure and Scalar Stress. In *Theory and Explanation in Archaeology: The Southampton Conference*, edited by Colin Renfrew, M. J. Rowlands, and Barbara A. Segraves, pp. 389–421. Academic Press, New York.

Joyce, Rosemary A., and Jeanne Lopiparo. 2005. Postscript: Doing Agency in Archaeology. *Journal of Archaeological Method and Theory* 12(4):365–74. *JSTOR*,

<http://www.jstor.org/stable/20177525>. Accessed 2 Dec. 2023.

Kassabaum, Megan C. 2019. A Method for Conceptualizing and Classifying Feasting:

Interpreting Communal Consumption in the Archaeological Record. *American Antiquity* 84(4):610–31.

Kassabaum, Megan C. 2021. *A History of Platform Mound Construction*. University of Florida Press.

Kelly, Robert L. 2013. *The Foraging Spectrum: The Lifeways of Hunter-Gatherers*. Cambridge University Press, Cambridge, U.K.

Kennedy, Roger. 1992. Jefferson and the Indians . *Winterthur Portfolio*, vol. 27, no. 2/3, 1992, pp.

105–21. *JSTOR*, <http://www.jstor.org/stable/1181368>. Accessed 11 May 2025.

Kercsmar, Joshua Abram. 2016. Wolves at Heart: How Dog Evolution Shaped Whites' Perceptions of Indians in North America. *Environmental History* 21(3):516–40. *JSTOR*,

<http://www.jstor.org/stable/44132074>. Accessed 21 Jan. 2024.

Kidder, Tristram R. 2012. Poverty Point. In *The Oxford Handbook of North American Archaeology*, edited by Timothy R. Pauketat, pp. 460–470. Oxford University Press, Oxford, UK.

Kidder, Tristram R, Anthony L. Ortmann, and Lee J. Arco. 2008. Poverty Point and the Archaeology of Singularity. *The SAA Archaeological Record*. November.

Kindaichi, Kyōsuke, and Minori Yoshida. 1949. The Concepts behind the Ainu Bear Festival

(Kumamatsuri). *Southwestern Journal of Anthropology* 5(4): 345–50. *JSTOR*,

<http://www.jstor.org/stable/3628594>. Accessed 18 Feb. 2024.

- Kimura, Takeshi. 1999. Bearing the 'Bare Facts' of Ritual. A Critique of Jonathan Z. Smith's Study of the Bear Ceremony Based on a Study of the Ainu Iyomante. *Numen*, (46) 1:88–114. *JSTOR*, <http://www.jstor.org/stable/3270292>. Accessed 18 Feb. 2024.
- Knight, Chris. 1998. The Origins of Anthropomorphic Thinking. *The Journal of the Royal Anthropological Institute* 4(1):129–32.
- Klippel, Walter E., and Paul W. Parmalee. 1982. Diachronic Variation in Insectivores from Cheek Bend Cave and Environmental Change in the Midsouth. *Paleobiology* 8(4):447–58. <http://www.jstor.org/stable/2400721>.
- Koop, Ben F., Maryann Burbridge, Ashley Byun, Ute Rink, and Susan J. Crockford. 2000. Ancient DNA Evidence of a Separate Origin for North American Indigenous Dogs. In *Dogs Through Time: An Archaeological Perspective*, edited by Susan Crockford, pp. 271–285. Proceedings. BAR International Series 889
- Koster, Jeremy. 2009. Hunting Dogs in the Lowland Neotropics. *Journal of Anthropological Research* 65(4):575–610.
- Kresja, Paul P., and Michael L. Hargrave. 2006. *An Assessment of Previous Archaeological Surveys at Fort Campbell Kentucky/Tennessee*. Report Prepared for Fort Campbell, Cultural Resources Program.
- Kuchler, A.W. 1964. *Potential Natural Vegetation of the Coterminous United States*. American Geographical Society, Special Publication No. 36.
- Larivière, Serge. 2001. *Ursus Americanus*. *Mammalian Species* 647:1–11. *JSTOR*, <http://www.jstor.org/stable/3504406>. Accessed 19 Jan. 2024.
- Lazenby, Francis D. 1949. Greek and Roman Household Pets. *The Classical Journal* 44(5):299–307. *JSTOR*, <http://www.jstor.org/stable/3292469>. Accessed 19 Mar. 2023.

Lambek, Michael. 1992. Taboo as Cultural Practice Among Malagasy Speakers. *Man* 27(2):245–66.

JSTOR, <https://doi.org/10.2307/2804053>. Accessed 29 Nov. 2023.

Lee, Richard . 1979. *!Kung San. Men, Women and Work in a Foraging Society*. Cambridge University Press. Cambridge, UK.

Leechman, Douglas. 1951. Bone Grease. *American Antiquity* 16(4):355–56. JSTOR,

<https://doi.org/10.2307/276988>. Accessed 18 Feb. 2024.

LeMoine, Genevieve. 2003. Woman of the House: Gender, Architecture, and Ideology in Dorset

Prehistory. *Arctic Anthropology* 40(1):121–38. JSTOR, <http://www.jstor.org/stable/40316579>.

Accessed 3 Dec. 2023.

Lepofsky, Dana, Nicole F. Smith, Nathan Cardinal, John Harper, Mary Morris, Elroy White Gitla,

Randy Bouchard. 2015. Ancient Shellfish Mariculture on the Northwest Coast of North

America. *American Antiquity* 80(2):236–59. <http://www.jstor.org/stable/24712701>.

Lewis, H. M., Lucio Vinicius, Jancie Strods, and Ruth Mace. 2014. High Mobility Explains Demand

Sharing and Enforced Egalitarian Hunter-gatherers. *Nature Communications* 5(1) 5789.

Lewis, T.M.N. and Madeline Kneberg Lewis. 1959. The Archaic Culture in the Middle South,

American Antiquity 25(2):161–183.

Lewis, T.M.N. and Madeline Kneberg Lewis. 1961. *Eva An Archaic Site*. University of Tennessee

Press, Knoxville.

Lightfoot, Kent G., Rob Q. Cuthrell, Chuck J. Striplen, and Mark G. Hylkema. 2013. Rethinking the

Study of Landscape Management Practices Among Hunter-Gatherers in North America.

American Antiquity 78(2):285–301. <http://www.jstor.org/stable/23486319>.

Lobban, Richard A. 1994. Pigs and Their Prohibition. *International Journal of Middle East Studies*

26(1):57–75. JSTOR, <http://www.jstor.org/stable/164052>. Accessed 1 Dec. 2023.

- Lonsdale, Steven H. 1979. Attitudes towards Animals in Ancient Greece. *Greece & Rome* 26(2):146–59. *JSTOR*, <http://www.jstor.org/stable/642507>. Accessed 1 Dec. 2023.
- Lotze, Joerg-Henner, and Sydney Anderson. 1979. Procyon Lotor. *Mammalian Species* 119:1–8. *JSTOR*, <https://doi.org/10.2307/3503959>. Accessed 4 Feb. 2024.
- Mackinnon, Michael. 2010. Sick As a Dog Zooarchaeological Evidence for Pet Dog Health and Welfare in the Roman World. *World Archaeology* 42(1):290–309.
- MacNeish, J. H., and J. A. Teit. 1956. Field Notes on the Tahltan and Kaska Indians: 1912–1915. *Anthropologica* 3:39–171. *JSTOR*, <http://www.jstor.org/stable/25604386>. Accessed 20 Jan. 2024.
- Madrigal, T., Cregg, and Julie Zimmerman Holt. 2002. White-tailed Deer Meat and Marrow Return Rates and Their Application to Eastern Woodlands Archaeology. *American Antiquity* (67)4:745–759.
- Magennis Ann, L. 1977. Middle and Late Archaic Mortuary Patterning: An Example from the Western Tennessee Valley. Anthropology Department. Master Thesis. University of Tennessee, Knoxville.
- Marquardt, William H. 1986. The Development of Cultural Complexity in Southwest Florida: Elements of a Critique. *Southeastern Archaeology*, 5(1):63–70. *JSTOR*, <http://www.jstor.org/stable/40713474>. Accessed 2 Dec. 2023.
- Marquardt, William H. 2014. Tracking the Calusa: A Retrospective. *Southeastern Archaeology* 33(1):1–24.
- Marquardt, William H., and Patty Jo Watson. 2005. The Green River Shell Mound Archaic Conclusions: In *Archaeology of the Middle Green River Region Kentucky*, edited by W. H.

- Marquardt and P. J. Watson, pp. 615–647. Institute of Archaeological Paleoenvironmental Studies Monograph 5. University of Florida, Gainesville.
- Martinko, Whitney A. 2009. So Majestic a Monument of Antiquity: Landscape, Knowledge, and Authority in the Early National West, *Buildings & Landscapes: Journal of the Vernacular Architecture Forum* 16(1):29–61. <http://www.jstor.org/stable/27804895>. Accessed 27 Nov. 2023.
- Marshall, Fiona, and Lior Weissbrod. 2011. Domestication Processes and Morphological Change: Through the Lens of the Donkey and African Pastoralism. *Current Anthropology* 52(S4):S397–413. *JSTOR*, <https://doi.org/10.1086/658389>. Accessed 4 May 2024.
- Mazzorin de Grossi and C. Minniti. 2006. Dog sacrifice in the Ancient World: a ritual passage? In *Dogs and People in Social, Working, Economic or Symbolic Interaction*, 9th ICAZ Conference, Durham, 2002: 62–66. Oxbow Books.
- Mazzorin, Jacopo De Grossi, Ivana Fiore, Claudia Minniti, and Antonio Tagliacozzo. 2023. Faithful unto Death.: Burial, Legends, and Heroism of the Dog from Antiquity to the Contemporary Age. In *Dogs, Past and Present: An Interdisciplinary Perspective*, edited by Ivana Fiore and Francesca Lugli, pp. 177–82. Archaeopress, Oxford, England.
- Meacham, Sarah Hand. 2011. Pets, Status, and Slavery in the Late-Eighteenth-Century Chesapeake. *The Journal of Southern History* 77(3):521–54. *JSTOR*, <http://www.jstor.org/stable/41306281>. Accessed 30 May 2024.
- McNicholas, June, Andrew Gilbey, Ann Rennie, Sam Ahmedzai, Jo-Ann Dono, and Elizabeth Ormerod. 2005. Pet Ownership And Human Health: A Brief Review of Evidence and Issues. *BMJ: British Medical Journal* 331(7527):1252–54. <http://www.jstor.org/stable/25455496>.

- Miller, Shane D. 2014. *From Colonization to Domestication: A Historical Ecological Analysis of Paleoindian and Archaic Subsistence and Landscape Use in Central Tennessee*. Anthropology Department. PhD dissertation. University of Arizona, Tucson.
- Miller, Shane, D., Thaddeus G. Bissett, Tanya Peres, David G. Anderson, Stephen B. Carmody, and Aaron Deter-Wolf. 2019. Geoarchaeology and Bayesian Statistical Modeling of Radiocarbon Dates from 40CH171, A Multicomponent Shell-Bearing Site in Cheatham County, Tennessee. In *The Cumberland River Archaic of Middle Tennessee*. Edited by Tanya M. Peres and Aaron Deter-Wolf, pp.76–90. University of Florida Press, Gainesville.
- Mithen, Stephen, and Pascal Boyer. 1996. Anthropomorphism and the Evolution of Cognition. *The Journal of the Royal Anthropological Institute* 2(4):17–21. *JSTOR*, <http://www.jstor.org/stable/3034305>. Accessed 6 May 2023.
- Moore, Clarence B. 1929. Philadelphia, to George Heye. LS. I May 1929. National Museum of the American Indian Archive. Suitland, MD. Box OC 121, F-LO.
- Morey Darcy, F. 1990. Cranial Allometry and the Evolution of the Domestic Dog. Anthropology Department. PhD Dissertation, University of Tennessee, Knoxville.
- Morey, Darcy F., and Michael D. Wiant. 1992. Early Holocene Domestic Dog Burials From the North American Midwest. *Current Anthropology*. 33(2):224–229.
- Morin, Jesse. 2010. Ritual Architecture in Prehistoric Complex Hunter-Gatherer Communities: A Potential Example From Keatley Creek, On The Canadian Plateau. *American Antiquity*. 75(3): 599-625.
- Morris, James. 2014. Animal “Ritual Killing” from Remains to Meanings. In *The Ritual Killing and Burial of Animals*, edited by Aleksander Pluskowski, pp:8–21. Oxbow Books, Oxford England.

- Morse, Dan F., editor. 1997. *Sloan: A Paleoindian Dalton Cemetery in Arkansas*. Smithsonian Institution, Washington, D.C.
- Moore, Christopher and Victoria Dekle. 2010. Hickory Nuts, Bulk Processing, and the Advent of Early Agricultural Economies in Eastern North America. *World Archaeology* 42(4):595–608.
- Morgan, Lewis Henry. 1877. *Ancient Society Ancient Society Or Researches in the Lines of Human Progress from Savagery through Barbarism to Civilization*. Charles H. Kerr and Company, Chicago.
- Morton, Samuel. 1839 *Crania America*. Simpson, Marshall, and Company. London.
- Mullin, Molly H. 1999. Mirrors and Windows: Sociocultural Studies of Human-Animal Relationships. *Annual Review of Anthropology* 28:201–24.
- Muravchik, Joshua. 2002. Marxism. *Foreign Policy*, (133): pp. 36–38. *JSTOR*, <https://doi.org/10.2307/3183551>. Accessed 1 Dec. 2023.
- Musil, Rudolf. 2000. Domestication of wolves in Central European Magdalenian sites. In *Dogs Through Time: An Archaeological Perspective*, edited by Susan Janet Crockford, pp. 21 –28. Proceedings of the 1st ICAZ Symposium on the History of the Domestic Dog. Eight Congress of the International Council for Archaeozoology. BAR International Series 889, Archaeopress, Oxford, England.
- Nadasdy, Paul. 2007. The Gift in the Animal: The Ontology of Hunting and Human-Animal Sociality. *American Ethnologist* 34(1):5–43.
- Norton, Marcy. 2024. *The Tame and the Wild: People and Animals after 1492*. Harvard University Press, Boston, MA.
- Noss and Hewlett. 2001. The Contexts of Female Hunting in Central Africa. *American Anthropologists* 103(4):1024–1040.

- Oma, Kristin Armstrong. 2010. Between Trust and Domination: Social Contracts between Humans and Animals. *World Archaeology* 42(2):175–187.
- Ortmann A.L. and Tristram Kidder. 2013. Building Mound A at Poverty Point, Louisiana: Monumental Architecture, Ritual, Practice, and Implications for Hunter-gatherer Complexity. *Geoarchaeology*. 28:66–86.
- Osborne, Douglas. 1942. The Big Sandy Site, Henry County, Tennessee. Master's Thesis, University of New Mexico, Albuquerque.
- Owoc, Mary Ann. 2005. From the Ground up: Agency, Practice, and Community in the Southwestern British Bronze Age. *Journal of Archaeological Method and Theory* 12(4):257–281.
- Pang, J. F., et al. 2009. mtDNA Data Indicate a Single Origin for Dogs South of Yangtze River, Less than 16,300 Years Ago, from Numerous Wolves. *Molecular Biological Evolution* 26(12): 2849–2864.
- Parkington, John. 2003. Eland and Therianthropes in Southern Rock Art: When is a Person An Animal? *The African Archaeological Review*. 20(3):135–147.
- Patterson, Thomas C. 1989. Post-Structuralism, Post-Modernism: Implications for Historians. *Social History*, 14 (1): 83–88. Electronic document. <http://www.jstor.org/stable/4285738>. Accessed 29 Nov. 2024.
- Pauketat, T. R. 2001. Practice and History in Archaeology: An Emerging Paradigm. *Anthropological Theory* 1:73–98.
- Pauketat, T. R. 2007. *Chiefdoms and Other Archaeological Delusions*. Rowman & Littlefield Publishers, Inc. New York.

- Peres, Tanya M., Aaron Deter-Wolf, Joey Keasler, and Shannon Chappell Hodges. 2016. Faunal Remains from an Archaic Period Cave in the Southeastern United States. *Journal of Archaeological Science Reports* 8:187–199.
- Peres, Tanya M. 2023. Garden Hunting and Food Sharing during the Mississippian Period in the American South. *Food Provisioning in Complex Societies: Zooarchaeological Perspectives*, edited by Levent Atici and Benjamin S. Arbuckle, pp. 171–92. University Press of Colorado Boulder. *JSTOR*, <http://www.jstor.org/stable/jj.285047.13>. Accessed 13 Feb. 2024
- Peres, Tanya M., Aaron Deter-Wolf, Kelly L. Ledford, Joey Keasler, Ryan W. Robinson, and Andrew R. Wyatt. 2019. Archaeological Investigations at 40DV7. In *The Cumberland River Archaic of Middle Tennessee*. Edited by Tanya M. Peres and Aaron Deter-Wolf pp. 56–74. University of Florida Press, Gainesville.
- Perkins, Dexter, Jr. and Patricia. Daly. 1968. A Hunter's Village in Neolithic Turkey. *Scientific American* 219(5):96–106.
- Perri, A., Widga, C., Lawler, D., Martin, T., Loebel, T., Farnsworth, K., Kohn, L., & Buenger. 2019. New Evidence of the Earliest Domestic Dogs in the Americas. *American Antiquity* 84(1):68–87. <https://www.jstor.org/stable/26639591>.
- Perri, Angela, R. Tatiana R., Laurent A.F. Frantz, and Kelsey E. Wit. 2021. Dog Domestication and the Dual Dispersal of People and Dogs into the Americas. *Proceedings of the National Academy of Science of the United States (PNAS)* 118(6):1–8.
- Pearson, Chris. 2013. Dogs, History, and Agency. *History and Theory* 52(4):128–45.
- Peterson, Roger T. 1980. *A Field Guide to the Birds of Eastern and Central North America*. Houghton Mifflin, Boston.

- Piper, Philip J. 2017. The Origins and Arrival of the Earliest Domestic Animals in Mainland and Island Southeast Asia: A Developing Story of Complexity. *New Perspectives in Southeast Asian and Pacific Prehistory*, edited by Philip J. Piper, pp. 251–274. ANU Press. *JSTOR*, <http://www.jstor.org/stable/j.ctt1pwtd26.22>. Accessed 28 Apr. 2024.
- Pluskowski, Aleksander. 2014. Introduction: The Ritual Killing and Burial of Animals in the Past. In *The Ritual Killing and Burial of Animals. European Perspectives*, edited by Aleksander Pluskowski. Oxbow Books, Oxford. U.K.
- Prentiss, William C., Michael Lenhart, Thomas A. Foor, Nathan B. Goode, and Trinty Schlegel. 2003. Calibrated Radiocarbon Dating at Keatley Creek: The Chronology of Occupation at a Complex Hunter-Gatherer Village. *American Antiquity*. 68(4):719–35.
- Prentiss, Anna Marie, Matthew J. Walsh, Thomas A. Foor, Haley O'Brien, and Hannah S. Call. 2021. The Record of Dogs in Traditional Villages of Mid-Fraser Canyon, British Columbia: Ethnological and Archaeological Evidence. *Human Ecology*. 49(6): 735–753.
- Price, Edward O. 1984. Behavioral Aspects of Animal Domestication. *The Quarterly Review of Biology* 59(1):1–32. *JSTOR*, <http://www.jstor.org/stable/2827868>. Accessed 27 May 2024.
- Pritchard, Erin E. editor. 2009. *TVA Archaeology: Seventy-Five Years of Prehistoric Site Research*, University of Tennessee Press, Knoxville, Tennessee.
- Purdue, James R., Bonnie W. Styles, and Mary Carol Masulis. 1989. Faunal Remains and White-Tailed Deer Exploitation From a Late Woodland Upland Encampment: The Boschert Site (23sc609), St. Charles County, Missouri. *Midcontinental Journal of Archaeology* 14(2):146–63. <http://www.jstor.org/stable/20708287>.
- Qu. Feng. 2017. Ceremonialism in Model: Redefining Eskimo. In Shaman and Mythology Archaic of Ecstasy and Current Techniques of Research. In *Honor Mihaly Hoppal*,

- celebrating his 75th Birthday*. Hungarian Association for the Academic Study of Religions. Budapest.
- Randall, Asa. 2011. Remapping the Archaic Social Histories along the St. Johns River in Florida. In *Hunter-Gatherer Archaeology As Historical Process*, edited by Kenneth E. Sassaman and Donald H. Holly Jr, pp. 120–142. The University of Arizona Press, Tucson.
- Randall, Asa. 2013. The Chronology and History of Mount Taylor Period (ca. 7400–4600 Cal B.P.) Shell Sites on the Middle St. Johns River Valley, Florida. *Southeastern Archaeology* 32(2) 193–217.
- Randall, Asa. 2015. *Constructing Histories: Archaic Freshwater Shell Mounds and Social Landscapes of the St. Johns River, Florida*. Florida Museum of Natural History Bulletin Series. University of Florida Press, Gainesville.
- Randall, Asa. 2015 How Jefferies Wyman put Florida Shell Mounds on the Map (1860–1875). *Bulletin of the History of Archaeology* 25(3):1–12.
- Recht, Laerke. 2024. Animals, Violence, and Inequality in Ancient Mesopotamia. *Violence and Inequality: An Archaeological History*, edited by Thomas P. Leppard and Sarah C. Murray, pp. 162–92. University Press of Colorado. Boulder. *JSTOR*, <http://www.jstor.org/stable/jj.8816157.12>. Accessed 7 Sept. 2024.
- Reed, Annette Yoshiko. 2014. From Sacrifice to the Slaughterhouse: Ancient and Modern Approaches to Meat, Animals, and Civilization. *Method & Theory in the Study of Religion* 26(2):111–58. *JSTOR*, <http://www.jstor.org/stable/43907142>. Accessed 17 Jan. 2024.
- Reitz, Elizabeth J. 1992. The Spanish Colonial Experience and Domestic Animals. *Historical Archaeology* (26)1:84–91. *JSTOR*, <http://www.jstor.org/stable/25616145>. Accessed 27 Apr. 2024.

- Reitz, Elizabeth and Elizabeth S. Wing. 1999. *Zooarchaeology*. Cambridge University Press. Cambridge, United Kingdom.
- Reilly, Stephen Edward. 1981. A Marriage of Expedience: The Calusa Indians and Their Relations with Pedro Menéndez De Avilés in Southwest Florida, 1566–1569. *The Florida Historical Quarterly* (59) 4:395–421. *JSTOR*, <http://www.jstor.org/stable/30146125>. Accessed 2 Dec. 2023.
- Richer, Zach. 2015. Toward a Social Topography: Status as a Spatial Practice. *Sociological Theory* 33(4):347–68. *JSTOR*, <http://www.jstor.org/stable/44114451>. Accessed 13 June 2024.
- Riches, D. 1984. Hunting, Herding, and Potlatching: Towards a Sociological Account of Prestige. *Man* 19:234–251.
- Roberts, Strother E. 2017. The Dog Days of Winter: Indigenous Dogs, Indian Hunters, and Wintertime Subsistence in the Northeast. *Northeastern Naturalist* 24:H1–21.
- Rosenblum, Jordan D. 2010. Why Do You Refuse to Eat Pork?' Jews, Food, and Identity in Roman Palestine. *The Jewish Quarterly Review* 100(1)L:5–110. *JSTOR*, <http://www.jstor.org/stable/40586745>. Accessed 19 May 2024.
- Rowley-Conwy, Peter A. 2001. Time, Change and the Archaeology of Hunter-Gatherers: How Original is the 'Original Affluent Society'? In *Hunter-Gatherers: An Interdisciplinary Perspective*, edited by Catherine Panter-Brick, Robert H. Layton, and Peter Rowley-Conwy, pp. 39–72. Cambridge University Press, Cambridge, England.
- Russell, Nerissa. 2012. *Social Zooarchaeology Humans and Animals in Prehistory*. Cambridge University Press.
- Russell, Nerissa. 2016. Neolithic Human Animal Relations. *Groniek* 206/207:21–32.

- Russell, Nerissa. 2022. Wild Meets Domestic in the Near Eastern Neolithic. *Animals*, 12(18) 2335.
<https://doi.org/10.3390/ANI12182335>
- Russo, Michael. 1994. Why We Don't Believe in Archaic Ceremonial Mounds and Why We Should: The Case from Florida. *Southeastern Archaeology* 13(2):93–109.
- Russo, Michael. 2004. Measuring Shell Rings for Social Inequality. In *Signs of Power: The Rise of Cultural Complexity in the Southeast*, edited by Jon L. Gibson and Philip J. Carr, pp. 26–70. University of Alabama Press, Tuscaloosa.
- Rulison, E. I., , L. Lusielli, and R.L. Burke. 2012. Relative Impacts of Habitat and Geography on Raccoon Diets. *The American Midland Naturalist* 168(2):231–46.
<http://www.jstor.org/stable/23269816>.
- Ruusila, Vesa, and Mauri Pesonen. 2004. Interspecific Cooperation in Human (Homo Sapiens) Hunting: The Benefits of a Barking Dog (Canis Familiaris). *Annales Zoologici Fennici* 41(4):545–49. <http://www.jstor.org/stable/23735938>.
- Sahlins, Marshall D. 1963. Poor Man, Rich Man, Big-Man, Chief: Political Types in Melanesia and Polynesia. *Comparative Studies in Society and History* 5:285–303.
- Sahlins, Marshall D. 1985. *Islands of History*. The University of Chicago Press. Chicago.
- Sayre, Gordon M. 1998. The Mound Builders and the Imagination of American Antiquity in Jefferson, Bartram, and Chateaubriand. *Early American Literature* 33(3):225–49. *JSTOR*, <http://www.jstor.org/stable/25057127>. Accessed 30 Nov. 2023.
- Sassaman, Kenneth E. 2001. Communities of Practice In The Early Pottery Traditions of The American Southeast *Journal of Archaeological Research* 57(4):407–425.
- Sassaman, Kenneth E. 2004. Complex Hunter-Gatherers in Evolution and History: A North American Perspective. *Journal of Archaeological Research* 12(3):227–80.

- Sassaman, Kenneth E. 2010. *The Eastern Archaic Historized*. AltaMira. Lanahan, Maryland.
- Sassaman, Kenneth E. 2011. History and Alterity in the Eastern Archaic. In *Hunter-Gatherer Archaeology As Historical Process*, edited by Kenneth E. Sassaman and Donald H. Holly Jr., pp:187–208. The University of Arizona Press, Tucson.
- Sassaman, Kenneth, and Asa Randall. 2010. The Cultural History of Bannerstones in the Savannah River Valley. *Southeastern Archaeology* 26:196–211.
- Sassaman, Kenneth, and Asa Randall. 2010. *Emergent Complexities during the Archaic Period in Northeast Florida*. In *Ancient Complexities, New Perspectives in Pre-Columbian North America*, edited by Susan Alt, pp. 8–31. University of Utah Press, Salt Lake City.
- Sassaman, Kenneth and Asa Randall. 2012. Shell Mounds of the Middle St. Johns Basin, Northeast Basin. In *Early New World Monumentality* edited by Richard L. Burger and Robert M. Rosenwig, pp. 53–77. University Press of Florida. Gainesville.
- Sassaman, Kenneth E., and Donald H. Holly Jr. 2011. Transformative Hunter-Gatherer Archaeology in North America. In *Hunter-Gatherer Archaeology As Historical Process*, edited by Kenneth E. Sassaman and Donald H. Holly Jr., pp:1–13. The University of Arizona Press, Tucson.
- Saunders, Joe W., Rolfe D. Mandel, C. Garth Sampson, Charles M. Allen, E. Thurman Allen, Daniel A. Bush, James K. Feathers. 2005. Watson Brake, a Middle Archaic Mound Complex in Northeast Louisiana. *American Antiquity* 70(4):631–68.
- Scheick, Brian K., and Walter McCown. 2014 Geographic Distribution of American Black Bears in North America. *Ursus* 25(1):24–33. *JSTOR*, <http://www.jstor.org/stable/24643793>. Accessed 17 Jan. 2024.
- Schwartz, Marion. 1997 *A History of Dogs in the Early Americas*. Yale University Press. New Haven
- Service, Elman. 1962 *Primitive Social Organization*. Random House, New York.

- Shaw, Gary D. 2013. A Way With Animals. *History and Theory* 52(4):1–12. *JSTOR*, <http://www.jstor.org/stable/24542955>. Accessed 27 Apr. 2024.
- Shanklin, Eugenia. 1985. Sustenance and Symbol: Anthropological Studies of Domesticated Animals. *Annual Review of Anthropology*, 14:375–403. *JSTOR*, <http://www.jstor.org/stable/2155601>. Accessed 1 Dec. 2023.
- Shannon, Laura M., Ryan H. Boyko, Marta Castelhana, Elizabeth Corey, Jessica J. Hayward, Corin McLean, Michelle E. White. 2015. Genetic Structure in Village Dogs Reveals a Central Asian Domestication Origin. *Proceedings of the National Academy of Sciences of the United States of America* 112(44):13639–44. <https://www.jstor.org/stable/26465666>.
- Shipman, Pat. 2015. *The Invaders: How Humans and Their Dogs Drove Neanderthals to Extinction*. Harvard University Press. Cambridge.
- Simek, Stephanie L., Jerrold L. Belant, Brad W. Young, Catherine Shropshire, and Bruce D. Leopold. 2012. History and Status of the American Black Bear in Mississippi. *Ursus* 23(2):159–67. <http://www.jstor.org/stable/41933223>.
- Simmel, George. 1896. Superiority and Subordination as Subject Matter of Sociology. *American Journal of Sociology*, vol. 2, no. 2, pp. 167–89. *JSTOR* <http://www.jstor.org/stable/2761662>. Accessed 11 May 2025
- Simoons, Frederick, J. 1978. Traditional Use and Avoidance of Foods of Animal Origin: A Cultural Historical View. *BioScience* 28(3):178–184.
- Skaanes, Thea. 2015. Notes on Hadza Cosmology. *Hunter-gatherer Research* 1(2): 247–267.
- Snyder, Lynn, M. 1991. Barking Mutton: Ethnohistoric and Ethnographic, Archaeological and Nutritional Evidence Pertaining to the Dog as Native American Food Source on the Plains. In *Beamers, Bobwhites, and Blue-Points Tributes to the Career of Paul W. Parmalee*, edited by

- James R. Purdue, Walter E. Klippel, and Bonnie W. Styles, pp. 359–378. Illinois State Museum Scientific Papers, Vol. XXIII, and the University of Tennessee, Department of Anthropology Report of Investigations No. 52.
- Spielman Katherine A. 1989. Dietary Restrictions on Hunter-gatherer Women and the Implication for Fertility and Infant Mortality. *Human Ecology* 17(3):321–345.
- Speth, John J. 1990. Seasonality, Resource Stress, and Food Sharing in So-Called “Egalitarian” Foraging Societies. *Journal of Anthropological Archaeology* 9:148–188.
- Squier E.G., and E.H. Davis. 1847. *Ancient Monuments of the Mississippi Valley*. Smithsonian Press, Washington D.C.
- Spikins, Penny. 2022. *Hidden Depths: The Origins of Human Connection*. White Rose University Press. Leeds.
- Stahl, Peter W. 2013. Early Dogs and Endemic South American Canids of the Spanish Main. *Journal of Anthropological Research* 69(4):515–33. *JSTOR*, <http://www.jstor.org/stable/24393937>. Accessed 5 May 2024.
- Steward, J. 1955. *Theory of Culture Change*. Urbana: University of Illinois Press.
- Stewart, Francis L., and William D. Finlayson. 2000. Subsistence at the Irwin-Johnson Village and the Question of Deer Tending by the Neutrals. *Canadian Journal of Archaeology* (24):17–40.
- Struever, Stuart, and Felicia Antonelli Holton. 2000. *Koster: Americans in Search of Their Prehistoric Past*. Waveland Press, Inc., Frederick, Maryland.
- Sykes, Naomi. 2014. The Rhetoric of Meat Apportionment: Evidence for Exclusion, Inclusion, and Social Position in Medieval England. *Animals and Inequality in the Ancient World*, edited by Benjamin S. Arbuckle and Sue Ann McCarty, pp. 353–74. University Press of Colorado,

- 2014, Electronic Document. <http://www.jstor.org/stable/j.ctt128809k.23>. Accessed 1 Dec. 2024.
- Terbish, Baasanjav. 2015. The Mongolian Dog as the Intimate :Other. *Inner Asia* 17(1):141–159.
- Testart, Alain. 1987. Game Sharing Systems and Kinship Systems Among Hunter-Gatherers. *Man* 22(2):287–304. *JSTOR*, <https://doi.org/10.2307/2802866>. Accessed 1 Dec. 2023.
- Tsékénis, Emile. 2017. Personhood, Collectives, and the Human-Animal Distinction: The Cases of the Cameroon Grassfields and Madagascar. *Anthropologica* 59(1):130–44.
- Thomas, Cyrus. 1894. Report on the mound explorations of the Bureau of Ethnology. In *Twelfth Annual Report of the Bureau of Ethnology, 1890–1891*, 3–730. Bureau of American Ethnology.
- Thompson, Victor D. 2007. Articulating Activity Area and Formation Processes at the Sapelo Island Shell Ring Complex. *Southeastern Archaeology* 26(1):91–107.
- Thompson, Victor D., and C. Fred, T. Andrus. 2011. Evaluating Mobility, Monumentality, and Feasting at the Sapelo Island Shell Ring Complex. *American Antiquity* 76(2):315–343.
- Thompson, Victor D., and John E. Worth. 2011. Dwellers by the Sea: Native American Adaptations along the Southern Coasts of Eastern North America. *Journal of Archaeological Research* 19(1):51–101. *JSTOR*, <http://www.jstor.org/stable/41053270>. Accessed 2 Dec. 2023.
- Trigger, Bruce G. 1989. *A History of Archaeological Thought*. Cambridge University Press. Cambridge.
- Tuross, Noreen, Marilyn L. Fogel, Lee Newsom, and Glen H. Doran. 1994. Subsistence in the Florida Archaic: The Stable-Isotope and Archaeobotanical Evidence from the Windover Site. *American Antiquity*, (59) 2: 288–303.

- Uhle, Max. 1907. *The Emeryville Shell Mound*. Berkely. The University Press. The Emeryville shellmound : Uhle, Max, 1856-1944 Free Download, Borrow, and Streaming Internet Archive
- Van Valkenburgh, B., Matthew W. Hayward, William J. Ripple, Carlo Meloro, and V. Louise Roth. 2016. The Impact of Large Terrestrial Carnivores on Pleistocene Ecosystems. *Proceedings of the National Academy of Sciences of the United States of America* 113(4):862–67.
<https://www.jstor.org/stable/26467501>.
- Van Doren, Mark. 1928. *The Travels of William Bartram*. General Publishing Company. Canada
- Van der Veen, Marijke. 2003. When is Food a Luxury? *World Archaeology* 34(3):405–427.
- Van Pool, Christine S., and Todd L. Van Pool. 1999. The Scientific Nature of Post processualism. *American Antiquity* 64(1):33–53. *JSTOR*, <https://doi.org/10.2307/2694344>. Accessed 20 May 2023.
- Watanabe, Hitoshi. 1968. Subsistence and Ecology of Northern Food Gatherers With Special Reference to the Ainu. In *Man the Hunter*, edited by R. B. Lee and I. DeVore, pp.69–77. Aldine, Chicago.
- Walden, Howard T. 1964. *Familiar Freshwater Fishes of America*. Harper and Row, New York.
- Walker, Danny. 1980 APPENDIX I: The Vore Site Local Fauna. *Plains Anthropologist*. 25 (88):154–169.
- Walker, Renee B. 1998. Late Paleoindian through Middle Archaic Faunal Evidence from Dust Cave, Alabama. Department of Anthropology. PhD Dissertation, University of Tennessee, Knoxville. Late Paleoindian through Middle Archaic Faunal Evidence from Dust Cave, Alabama (tennessee.edu)

- Walker, Renee B., Darcy F. Morey, and John H. Relethford. 2005. Early and Mid-Holocene Dogs in Southeastern North America: Examples from Dust Cave. *Southeastern Archaeology* 24(1):83–92.
- Waguespack, Nicole M. 2005. The Organization of Male and Female Labor in Foraging Societies: Implications for Early Paleoindian Archaeology. *American Anthropologist* 107(4):666–76. *JSTOR*, <http://www.jstor.org/stable/3567384>. Accessed 13 May 2023.
- Walthall, John A. 1998. Rockshelters and Hunter-Gatherer Adaptation to the Pleistocene/Holocene Transition. *American Antiquity* 63(2):223–38.
- Walthall, John A., and Brad Koldehoff. 1998. Hunter–Gatherer Interaction and Alliance Formation: Dalton and the Cult of the Long Blade. *Plains Anthropologist* 43:257–273.
- Warren, Diane, M. 2000. Palaeopathology of Archaic Period Dogs From The North American Southeast. In *Dogs Through Time: An Archaeological Perspective*, edited by Susan Janet Crockford, pp. 105–128. Proceedings of the 1st ICAZ Symposium on the History of the Domestic Dog. Eight Congress of the International Council for Archaeozoology. BAR International Series 889, Archaeopress, Oxford, England.
- Webb, William S.. 1946 (reprinted 1974). *Indian Knoll*. University of Tennessee Press, Knoxville.
- Weitzel, Eric M. 2019. Declining Foraging Efficiency in the Middle Tennessee River Valley Prior to Initial Domestication. *American Antiquity* 84(2):191–214.
- Weitzenfeld, Adam, and Melanie Joy. 2014. An Overview of Anthropocentrism, Humanism, and Speciesism in Critical Animal Theory. *Counterpoints* 448:3–27.
- Widmer, R. J. 1983. The Evolution of the Calusa: A Non- Agricultural Chiefdom on the Southwest Florida Coast. Ph.D. dissertation, Department of Anthropology, Pennsylvania State University, University Park.

- Widmer, R.J. 2004. Explaining Sociopolitical Complexity in the Foraging Adaptations of the Southeastern United States: The Role of Demography, Kinship, and Ecology in Sociocultural Evolution. In *Signs of Power: The Rise of Cultural Complexity in the Southeast*, edited by Jon L. Gibson and Phillip J. Carr, pp.234–543. University of Alabama Press, Tuscaloosa..
- Wiessner, Polly. 2001. Of Feasting And Value. In *Feasts: Archaeological and Ethnographic Perspectives in Food, Politics and Power*, edited Michael Dietler and Brian Hayden, pp. 115–143. University of Alabama Press, Tuscaloosa.
- Williams, James Homer. 1995. Great Doggs and Mischievous Cattle: Domesticated Animals and Indian-European Relations in New Netherland and New York. *New York History* 76(3):245–64. *JSTOR*, <http://www.jstor.org/stable/23181991>. Accessed 4 May 2024.
- White, Andrew A. 2013. Subsistence Economics, Family Size, and the Emergence of Social Complexity in Hunter-Gatherer Systems in Eastern North America. *Journal of Anthropological Archaeology* 32(1):122–163.
- White, Leslie. 1959. *The Evolution of Culture*. McGraw-Hill, New York.
- Whitney, Leon F. 1931. The Raccoon and Its Hunting. *Journal of Mammalogy*,12(1): 29–38. Electronic document <https://doi.org/10.2307/1373801>. Accessed 4 Feb. 2024.
- Winters, Howard, D. 1974. Introduction to the New Edition In *Indian Knoll*. Pp. vi-xxvii. The University of Tennessee Press. Knoxville.
- Woodburn, James. 1968. An Introduction to Hadza Ecology. In *Man the Hunter*, edited by R.B. Lee and I. Devore, pp. 49–55. Chicago: Aldine.
- Woodburn, James. 1982. Egalitarian Societies. *Man* 17 (3): 431–451.

- Wolverton, Steve, Lisa Nagaoka, Pinliang Dong, and James H. Kennedy. 2012. On Behavioral Depression in White-Tailed Deer *Journal of Archaeological Method and Theory* 19(3):462–89.
- Worthington, Brian. 2008. An Osteometric Analysis of Southeastern Prehistoric Dogs. Master Thesis, Florida State University, Tallahassee.
- Wyman, Jefferies. 1875. *Fresh Water Shell Mounds Of the St. John's River*. Salem Peabody Academy of Science.
- Yole II, R. M. and M. G. Pavesic. 2000 Early Archaic domestic dogs from Western Idaho USA, edited by Susan Janet Crockford, pp. 93–104. Proceedings of the 1st ICAZ Symposium on the History of the Domestic Dog. Eight Congress of the International Council for Archaeozoology. BAR International Series 889, Archaeopress, Oxford, England.
- Zeder, Melinda A. 2012. The Domestication of Animals. *Journal of Anthropological Research* 68(2):161–90.
- Zuppi, Andrea. 2022 Growing, Grown, Gone. The Ephemeral Status of Pets among the Madiha (Kulina) of the Peruvian Amazon. *Journal de La Société Des Américanistes* 108 (2):9–38.

APPENDIX I

Summary of Native American Consultation and Example of Email Correspondence

Tribal Consultation

This dissertation included consultation with the University of Tennessee and the Coushatta Tribe of Louisiana; Eastern Band of Cherokee Indians; The Chickasaw Nation; The Muscogee (Creek) Nation; The Osage Nation; The Seminole Nation of Oklahoma; Thlopthlocco Tribal Town; and the United Keetoowah Band of Cherokee Indians. The tribal coordination began in February 2022. The PhD proposal was mailed to each tribe asking them if they could make comments or suggestions concerning the proposal and the project.

Representatives from two Native American Nations responded to the consultation email, the Chickasaw and the Eastern Cherokee Nation.

Subsequent consultation included a series of meetings where the content of the proposal was discussed. The Chickasaw hold both human and dog burials as sacred components of their belief system and stress cooperation between their community and any research involving these sacred components. The author consulted with the University of Tennessee and the Chickasaw Nation throughout the writing of the dissertation. The PhD proposal was mailed again in July 2024 to each tribe (excluding the Chickasaw and the Cherokee) giving each tribe another opportunity to review the proposal and to request the opportunity to review dissertation chapters.

Dr. Andrea Hunter of the Osage Nation was the only person to respond to the email. Dr. Hunter agreed to review chapters of the dissertation.

On January 16th, 2025, the draft dissertation manuscript was sent to Deanna Byrd of the Chickasaw Nation and to Dr. Andrea Hunter of the Osage Nation. An email was also sent to Beau Carroll of the Eastern Band of Cherokee.

From: [Emmett Brown](#)
To: [Emmett Brown](#)
Subject: Fw: University of Tennessee PhD Project
Date: Wednesday, May 4, 2022 3:39:28 PM
Attachments: [EBrown_Current Proposal.docx](#)

****External Sender****

Subject: Invitation to Comment-PhD Proposal and Dissertation, University of Tennessee

Introduction

This letter represents an invitation to review and comment on my PhD proposal entitled *Social Change During the Middle Archaic Period -A View From the Shell Mound*. My research will review social changes through the Middle and Late Archaic periods in the Mid-South and Tennessee River Valley. My proposal is attached for your review. I respectfully ask that if you have any comments to the proposal, please respond within 30 days. If I have not heard from you within the 30 day period, I will email you a friendly reminder to review and comment.

The Project

The PhD research will examine Middle to Late Archaic shell mounds in the Tennessee River Valley to determine if these cultural features are evidence for social changes through time. The research will bring together many lines of evidence including changes in the relationships between humans and animals. The relationships between animals and Native American societies were shaped by the social, economic, and political ideologies of their human communities. Materials from both cave shelters and shell mounds indicate that changes in the human-domesticated animal relationship paralleled changes in the human-wild animal relationship. As a result, changes in these relationships through time can be evidence for social organization, identity, and ritual. This dissertation will analyze the *longue durée* patterning of the human-animal relationship in the Tennessee River Valley during the Middle Archaic period.

Scope of Work

The PhD research will examine published site reports, published articles, site location data on file at the respective State Preservation Offices (SHPOs), unpublished notes and information universities and museums, and any information provided by Native American tribes. Destructive analysis will not be conducted as part of this project.

In an effort to minimize any mis-communication during the dissertation process, draft copies of dissertation chapters can be made available for your review if requested. Please make the request to review draft dissertation chapters with your initial response for consultation.

APPENDIX II

NISP Used To Determine ABGs In The Study

Animal Bones Used To Determine White Tailed Deer Fore Carcass Parts Stratum I and Stratum II at the Eva Site (Lewis and Lewis 1961).

Stratum I	Stratum I	Stratum II	Total Stratum I and II
Deer	NISP	NISP	
Calcaneus	95	93	188
Humerus	176	131	307
Radius	144	74	218
Scapula	264	118	382
Total	679	416	1095

White Tailed Deer Used to Determine the Hind Carcass Parts Stratum I and Stratum II at the Eva Site (Lewis and Lewis II).

Stratum I	Stratum I	Stratum II	Total Stratum I and II
Deer	NISP	NISP	
Astragalus	116	62	178
Femur	60	35	95
Tibia	168	109	277
Pelvis	265	146	411
Total	609	352	961

Small Mammal Bones Used To Determine the Disarticulated Small Mammal ABG at the Big Sandy Site, Stratum I.

	Raccoon	Opossum	Beaver	Muskrat	Fox	Groundhog
Astragalus	0	0				
Calcaneus	0	0				
Femur	1	0	2			
Humerus	4	1	6		1	1
Mandible	23	9	10	1	5	
Maxilla	1	0	1			
Pelvis	3	0				
Phalange	0	0				
Penis	1	1				
Radius	0	0				
Rib	0	0				
Ulna	7	1			2	
Skull	0	0				
Scapula	0	0				
Tibia	0	0				
Vertebrae	4	0				
Teeth						
Total	44	12	19	1	8	1

Small Mammal Bones Used To Determine the Disarticulated Small Mammal ABG at the Big Sandy Site, Stratum II.

	Raccoon	Opossum	Beaver	Otter	Fox	Wildcat
Astragalus	0	0				
Calcaneus	0	0			1	
Femur	0	0	3			1
Humerus	3	1	3	1		
Mandible	7	5	2		6	
Maxilla	3	0				
Pelvis	0	0				1
Phalange	0	0				
Penis	2	0				
Radius	0	0				
Rib	0	0				
Ulna	0	0				
Skull	0	0				
Scapula	0	0				
Tibia	0	0				
Vertebrae	0	0				
Total	15	6	8	1	7	2

Animal Bones Used to Determine the NISP and Disarticulated Large ABGs for the Indian Knoll Site .

Deer	NISP	MNI	Bear	NISP	MNI
Antler	698	N/A	0		N/A
Calcaneus	2619	N/A			
Astragalus	3101	N/A			N/A
Femur (Right)	275	137			N/A
Femur (Left)	276	138			N/A
Humerus (Right)	917	458			N/A
Humerus (Left)	1122	561			N/A
Maxilla	351	N/A			
Pelvis	568	N/A	Pelvis	1	1
1 st Phalange	383	49			N/A
2 nd Phalange	39	9			N/A
3 rd Phalange	55	7			N/A
Radius (Distal Right)	369	185			N/A
Radius (Distal Left)	389	195			N/A

Animal Bones Used to Determine the NISP and Disarticulated Large ABGs for the Indian Knoll Site Continued.

Deer	NISP	MNI	Bear	NISP	MNI
Radius (Proximal- Right)	387	194			N/A
Radius (Proximal- Left)	449	225			N/A
Ulna (Proximal- Left)	487	244			N/A
Ulna (Proximal- Right)	206	103			N/A
Rib	1553				N/A
Scapula	1925				N/A
Tibia (Distal- Left)	722	361			N/A
Tibia (Distal- Right)	628	314			N/A

Animal Bones Used to Determine the NISP and Disarticulated Large ABGs for the Indian Knoll Site Continued.

Deer	NISP	MNI	Bear	NISP	MNI
Tibia (Proximal- Left)	316	158			N/A
Tibia (Distal- Right)	289	145	0	0	N/A
Vertebrae - Atlas	293	N/A	0	0	N/A
Vertebrae- Axis	276	N/A	0	0	N/A
Vertebrae- other cervical	403	N/A	0	0	N/A
Vertebrae- Thoracic	301	N/A	0	0	N/A
Vertebrae- Lumbar	352	N/A	0	0	N/A
Vertebrae- Sacral	9	N/A	0	0	N/A
Total	18,024		2		

Animal Bones Used For the Small Mammal ABGs at the Indian Knoll Site

	Raccoon NISP	MNI	Opossum NISP	MNI
Astragalus	0	0	0	0
Calcaneus	0	0	0	0
Femur (Proximal- Left)	0	0	0	0
Femur (Proximal- Right)	4	4	0	0
Femur (Distal- Left)	4	4	0	0
Humerus (Left)	5	5	1	1
Humerus (Right)	2	2	0	0
Mandible	260	N/A	34	34
Maxilla	9	N/A	0	0
Pelvis	0	0	0	0
Radius	0	0	0	0

Animal Bones Used For the Small Mammal ABGs at the Indian Knoll Site Continued.

	Raccoon NISP	MNI	Opossum NISP	MNI
Rib	38	N/A	0	0
Ulna	0	0	0	0
Skull	38	38	0	0
Scapula	0	0	2	0
Tibia (Left)	1	1	0	0
Tibia (Right)	3	3		
Ulna (Right)	0	0	0	0
Ulna (Left)	0	0	0	0
Vertebrae- Atlas	1	1	0	0
Vertebrae- Axis	0	0	0	0
Lumbar	7	0	0	0
Cervical	1	1	0	0
Metacarpals	1	0	0	0
Metatarsals	3	0	0	0

Animal Bones Used For the Small Mammal ABGs at the Indian Knoll Site Continued.

	Raccoon NISP	MNI	Opossum NISP	MNI
Fibula	0	0	0	0
Tarsal				
Tibia tarsal	0	0	0	0
Penis Bone	33	33	0	0
Total	410		37	

Animal Bones Used For the Small Mammal ABGs at the Indian Knoll Site

Squirrel	NISP	MNI	Rabbit (Cotton Tail)	MNI	Ground Hog	MNI
Femur	6	N/A	0	0	0	0
Femur (Left)	0	0	1	1	2	2
Femur (Right)	0	0	0	0	3	3
Humerus	0	0	1	1	1	1
Humerus (Left)	0	0	0	0	1	1
Humerus (Right)	0	0	0	0	2	2
Mandible	0	0	2		16	N/A
Pelvis	1	0	0	0	1	1
Radius	1				0	0
Radius (Left)	0	0	0	0	2	2
Radius (Right)	0	0	0	0	2	2
Rib	0	0	0	0	7	0

Animal Bones Used For the Small Mammal ABGs at the Indian Knoll Site

Squirrel	NISP	MNI	Rabbit (Cotton Tail)	MNI	Ground Hog	MNI
Ulna	1	0			0	0
Skull		0	1	1	0	0
Scapula	0	0	0	0	3	0
Tibia	1	1	0	0	0	0
Tibia (Left)			1	1	0	0
Ulna (Right)	0	0	0	0	6	6
Ulna (Left)	0	0	0	0	8	8
Vertebrae- Atlas	0	0	0	0	3	3
Vertebrae- Axis	0	0	0	0	4	4
Lumbar	0	0	0	0	1	1
Thoracic	0	0	0	0	5	5
Metacarpals	0	0	0	0	0	0
Metatarsals	0	0	3	0	0	0
	10		9		67	

Animal Bones From the Eva Site used to Develop Large Mammal and Small Mammal Disarticulated ABGs, NISP.

Species	Big Sandy Phase	Three Mile Phase	Eva Phase	ABG
Deer	524	1813	12,407	LM
Bear	13	26	449	LM
Raccoon	29	168	294	SM
Opossum	11	44	51	SM
Beaver	1	25	92	SM
Rabbit	4	28	13	SM
Muskrat	1	1	1	SM
Mink	1	5	0	SM
Fox	1	1	0	SM
Groundhog	1	15	0	SM
Wildcat	0	2	6	SM
Otter	0	2	1	SM
Squirrel	0	0	1	SM
Turkey	21	97	176	SM
Bird Species	12	82	33	SM
Turtle	40	138	452	SM

Deer Carcass Parts from the Eva Site Used For the LM ABG (Deer) (Disarticulated Large Mammal ABG), NISP.

Species	Big Sandy	Three Mile	Eva
Deer			
Astragalus	28	81	482
Calcaneus	46	146	697
Femur	13	27	331
Humerus	21	66	805
Mandible	33	97	879
Maxilla	5	19	280
Pelvis	19	68	716
Phalange	51	263	612
Radius	39	82	1054
Rib	25	67	561
Skull	7	13	62
Scapula	14	66	789
Tibia	30	112	906
Vertebrae	35	83	1605
Tarsal	3	15	103
Ulna	35	74	502
Total	524	1813	12,407

Bear Carcass Parts From the Eva Site Used for the Disarticulated Large Mammal ABG, NISP.

Species	Big Sandy	Three Mile	Eva
Bear			
Calcaneus	1	0	0
Humerus			3
Rib	0	0	1
Vertebrae	12	0	0
Tarsal	0	26	444
Ulna	0	0	1
Total	13	26	449

Animal Species Used To Develop ABGs For the Dust Cave Site (Walker 1998), NISP.

Species	Kirk Stemmed (Zone P)	Eva/Morrow Mountain	Three Mile Island	ABG
Deer	9	52	42	LM ABG
Eastern Cottontail Rabbit	8	10	3	SM ABG
Rabbit Species	6	3	2	SM ABG
Swamp Rabbit	2	1	1	SM ABG
Gray Squirrel	51	29	11	SM ABG
Racoon	8	13	5	SM ABG
Opossum	7	7	2	SM ABG
River Otter	0	1	0	SM ABG
Beaver	0	2	1	SM ABG
Sandhill Crane	0	0	0	SM ABG
General Turtle Species	18	51	24	SM ABG
Mud or Musk Turtle	4	18	5	SM ABG
Pond, Marsh, Box Turtles	6	3	2	SM ABG
Eastern Box Turtle	2	25	0	SM ABG
Painted Turtle	1	9	0	SM ABG

VITA

Mr. Brown was born and raised in Hackneyville, Alabama and earned a bachelor's degree in Anthropology from the University of Alabama in Birmingham and a master's degree in Anthropology from the University of Alabama. Mr. Brown spent most of the 1990s as a team member of the Tel-Beth Shemesh excavation in Israel, a Late Bronze/Early Iron Age site located in the Shephelah region 10 miles west of Jerusalem. The Tel Beth Shemesh faunal material formed the basis for his master's degree that linked state formation with changes in the pastoral economy.

In the early 2000's Mr. Brown was a team member on the Samara River Valley Project, a joint expedition with Hartwick College of New York and the Samara Pedagogical Institute in Samara Russia. This was one of the first joint American-Russian research projects following the demise of the Soviet Union. Mr. Brown, along with Nerrissa Russell and Audrey Brown , analyzed Bronze Age faunal remains including assemblages from burial kurgans, a village site and herding camps. This research was published in 2016 by the UCLA Costen Institute of Archaeology entitled: *A Bronze Age Landscape In The Russian Steppes: The Samara River Valley Project*. Following the Samara River Valley Project, Mr. Brown was a team member for the Kibit I project in the steppe/forest region of Russia which was part of the larger Samara River Metals Project conducted by students from the University of Chicago. The results were published in the *Samara Bronze Age Metals Project: Investigating Changing Technologies and Transformations of Value in the Western Eurasian Steppes*. In *Beyond the Steppe and Sown Proceedings of the 2002 University of Chicago Conference on Eurasian Archaeology*.

Over the last 25 years Mr. Brown has conducted archaeological investigations throughout the American Southeast and Mid-West including Phase I surveys, Phase II investigations, and Phase

III mitigations in Alaska, Alabama, Georgia, Louisiana, Kentucky, Mississippi, Tennessee, North Carolina, Florida, South Carolina, West Virginia, Maryland, Virginia, Missouri, Ohio, Pennsylvania, Oklahoma and Arkansas.

Mr. Brown entered the PhD program at the University of Tennessee in 2010 and studied hunter-gatherer archaeology under the guidance of Dr. David Anderson. The PhD dissertation, using the relationships between hunter-gatherers and their animals was formulated as a different line of evidence to better understand how hunter-gatherers organize their communities.